
Appendix G Traffic Study

Santa Ana Renaissance Specific Plan Traffic Study

January 2010

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January 26, 2010

Mr. William Hoose
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Subject: (Revised) Santa Ana Renaissance Specific Plan Traffic Study in City of Santa Ana

Dear Mr. Hoose:

KOA Corporation is pleased to present this (revised) traffic impact study report for the proposed Santa Ana Renaissance Specific Plan project in the City of Santa Ana. The revision is based on changes to the land use projections received from the City in December, 2009. The project site consists of 440 acres of land uses and is generally bounded by Flower Street on the west, Civic Center Boulevard on the north, the Santa Ana Freeway to the northeast, Grand Avenue on the east and First Street to the south. The Renaissance Specific Plan proposes a variety of land use policies and circulation improvements and allows considerable density in some of the Planning Areas with mixed-use characteristics for most of the areas.

The traffic study has been prepared in accordance with the Santa Ana General Guidelines for Traffic Impact Studies and California Department of Transportation (Caltrans) Traffic Study Guidelines to analyze the traffic effects upon the surrounding street system based upon land use and circulation changes identified in the Renaissance Specific Plan.

Please contact our office if you have any questions or comments about the report, or if you need additional information to complete your submittal. It has been a pleasure to prepare this study for PBS&J and the City of Santa Ana.

Sincerely,



Min Zhou, P.E.
Vice President

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I. INTRODUCTION

The proposed Renaissance Specific Plan project is located within the City of Santa Ana, Orange County, California (Figure 1-1). The project site consists of 440 acres and is generally bounded by Flower Street on the west, Civic Center Drive on the north, the Santa Ana Freeway to the northeast, Grand Avenue on the east and First Street to the south.

The project site is currently urban and developed with a wide range of civic, commercial, industrial and residential land uses. Surrounding land uses vary, and include civic, commercial, industrial and residential uses. Proposed changes for the existing neighborhoods or districts located in the central area of the City include:

Civic Center

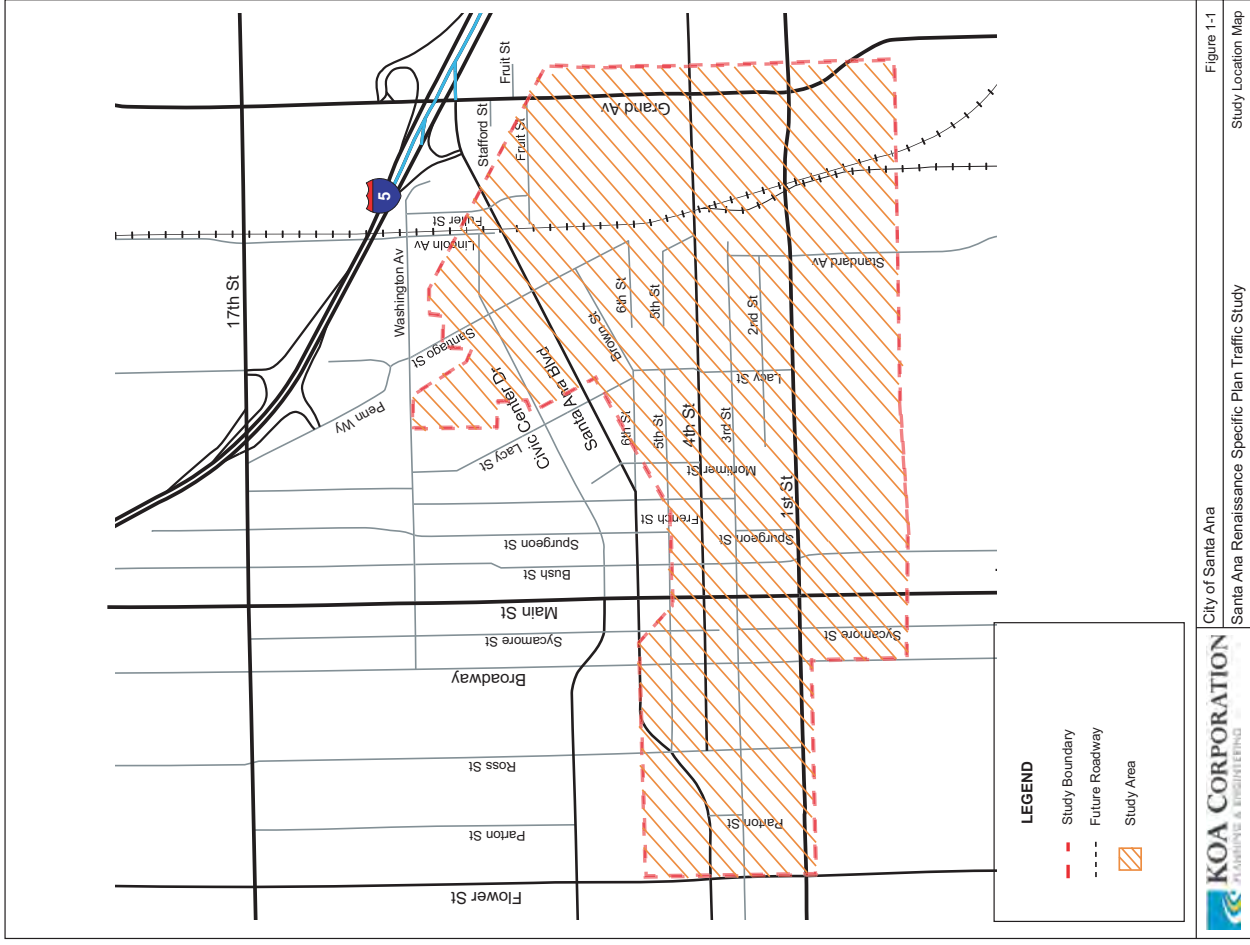
This district is the westernmost area in the plan and is characterized by "super" blocks that aggregated the historic street grid and have been developed over the past 50 years with primarily large federal, state and local government buildings. The proposed plan seeks to modify the street grid through potential reconfigurations and realignments of certain streets that result in a more balanced pedestrian environment and additional open space. Vacant land is limited in terms of actual lots. However, new building sites are created by treating the open spaces between the existing buildings as a series of quads to receive additional buildings that form the quads. New buildings proposed in this area are no more intense than those already present.

Downtown

The district connects the Civic Center to the Lacy and French Park neighborhoods to the east and consists of approximately 30 individual blocks. With the exception of a few super blocks and operational modifications such as one-way streets and the lack of on street parking, the historic street grid is largely intact. The proposed plan seeks to repair the street grid through limited re-establishment of street rights-of-way and the reestablishment of two-way streets and on-street parking throughout the district to appropriately recognize the commercial circulation and pedestrian nature of the district. Vacant land in the area is limited with redevelopment or rehabilitation of sites and/or existing buildings the primary opportunity for new activity. New buildings in this area are up to 10 stories, consisting of mixed-use with housing and/or office above retail.

Lacy Neighborhood

The neighborhood connects with downtown to the west and an industrial area to the east and is characterized by a variety of historic and relatively intense, post World War II multifamily development up to 4 stories. Two super blocks exist and disrupt the physical connections between the neighborhood and nearby areas. The proposed plan seeks to repair the street grid through limited re-establishment of street rights-of-way to improve access and the pedestrian environment along with new open space.



Vacant land in the area is limited with redevelopment or rehabilitation of sites and/or existing buildings as the primary opportunity for new activity. New buildings in this area are up to 3 stories, primarily residential with some mixed use and corridor development along First Street.

Logan Neighborhood

The neighborhood represents the northernmost area in the plan and is characterized by a variety of large and small industrial businesses interspersed with equally established residential uses and neighborhood-serving commercial. The proposed plan seeks to address community-wide traffic that uses the neighborhood as an alternate route to major streets through certain realignments of intersections to maintain access while discouraging longer distance commuting patterns from the neighborhood. In addition, the proposed plan seeks to improve the compatibility between the residential and industrial uses by enabling industrial activity that is in physical scale to the small scale residential in the area. Larger industrial activities are proposed for peripheral areas in the plan. New buildings in this area are up to 2 stories.

Industrial Area west of the Rail Line

The area is the east end of the lands west of the rail line between First Street and the Rail Station to the north. The area is characterized by industrial sheds, outdoor storage and activity with some recent, tilt-up single-story industrial buildings. The block structure is relatively intact with some super blocks. The proposed plan seeks to redevelop the area into an intense, residentially-oriented neighborhood strategically positioned near the rail station, with of a variety of multi-family building types ranging from 2 to 4.5 stories.

Rail Station

The district represents the eastern most area in the plan reaching Grand Avenue in one area and generally east of Santiago Street to approximately 4 blocks east of the rail line between First Street and Interstate 5. The area is characterized by vacant land, industrial sheds and outdoor storage/activity. The proposed plan seeks to address the opportunity that the Santa Ana Regional Transportation presents for these adjacent lands. The area west of the rail line currently used for at-grade parking is subdivided into new blocks that enable intensification of the station site with mixed use buildings up to 5 stories. The area east of the rail line (north and south of Santa Ana Boulevard) is redeveloped as well into a series of new blocks and open space that enable the most intense development in the plan area. Buildings are primarily residential ranging from 2-4 stories with mixed use towers up to 20 stories.

Traffic Impact Study Scope

This report presents a review of existing traffic conditions in the study area, including existing roadway segment conditions, and existing levels of service at 50 intersections. Freeway ramps have also been evaluated per Caltrans' requirements. Future intersection conditions including both 2030 project opening year conditions and 2035 General Plan conditions are also analyzed. The study also identifies the improvements necessary to attain or maintain the desired service levels throughout the future

conditions. Special issues such as neighborhood impacts and parking have been addressed during the study.

The study is conducted in accordance with *Santa Ana General Guidelines for Traffic Impact Studies* and *California Department of Transportation (Caltrans) Traffic Study Guidelines*.

2. PROJECT STUDY METHODOLOGY

This chapter documents the methodologies and assumptions used to conduct the analysis for the proposed project. This section contains the following background information:

- Study timeframes
- Study area description
- Analysis methodologies
- Future traffic volume forecast methodologies

2.1 Study Timeframes

This report presents an analysis of the intersection operating conditions during the morning and evening peak hours for the following anticipated timeframes:

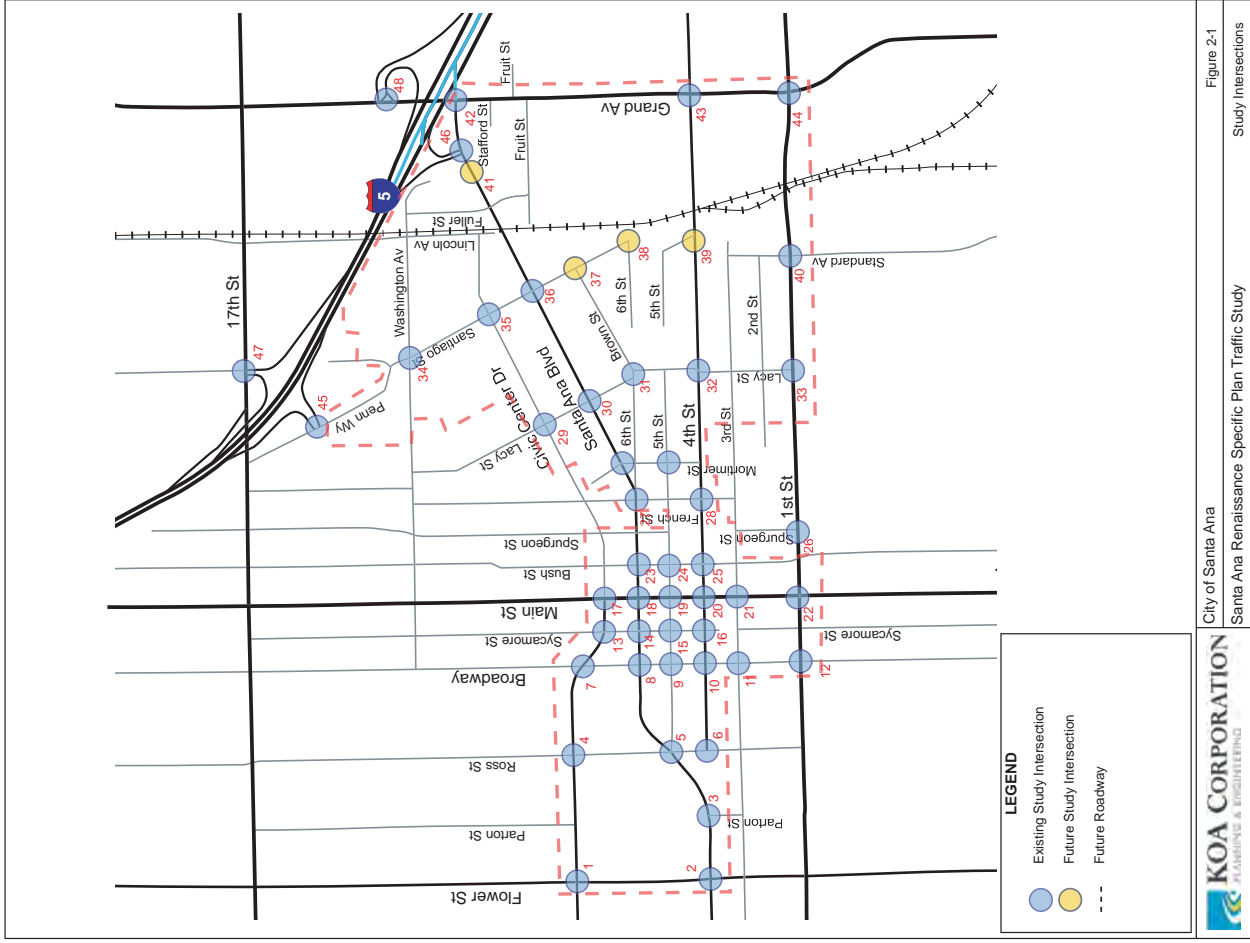
- Existing Conditions (Year 2009)
- Anticipated Project Buildout Year (2030) Without Project
- General Plan (2035) Without Project
- Anticipated Project Buildout Year (2030) With Project
- General Plan (2035) With Project

Since the Specific Plan includes a large group of small development sites, the phasing and timing of individual development components are not known, no phasing analysis is appropriate. Future traffic study for a specific development may be needed after the development is finalized.

2.2 Project Study Area

The study area was determined through initial consultation with the City of Santa Ana and the initial review of the Orange County Transportation Analysis Model (OCTAM) select link analysis. The study area consists of the following 50 intersections: All intersections are illustrated on Figure 2-1.

- Flower Street at Civic Center Drive
- Flower Street at Santa Ana Blvd.
- Parton Street at Santa Ana Blvd.
- Ross Street at Civic Center Drive
- Ross Street at Santa Ana Blvd.
- Ross Street at 4th Street
- Broadway at Civic Center Drive
- Broadway at Santa Ana Blvd.
- Broadway at 5th Street
- Broadway at 4th Street
- Broadway at 3rd Street
- Broadway at 1st Street
- Sycamore Street at Civic Center Drive
- Sycamore Street at Santa Ana Blvd.
- Sycamore Street at 5th Street
- Sycamore Street at 4th Street
- Main Street at Civic Center Drive
- Main Street at Santa Ana Blvd.
- Main Street at 5th Street
- Main Street at 4th Street
- Main Street at 3rd Street
- Main Street at 1st Street



- Bush Street at Santa Ana Blvd.
- Bush Street at 5th Street
- Bush Street at 4th Street
- Spurgeon Street at 1st Street
- French Street at Santa Ana Blvd.
- French Street at 4th Street
- Lacy Street at Civic Center Drive
- Lacy Street at Santa Ana Blvd.
- Lacy Street at 6th Street
- Lacy Street at 4th Street
- Lacy Street at 1st Street
- Santiago Street at Washington Avenue
- Santiago Street at Civic Center Drive
- Santiago Street at Santa Ana Blvd.
- Santiago Street at Brown Street (Future Intersection)
- Santiago Street at 6th Street (Future Intersection)
- Santiago Street at 4th Street (Future Intersection)
- Spurgeon Street at 1st Street (Future Intersection)
- Standard Street at 1st Street
- U2-4 at Santa St Blvd. (Future Intersection)
- Grand Avenue at Santa Ana Blvd.
- Grand Avenue at 4th Street
- Grand Avenue at 1st Street
- Penn Way (Santiago Street) at I-5 SB Ramps
- I-5 SB Ramps at Santa Ana Blvd.
- I-5 NB Ramps at 17th Street
- Grand Avenue at I-5 NB Ramps
- Mortimer Street at Santa Ana Blvd
- Mortimer Street at 5th Street

2.3 Analysis Methodologies

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report. The methodologies described are consistent with *City of Santa Ana General Guidelines and Caltrans' Guidelines for Traffic Impact Studies*.

Street system operating conditions are typically described in terms of "level of service." Level of service (LOS) is a report-card scale used to indicate the quality of traffic flow on roadway segments and at intersections. Level of service ranges from Level A (free flow, little congestion) to Level F (forced flow, extreme congestion). Intersection capacity analysis, roadway segment ADT analysis, and freeway ramp analysis methodologies are presented separated as below.

2.4 Intersection Capacity Analysis

Consistent with Orange County Congestion Management Program (2005 Orange County Congestion Management Program) requirements, the technique used to assess the operation of signalized intersections in Orange County is known as the intersection capacity utilization (ICU) method. To calculate the ICU value for an intersection, the volume of traffic using the intersection is compared with the capacity of the intersection.

The ICU value is usually expressed as a decimal percent (e.g., 0.861). The decimal percent represents that portion of the hour required to provide sufficient capacity to accommodate all intersection traffic if all approaches operate at capacity.

A number of assumptions are required regarding specific input values to the ICU methodology for City of Santa Ana. The specific assumptions include the use of a saturation flow value of 1,700 vehicles per lane per hour (vphpl) for through lanes, 1,600 vphpl for turn lanes. A lost time factor of 5 percent is applied to the ICU calculations. Finally, no credit for "de facto" right turn lanes is allowed in the City of Santa Ana.

In addition to the above discussed ICU analysis method, the *2000 Highway Capacity Manual (HCM)* analysis procedures have been used to analyze the intersections which are related to Caltrans facilities (ramp intersections), based on Caltrans requirements. The following intersections have been analyzed by the HCM method:

- Penn Way (Santiago St.) at I-5 SB Ramps
- I-5 SB Ramps at Santa Ana Blvd.
- I-5 NB Ramps at 17th Street
- Grand Avenue at I-5 NB Ramps

The LOS for unsignalized intersections will be based upon the HCM methodology. The 2000 Highway Capacity Manual includes a detailed discussion of the procedures used to calculate the level of service based on delay per vehicle for all-way stop controlled intersections and minor road stop controlled intersections.

Table 2-1 includes the LOS definition for all intersection analysis.

Table 2-1 Levels of Service for Intersections

Level of Service	Signalized Intersection Volume/Capacity Ratio (ICU)	Signalized Intersection Delay (seconds) (HCM)	Unsignalized Intersection Control Delay (seconds) (HCM)
A	0.00 – 0.60	0 – 10	0 – 10
B	0.61 – 0.70	10 – 20	10 – 15
C	0.71 – 0.80	20 – 35	15 – 25
D	0.81 – 0.90	35 – 55	25 – 35
E	0.91 – 1.00	55 – 80	35 – 50
F	1.00 and up	80 or more	50 or more

2.5 Daily Roadway Segment Analysis

Road segment analysis is determined based on the methodology presented in the Orange County MPAH and the City of Santa Ana Circulation Element. V/C ratios are not used in segment analysis. Table 2-2 indicates the LOS ranges based on the capacity assumptions.

Table 2-2 Levels of Service for Arterial Street Segments Based upon Daily Traffic Volumes

Roadway Classification	Lanes/ Configuration	Level of Service A	Level of Service B	Level of Service C	Level of Service D	Level of Service E	Level of Service F
Principal Arterial	8 Lanes Divided	45,000	52,500	60,000	67,500	75,000	> 75,000
Major Arterial	6 Lanes Divided	33,900	39,400	45,000	50,600	56,300	> 56,300
Primary Arterial	4 Lanes Divided	22,500	26,300	30,000	33,800	37,500	> 37,500
Secondary Arterial	4 lanes Undivided	15,000	17,500	20,000	22,500	25,000	> 25,000
Commuter Street	2 Lanes Undivided	7,500	8,800	10,000	11,300	12,500	> 12,500

The daily capacity of a roadway correlates to a number of widely varying factors, including traffic peaking characteristics, traffic turning volumes, and the volume of traffic on crossing streets. The daily capacities are therefore most appropriately used as a screening tool to determine the need for more detailed peak hour analysis and to assist in determining the appropriate mitigation measures (i.e., whether additional through lanes may be a necessary or desirable mitigation).

2.6 Freeway Ramp Analysis

Peak hour freeway ramp traffic operations analysis is conducted by calculating a peak hour volume to capacity (V/C) ratio. Table 2-3 summarizes the peak hour ramp capacity assumptions. The freeway ramp performance criteria have been derived from the Caltrans Highway Design Manual (July, 1995) and the Caltrans Ramp Meter Design Manual (January, 2000). These criteria have been used previously in studies by other local jurisdictions. The Caltrans publication Guide for the Preparation of Traffic Impact Studies (State of California Department of Transportation, January, 2001) cites both of these resources as appropriate analysis methodology sources for ramp and ramp junction analysis. Potential impacts identified in this planning level analysis may yield different results from more detailed analysis procedures, such as those contained in the 2000 HCM.

Table 2-3 Levels of Service for Freeway Ramps

Roadway Type	Peak Hour Capacity at Los "E" (Vehicles per Hour)
1 One-lane Metered On-Ramp, 1 Mixed Flow Lane at Meter	900
2 One-lane Metered On-Ramp, 1 Mixed Flow + 1 HOV Lane at Meter	1,080
3 One-lane Metered On-Ramp, 2 Mixed Flow Lanes at Meter	1,500
4 Two-lane Metered On-Ramp, 2 Mixed Flow Lanes at Meter	1,800
5 One-lane Unmetered Ramp	1,500
6 Two-lane Unmetered On-Ramp, tapers to one merge lane at or beyond gore point	2,250
7 Two-lane Unmetered Off-Ramp, with only one auxiliary lane	2,250
8 Two-lane Unmetered On-Ramp, does not taper to one merge lane	3,000
9 Two-lane Unmetered Off-Ramp, with two auxiliary lanes	3,000

2.7 Standards of Significance

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. Figure 2-2 identifies the intersections within the MDA area.

For the purposes of traffic study preparation, 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 an MDA, Level of Service F within an MDA with the addition of project traffic. For study intersections located outside of an 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 an MDA, if the intersection is expected to operate at unacceptable Levels of Service (Intersection Level of Service F at Santa Ana intersections within an MDA) under base conditions (conditions without the project), improvement and recommendations are requested to achieve acceptable levels of service.

In general, a traffic study will be required to provide measures to alleviate significant traffic impacts at intersections to achieve Level of Service D (at the minimum) for outside a "Major Development Area". Additionally a traffic study will be required to provide measures to alleviate the significant traffic impact at intersections located within "Major Development Areas" to achieve a Level of Service E (at the minimum). If the project contribution to the volume/capacity ratio at the intersection is greater than .01

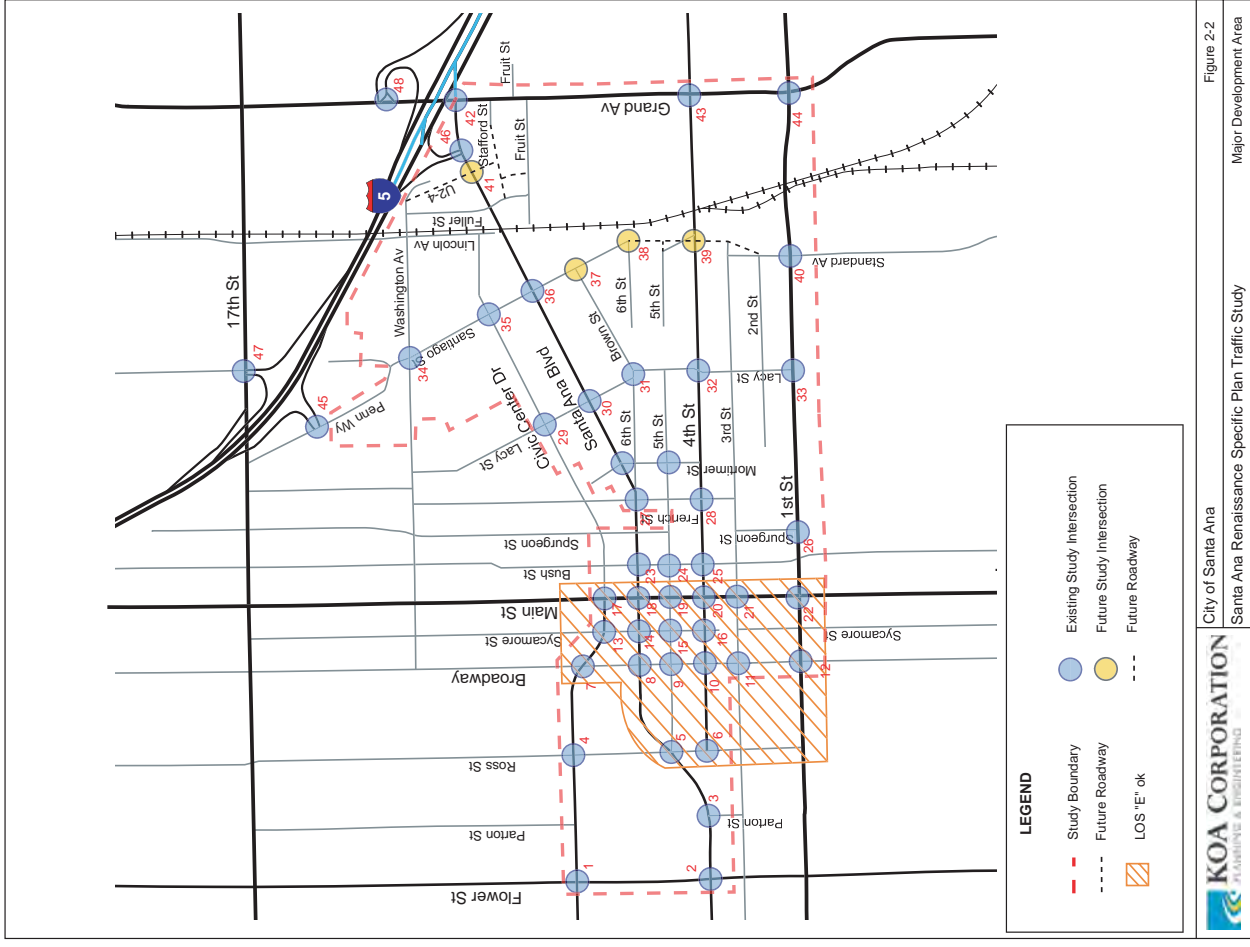
Project Study Methodology

and if the location is at Level of Service D or poorer outside of an MDA or Level of Service E or poorer within an MDA, the impact is considered significant.

For those signalized intersections which may not contribute to 0.01 or greater ICU or V/C increases, the City requires a fair share contribution toward the expected cost of improvements at the subject intersection. The fair share is based upon the project's relative contribution toward the total future added traffic, which consists of traffic from the project, other cumulative project traffic, and growth of ambient background traffic.

Improvements are required for locations that operate at acceptable level of service without the project, but which operate at an unacceptable level of service with the project. For locations that are forecast to operate worse than the acceptable level even without the project, the traffic study must include improvements to achieve acceptable levels of service per the City of Santa Ana's criteria. Those mitigation measures/improvements will be described as well as graphically illustrated as per the City of Santa Ana General Guidelines for the preparation of traffic studies.

The CMP standard that has been applied to the freeway system is an increase of 0.03 V/C ratio or greater to define the freeway ramp impact.



2.8 Existing Traffic Count Data

Existing daily and peak hour traffic data was obtained from the City, other technical sources and recent counts conducted by KOA Corporation. Traffic data collected by KOA Corporation in Orange County in 2009 indicated that 2009 traffic levels were lower than 2007 traffic levels. For this reason 2007 counts were used for this study where available, as they are more conservative from an impact/mitigation point of view. All traffic count data used in this study is compiled in Appendix A of this report.

Traffic flow conservation was evaluated and applied to ensure the continuity of traffic flow. Minor adjustments were applied to a few intersection volumes. Per evaluation of the historical traffic count data, a 0.5% annual growth rate was applied to counts older than 2007 in order to generate the 2009 existing conditions volumes. This rate was approved by the city staff during the course of the study.

2.9 Future Traffic Volume Forecasts

Separate methodologies were applied to develop the background traffic forecasts for near-term anticipated project buildout (2030) and long range (2035) conditions.

The 2030 background traffic is composed of existing traffic, 0.5% background growth per year and the traffic that is anticipated to occur based on known development projects within the vicinity of the study area that will contribute some (or all) of their traffic to the various study area roadways and intersections. The general methodology approach described for estimating the project traffic (trip generation, trip distribution, and traffic assignment) was applied for each of the cumulative projects used in this study.

The 2030 With Project traffic is composed of 2030 background traffic plus the project only traffic which was generated based on the trip generation, trip distribution, and traffic assignment methodology. The project trip generation is based on the most recent Institute of Transportation Engineers (ITE) Trip Generation, 8th Edition. OCTAM 3.2 was used to evaluate the distribution and likely travel routes of the project traffic. A series of select link (trip distribution) analyses were performed using the OCTAM 3.2 model 2030 horizon year scenario.

The long range (2035) analysis is based on future background traffic forecasts obtained from the OCTAM 3.2 travel demand forecasting model and modified to comply with the newly released OCTAM 3.3 model. OCTAM 3.2 and 3.3 are the Orange County Transportation Authority's (OCTA's) travel demand forecasting models. They are used to evaluate circulation and transit system needs throughout the County of Orange. The OCTAM models consist of a 2,940 traffic analysis zone (TAZ) system which encompasses the five (5) county Southern California region. The primary focus of the modeling area is Orange County.

The OCTAM 3.2 model uses the latest adopted demographic forecasts, commonly referred to as Orange County Projections, adopted in 2004 (OCP-2004). The OCP-2004 demographic forecasts include data in 5 year increments through 2030 and are the official Orange County forecasts. The growth in housing, population, and employment included in the OCP-2004 demographic projections is consistent with the anticipated growth that is expected in conjunction with buildout of the City of Santa Ana General Plan land uses and circulation element.

KOA Corporation worked closely with the OCTA staff to refine the OCTAM 3.2 highway network for the Santa Ana Renaissance project. The modified traffic model was then used to produce link volume traffic forecasts in the study area at the AM, PM, and ADT levels, both for a base year model (2000) and a future year model (2030). The AM and PM link volume forecasts from the base and future year models, along with the existing turning movement traffic counts, were used as the basis for producing 2030 future traffic volumes. Since OCTAM 3.2 represents 2030 conditions, an annual growth factor (0.5%) has been applied to the model data in order to generate the 2035 conditions.

OCTA released the OCTAM 3.3 model as this study was being finalized. KOA conducted a screening analysis comparing OCTAM 3.3 and OCTAM 3.2. The screening analysis surrounding the City of Santa Ana indicates that OCTAM 3.3 represents an increase of about 11% higher traffic volumes forecast for both the AM and the PM peak hour models. In this update to the draft traffic study, KOA applied a 11% growth factor to the original OCTAM 3.2 traffic volume forecast to account for this increase.

The traffic model forecasts were used to predict 2035 Without Project intersection turning movement volumes at the study intersections using a proprietary methodology which adjusts existing turning movement volumes based on expected growth in approach volumes. The refined future intersection turning movement volumes are based on the algorithm obtained from the report Highway Traffic Data for Urbanized Area Project Planning and Design (National Cooperative Highway Research Program Report 255, Transportation Research Board, 1982, pp. 105-109), commonly referred to as NCHRP-255.

The General Plan (2035) Without Project traffic volumes developed using the updated OCTAM traffic forecasts were then compared with 2030 volumes to ensure that all cumulative projects and area-wide growth are captured within the General Plan conditions.

The 2035 With Project traffic is composed of 2035 background traffic plus the project only traffic which was generated based on the trip generation, trip distribution, and traffic assignment methodology. The project trip generation is based on the most recent Institute of Transportation Engineers (ITE) Trip Generation, 8th Edition. OCTAM 3.2 was used to evaluate the distribution and likely travel routes of the project traffic. A series of select link (trip distribution) analyses were performed using the OCTAM 3.2 model 2030 horizon year scenario.

3. Existing Conditions

This section documents existing conditions in the study area, including the roadway network conditions, study intersections, roadway segments, freeway ramp conditions, and existing transit conditions. The General Plan circulation element and the planned improvements in the study area have also been discussed.

3.1 Area Roadway Network

The following discusses the specific roadways in the Santa Ana Renaissance project vicinity that are affected by project-related traffic. The project location is bounded by 17th Street on the north, 1st Street on the south, Flower Street on the west, and Grand Avenue on the east. The area of potential impact is larger than the project location, as determined by project traffic impact analysis.

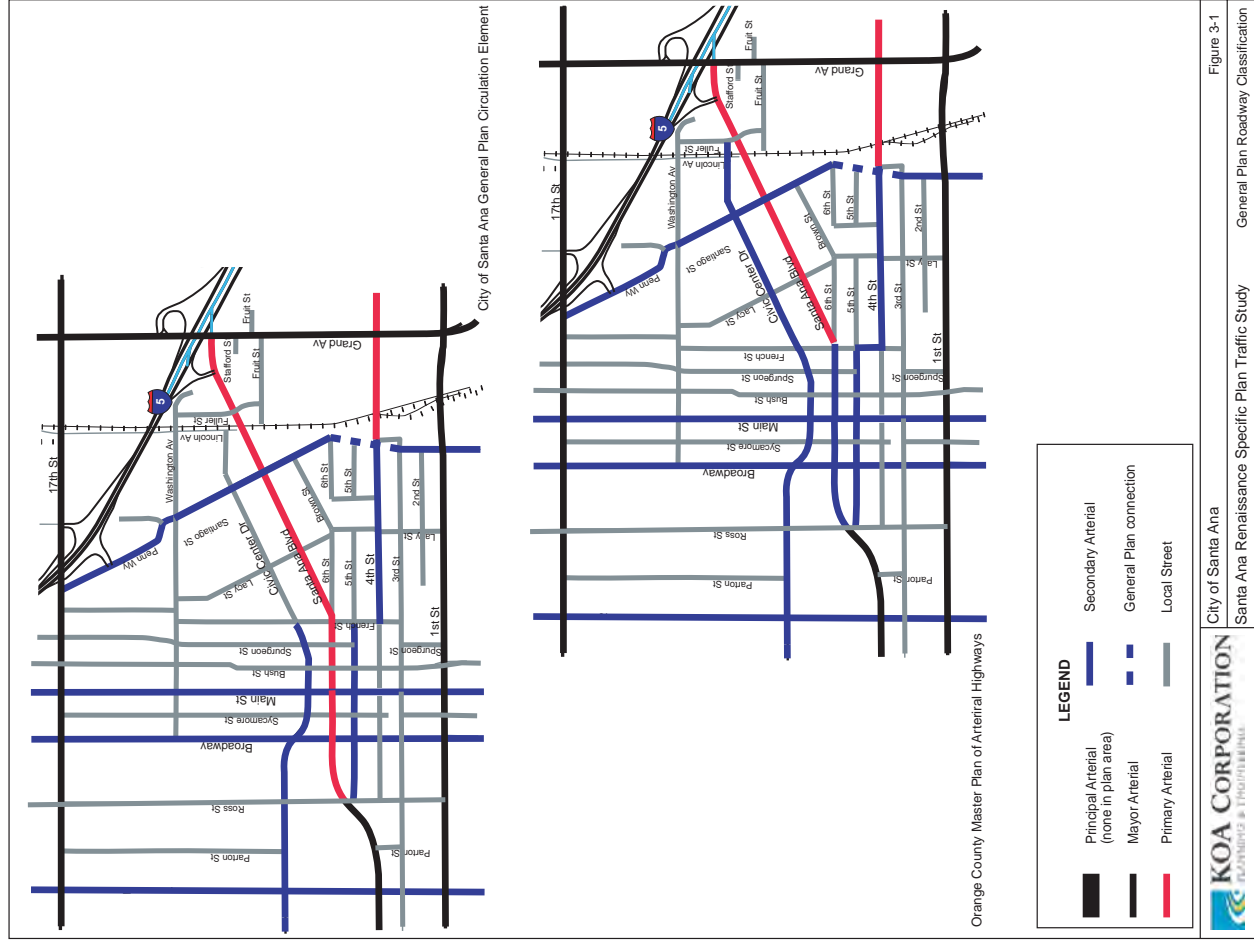
Figure 3-1 depicts the City of Santa Ana General Plan Circulation Element and county's Master Plan of Arterial Highway (MPAH) within the study area. The roadway cross-sections for the various classifications are depicted on Figure 3-2. As indicated, arterial roadways that will provide access to nearby areas and to the regional freeway system include 1st Street, 4th Street, 5th Street, Santa Ana Boulevard, Civic Center Drive, 17th Street, Flower Street, Broadway Avenue, Main Street, Santiago St., and Grand Avenue. Comparing the City's Circulation Element with the MPAH classification, discrepancy has been identified for a couple of roadways within the study area. Civic Center Drive from French to Lincoln is identified as Secondary and Santa Ana Boulevard has different designation based on the MPAH classification. The City is pursuing a cooperative agreement with OCTA to correct the discrepancies between the City Circulation element and the MPAH. A brief description of each roadway is provided as below:

1st Street

1st Street is an east-west six-lane divided road classified as a Major Arterial on the Circulation Element. 1st Street is designated as a Smart Street on the Orange County CMP Highway System. Within the study area, 1st Street has a curb-to-curb width of 84 feet with a 4- to 14-foot raised median. Parking is prohibited along 1st Street. The posted speed limit is 40 mph.

4th Street

4th Street is a two-lane undivided east-west road classified on the Circulation Element as a secondary Arterial between Main Street and Standard Avenue, and a Primary Arterial (six-lane) between Standard Avenue and I-5. In the study area, 4th Street has a 56-foot curb-to-curb width. Metered parking is allowed on both sides. The posted speed limit is 25 mph.



Existing Conditions

5th Street

5th Street is a three-lane east-west road classified as a secondary Arterial on the Circulation Element between Ross Street and French Street. It is currently operated as a one-way street in the eastbound direction in tandem with the one-way westbound operation on Santa Ana Boulevard. Parking is generally prohibited, except for the segment west of Main Street where metered parking spaces are provided along the south side. The posted speed limit is 25 mph.

Santa Ana Boulevard

Santa Ana Boulevard is an east-west road classified on the Circulation Element as a Primary Arterial east of Ross Street up to I-5, and a Major Arterial west of Ross Street up to Raitt Street. The segment between Ross Street and French Street is operated as on-way westbound with three travel lanes and a pavement width of 40 feet. Beyond the one-way segment, the lane configuration varies from four lanes between Bristol Street and Flower Street, to six lanes east of Santiago Street and two lanes west of Santiago Street. Parking is generally prohibited along Santa Ana Boulevard. The posted speed limit is 30 mph.

Civic Center Drive

Civic Center Drive is a four-lane divided east-west road classified as a secondary Arterial on the Circulation Element from Fairview Street to French Street. In the study area, Civic Center Drive has a curb-to-curb width of 64 feet. Parking is prohibited along Civic Center Drive. The posted speed limit is 35 mph.

17th Street

17th Street is a six-lane divided east-west road classified as a Major Arterial on the Circulation Element. 17th Street has a curb-to-curb width of 80 to 88 feet and a 14-foot raised median. Parking is prohibited along 17th Street. The posted speed limit is 40 mph.

Flower Street

Flower Street is a four-lane divided north-south road classified as a secondary Arterial on the Circulation Element south of 17th Street. Parking is not allowed and the posted speed limit ranges from 30 to 35 mph south of 17th Street. North of 17th Street, Flower Street is a two-lane divided residential street, with parking on both sides and a 25-mph posted speed limit. Northbound through movement is prohibited at the intersection of 17th Street and Flower Street.

Broadway

Broadway is a north-south four-lane undivided road classified as a secondary Arterial on the Circulation Element between I-5 and Ist Street. In the study area, Broadway varies in width from 55 feet curb-to-curb north of 5th Street, to 60 feet between Civic Center Drive and 5th Street. Broadway Street has a 10-foot two-way center turn lane in the vicinity of the project site. Parking is prohibited along Broadway. The posted speed limit ranges from 35 mph south of 17th Street to 40 mph north of 17th Street.

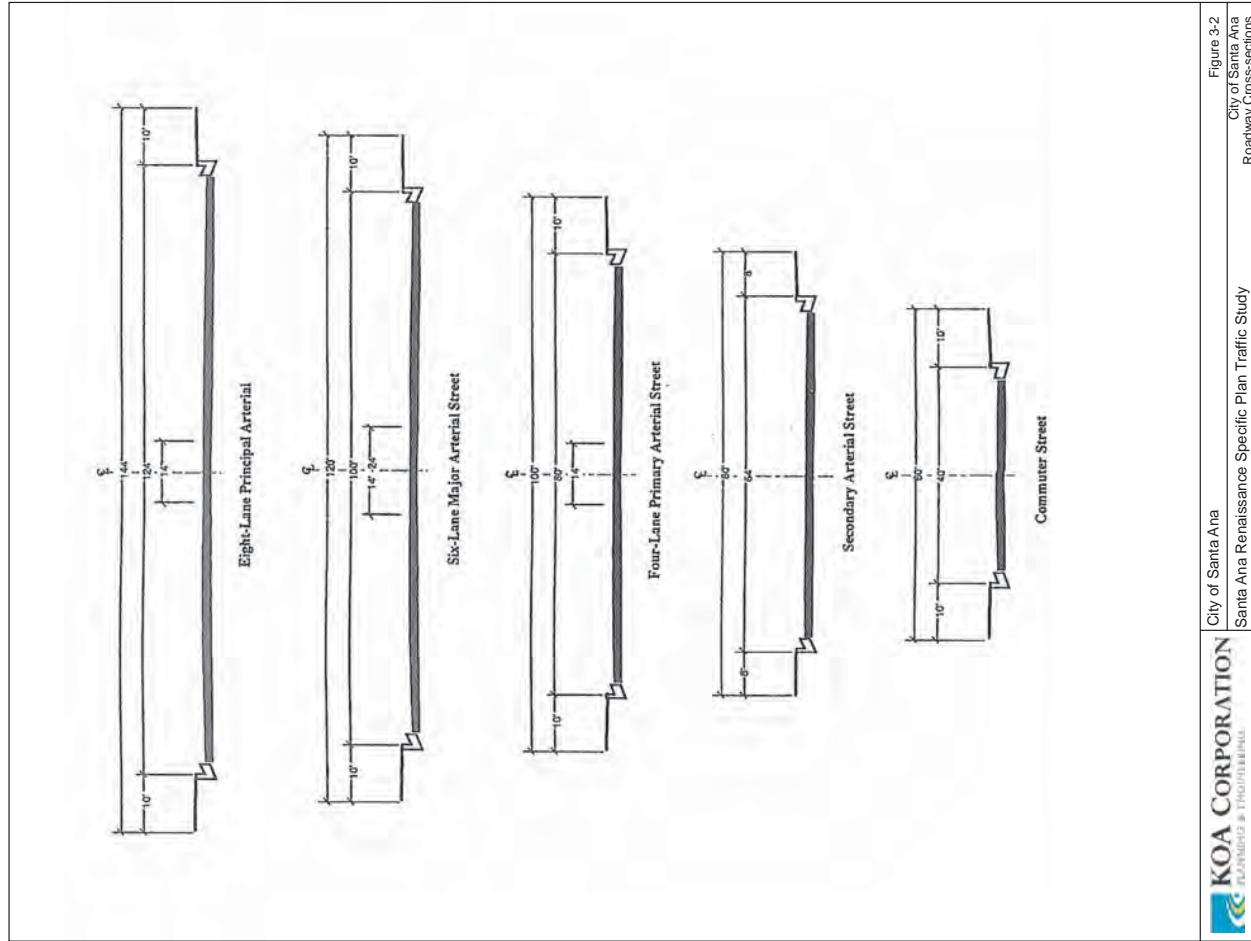


Figure 3-2
City of Santa Ana
Roadway Cross-sections

Existing Conditions

Main Street

Main Street is a four-lane north-south road classified on the City of Santa Ana Circulation Element as a secondary Arterial in the vicinity of the project. In the vicinity of I-5, Main Street is designated as a Major Arterial. In the study area, the width of Main Street varies from 52 feet curb-to-curb south of Civic Center Drive, to 72 feet curb-to-curb from I-5 to Civic Center Drive. Main Street between I-5 and Civic Center has a 10-foot two-way center turn lane.

Metered parking spaces are provided on certain segments of Main Street between the I-5 southbound ramps/Buffalo Avenue and 5th Street. Main Street has a posted speed limit of 35 miles per hour (mph) north of 17th Street, and 30 miles per hour south of 17th Street.

Santiago Street

Santiago Street is a north-south 2-lane divided roadway. It is classified on the City of Santa Ana Circulation Element as a secondary Arterial and the roadway segment will be extended and connected through 1st Street.

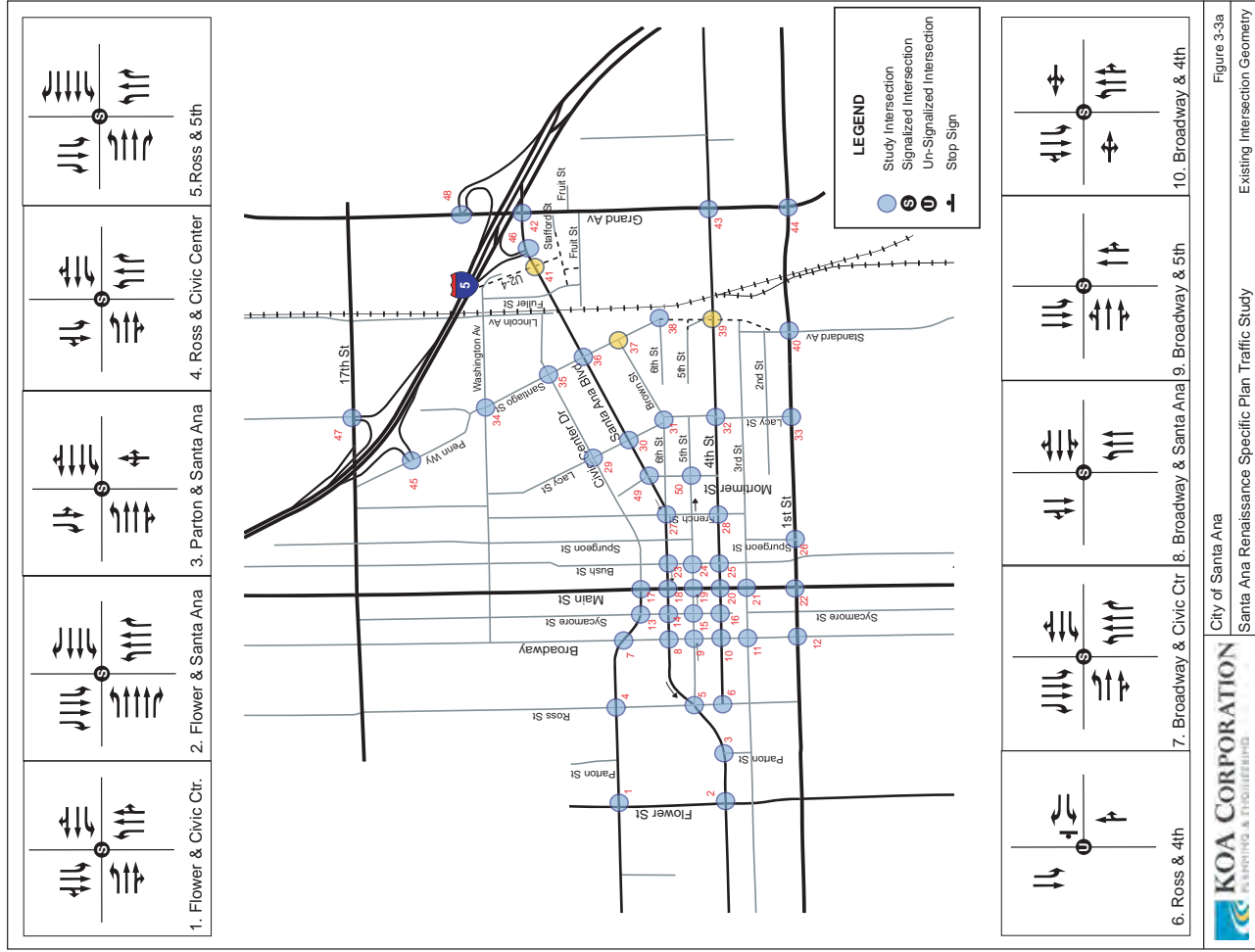
Grand Avenue

Grand Avenue is generally a four-lane divided north-south road classified as a Major Arterial on the Circulation Element. Parking is prohibited along Grand Avenue. The posted speed limit is 40 mph.

I-5 Freeway

Interstate 5 (Santa Ana Freeway) provides primary north-south regional access to this project. Interstate 5 interchanges that provide access to the site are at 17th Street and Santa Ana Boulevard. I-5 has an exclusive elevated High Occupancy Vehicle (HOV) facility for carpools and transit with access ramps at Main Street/Edgewood Road north of the site and at Grand Avenue/Santa Ana Boulevard east of the site.

Figures 3-3a through Figure 3-3d depict the existing intersection lane configurations, and intersection traffic control devices at the study area intersections being analyzed. Figure 3-4a through Figure 3-4j show the existing AM and PM peak hour intersection turning movement volumes respectively for all existing intersections.



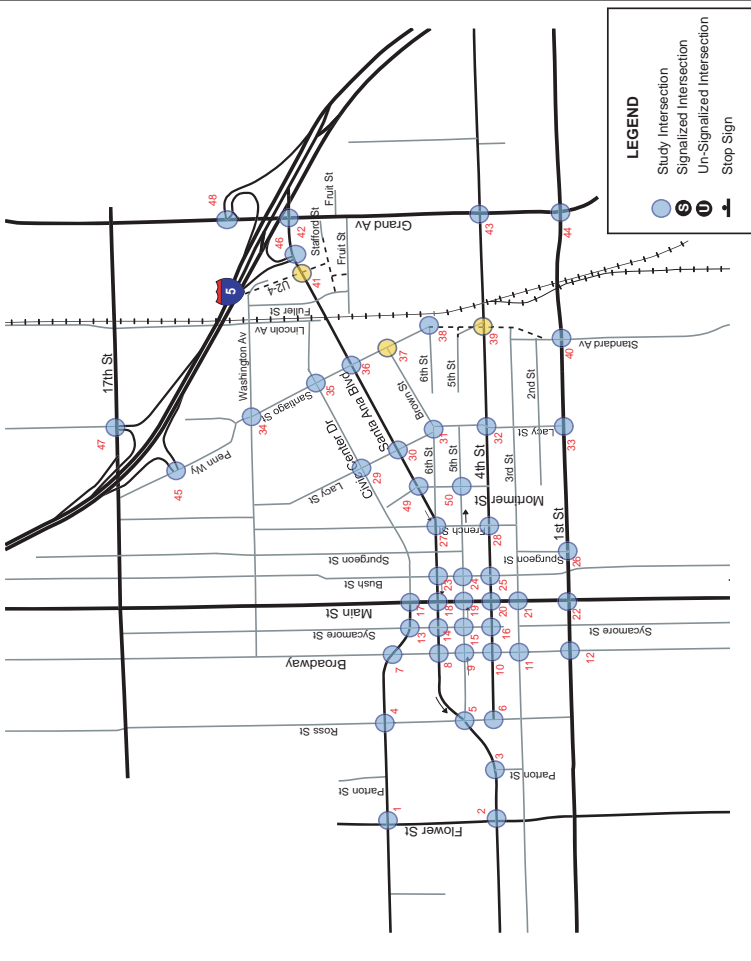
City of Santa Ana

Santa Ana Renaissance Specific Plan Traffic Study

Figure 3-3a

Existing Intersection Geometry

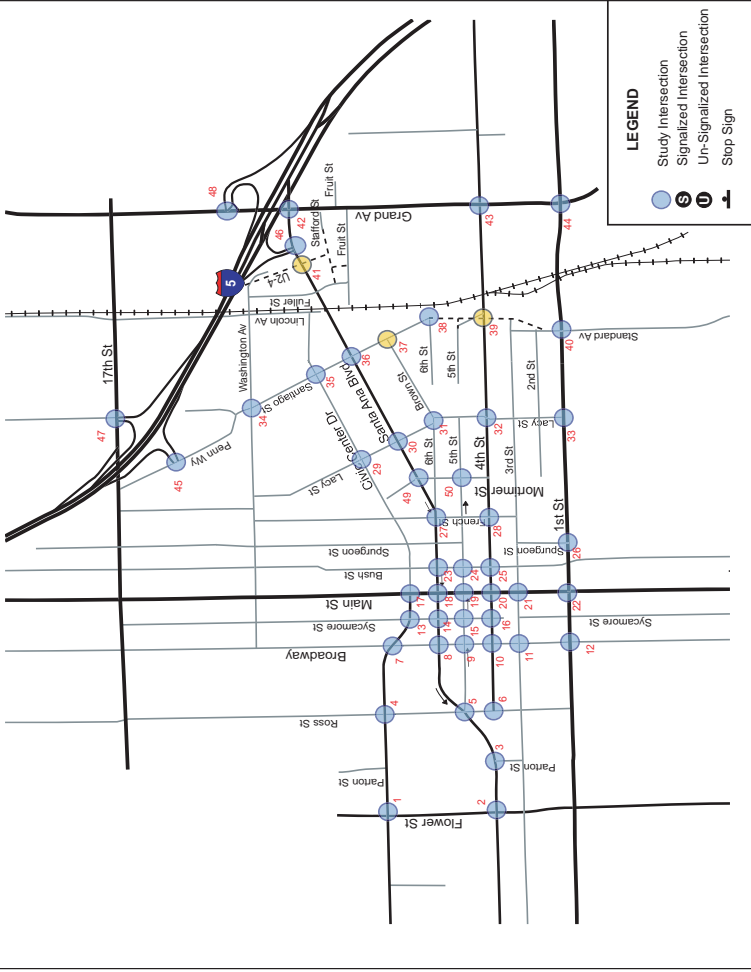
11. Broadway & 3rd	12. Broadway & 1st	13. Sycamore & Civic Center	14. Sycamore & Santa Ana	15. Sycamore & 5th



16. Sycamore & 4th	17. Main & Civic Center	18. Main & Santa Ana	19. Main & 5th	20. Main & 4th

Figure 3.3b
Existing Intersection Geometry

21. Main & 3rd	22. Main & 1st	23. Bush & Santa Ana	24. Bush & 5th	25. Bush & 4th

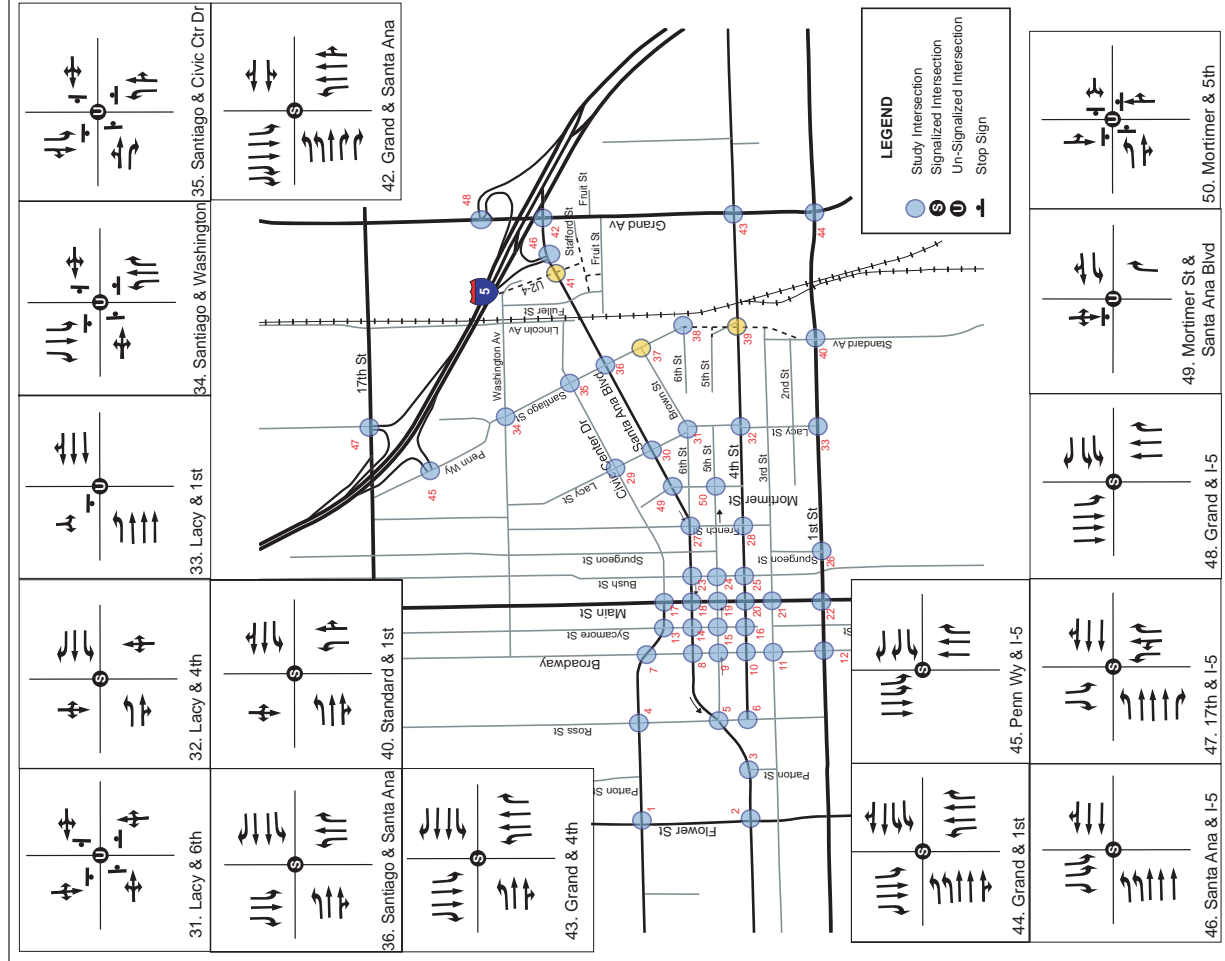


26. Spurgeon & 1st	27. French & Santa Ana	28. French & 4th	29. Lacy & Civic Center	30. Lacy & Santa Ana

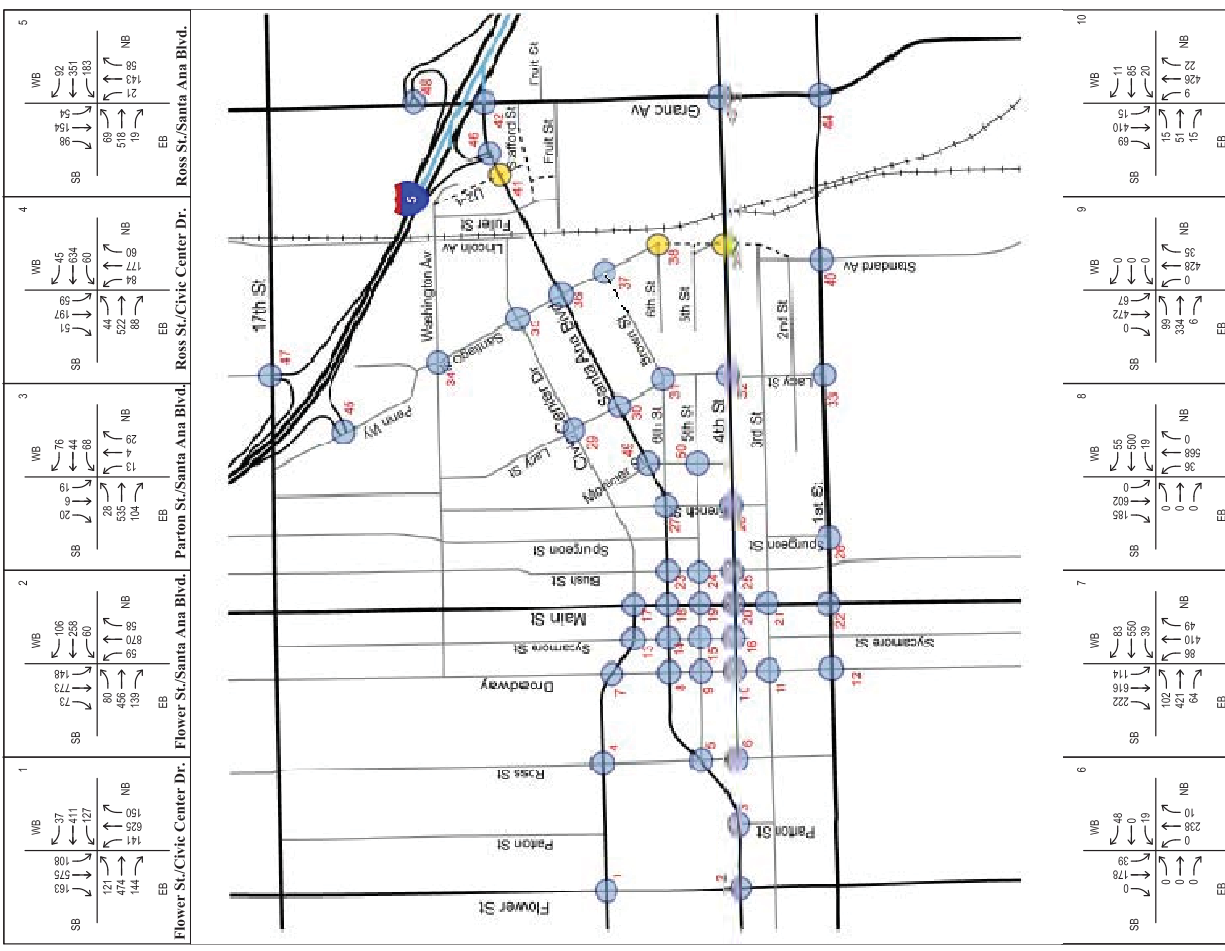
Figure 3.3c
Existing Intersection Geometry

LEGEND

- Study Intersection
- Signalized Intersection
- Un-Signalized Intersection
- Stop Sign

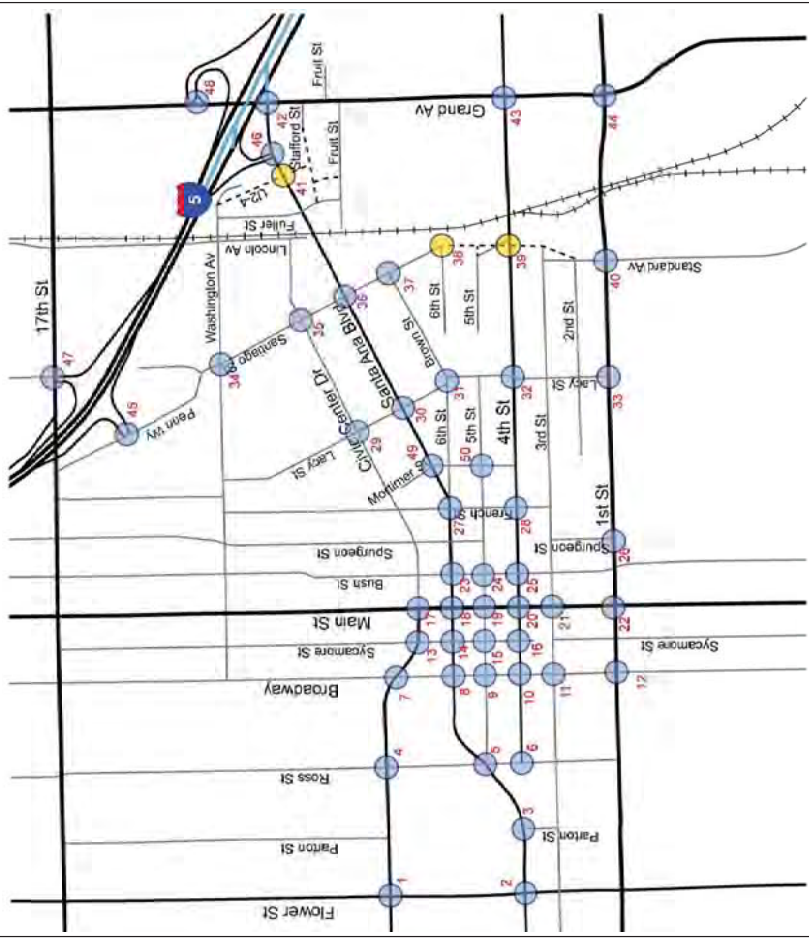


City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study
 Existing Intersection Geometry
 Figure 3-3d



City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study
 Existing AM Peak Hour Volumes
 Figure 3-4a

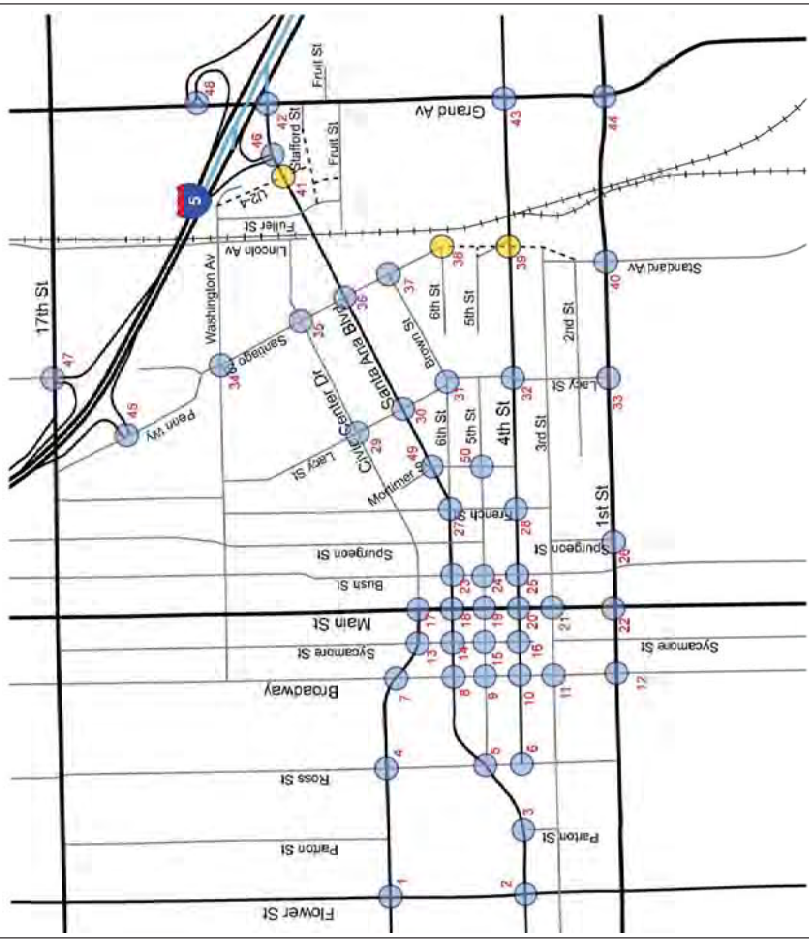
11									
Broadway/3rd St.		Broadway/1st St.		Sycamore St./Civic Center Dr.		Sycamore St./Santa Ana Blvd.		Sycamore St./5th St.	



16							
Sycamore St./4th St.		Main St./Civic Center Dr.		Main St./Santa Ana Blvd.		Main St./4th St.	

City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study
 Edging AM Peak Hour Volumes
 Figure 3-4b

21									
Main St./3rd St.		Main St./1st St.		Bush St./Santa Ana Blvd.		Bush St./5th St.		Bush St./4th St.	

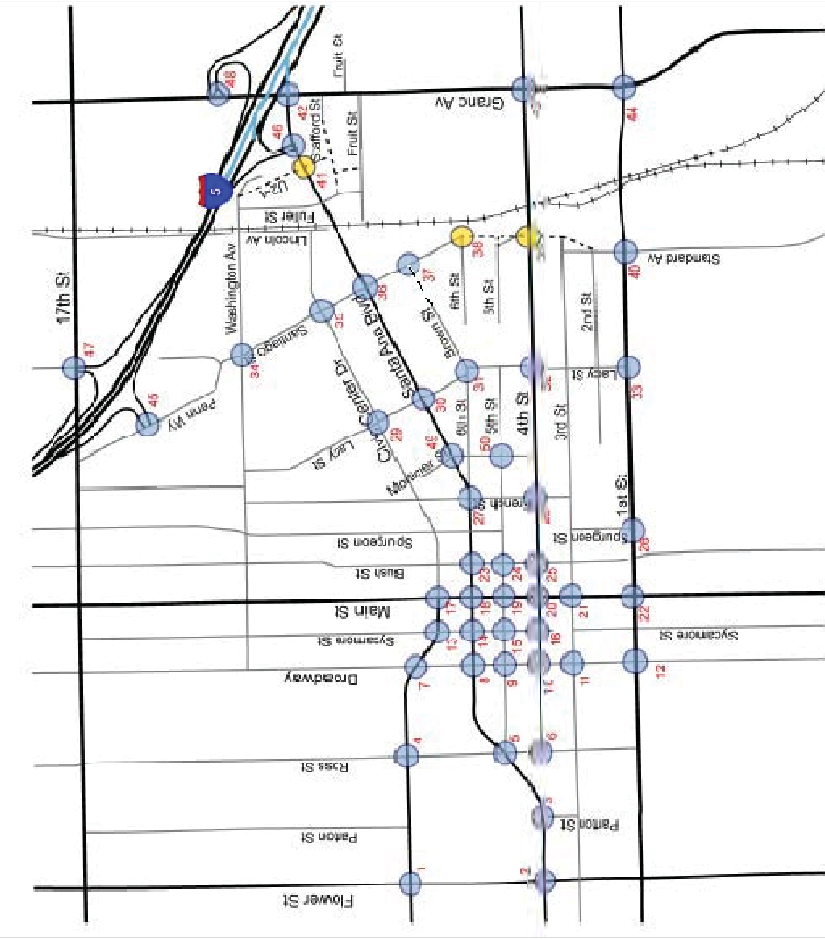


26									
Spurgeon St./1st St.		French St./Santa Ana Blvd.		French St./4th St.		Lacy St./Civic Center Dr.		Lacy St./Santa Ana Blvd.	

City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study
 Edging AM Peak Hour Volumes
 Figure 3-4c

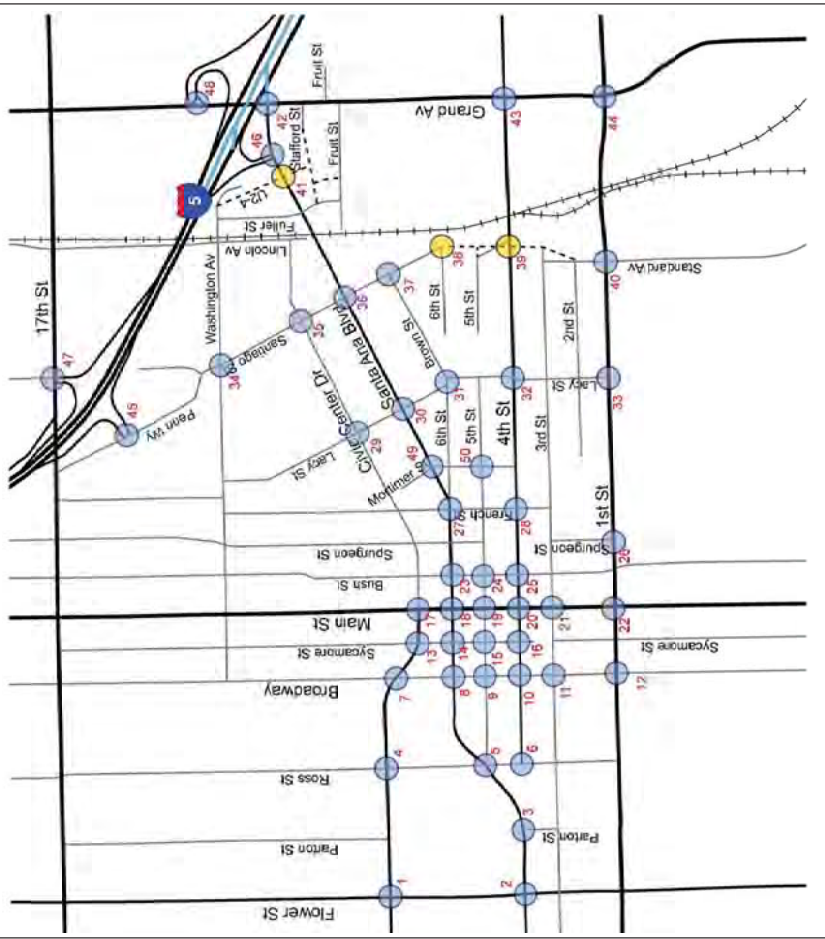


1		2		3		4		5	
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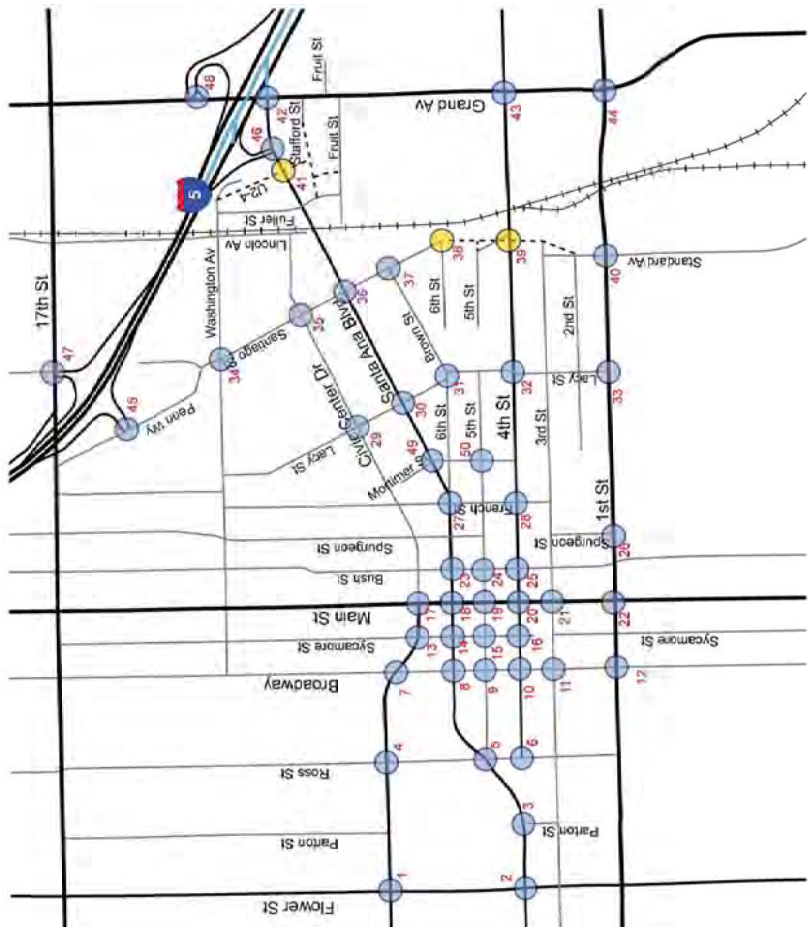
6		7		8		9		10	
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11		12		13		14		15	
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16		17		18		19		20	
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21	WB 36 0 1080	SB 42 148 39	NB 1080 97 39	EB	Main St./3rd St.
22	WB 70 122 1039	SB 196 944 86	NB 1039 113 98	EB	Main St./1st St.
23	WB 57 26 0	SB 0 0 0	NB 682 0 0	EB	Bush St./Santa Ana Blvd.
24	WB 0 0 0	SB 42 564 48	NB 86 282 48	EB	Bush St./5th St.
25	WB 38 80 165	SB 12 129 25	NB 882 74 17	EB	Bush St./4th St.

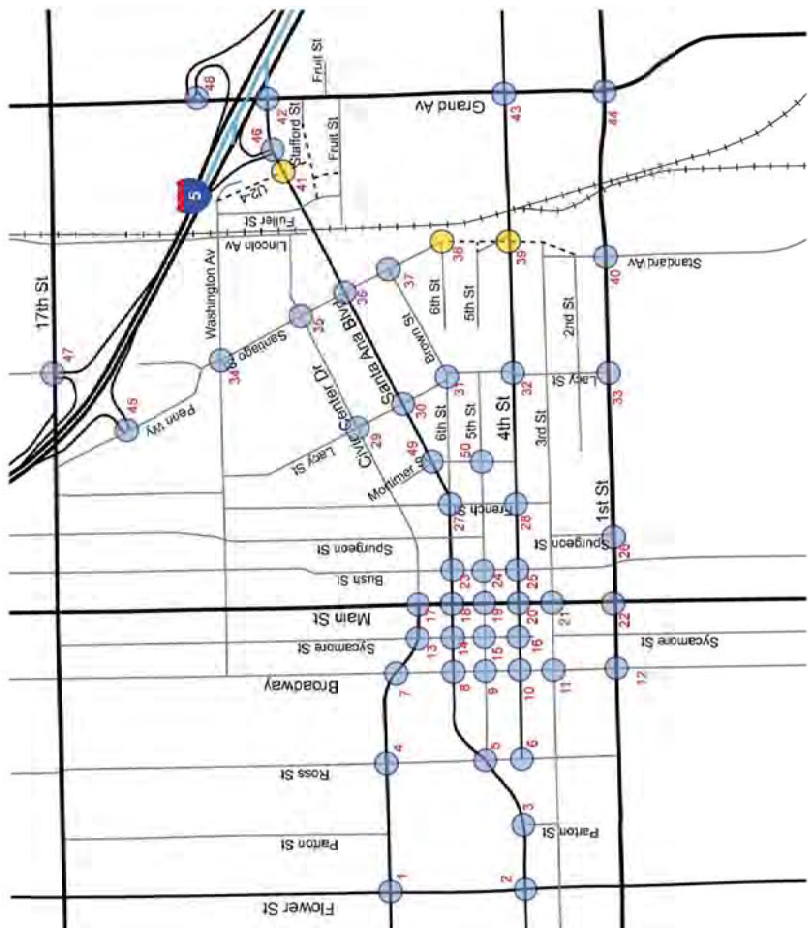


26	WB 38 0 1281	SB 0 0 0	NB 1319 0 0	EB	Spurgeon St./1st St.
27	WB 6 566 21	SB 0 0 0	NB 583 31 0	EB	French St./Santa Ana Blvd.
28	WB 61 12 218	SB 13 108 31	NB 91 38 7	EB	French St./4th St.
29	WB 15 72 189	SB 13 538 16	NB 82 17 85	EB	Lacy St./Civic Center Dr.
30	WB 18 0 592	SB 3 579 5	NB 28 32 2	EB	Lacy St./Santa Ana Blvd.

City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study
 Edsling PM Peak Hour Volumes
 Figure 3-4h



31	WB 0 0 27	SB 7 15 9	NB 1080 97 39	EB	Lacy St./6th St.
32	WB 98 15 484	SB 5 347 23	NB 727 23 19	EB	Lacy St./4th St.
33	WB 36 0 1191	SB 167 1152 14	NB 0 0 0	EB	Lacy St./1st St.
34	WB 33 0 133	SB 206 173 19	NB 951 182 45	EB	Santiago St./Washington Ave.
35	WB 12 31 812	SB 260 52 318	NB 812 51 29	EB	Santiago St./Civic Center Dr.



36	WB 278 601 109	SB 687 25 48	NB 25 95 2	EB	Santiago St./Santa Ana Blvd.
37	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB	Santiago St./Brown St.
38	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB	Santiago St./6th St.
39	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB	Santiago St./4th St.
40	WB 11 1106 33	SB 78 1076 76	NB 951 51 29	EB	Standard St./1st St.

City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study
 Edsling PM Peak Hour Volumes
 Figure 3-4i



3.2 Planned Improvements

Several funded or planned roadway improvements are included within the study area. The improvements identified below are consistent with the Long Range Improvement Program and the City's circulation element.

Grand Avenue Widening – the City of Santa Ana has proposed to widen the segment of Grand Avenue between Seventeenth Street on the north and First Street on the south, to the General Plan Circulation Element designation of Major Arterial, with six through lanes and enhanced features at intersections, including dedicated right and left turn lanes.

Santiago Street Widening – As part of the Santa Ana Renaissance project, the City of Santa Ana has proposed to widen Santiago Street between Civic Center Drive and 1st Street, to the General Plan Circulation Element designation of secondary Arterial, with four through lanes and enhanced features at intersections, including dedicated right and left turn lanes.

Metrolink Extension – the City of Santa Ana has proposed preferred corridors for consideration in developing a local transit service to operate as an extension to the proposed Metrolink Commuter Rail enhancements outlined by the OCTA 2006 Long-Range Transportation Plan.

Santa Ana Fixed Guideway – the City of Santa Ana, in partnership with the city of Garden Grove, is proposing a fixed-guideway system that will travel between the Santa Ana Regional Transportation Center (SARTC) and Bristol Street, with potential future extensions to Harbor Boulevard in Garden Grove. The system will travel along a major east-west corridor through central Orange County, providing access to Santa Ana's downtown area and the Santa Ana civic center, which houses County, State and Federal government offices and courthouses. The proposed fixed-guideway system will integrate into the existing urban environment and transfer riders from the train station directly to key activity centers along the three-mile route.

Santa Ana Regional Transportation Center – the Santa Ana Regional Transportation Center (SARTC) serves more than 200,000 rail passenger trips each year, making the train station one of the busiest along the Los Angeles to San Diego rail line. It's also a hub for regional, interstate and international bus service. Significant attractions in Santa Ana include Bowers Museum, Discovery Science Center, Santa Ana Zoo, and Main Place and South Coast Village shopping districts. Both Santa Ana College, which serves more than 48,000 students, and the Orange County High School for the Arts, which draws students from 92 cities in Southern California, are within walking distance of the proposed fixed-guideway system.

The Santa Ana Regional Transportation Center (SARTC) Master Plan envisions a range of transportation services to be provided at SARTC, including the following travel modes:

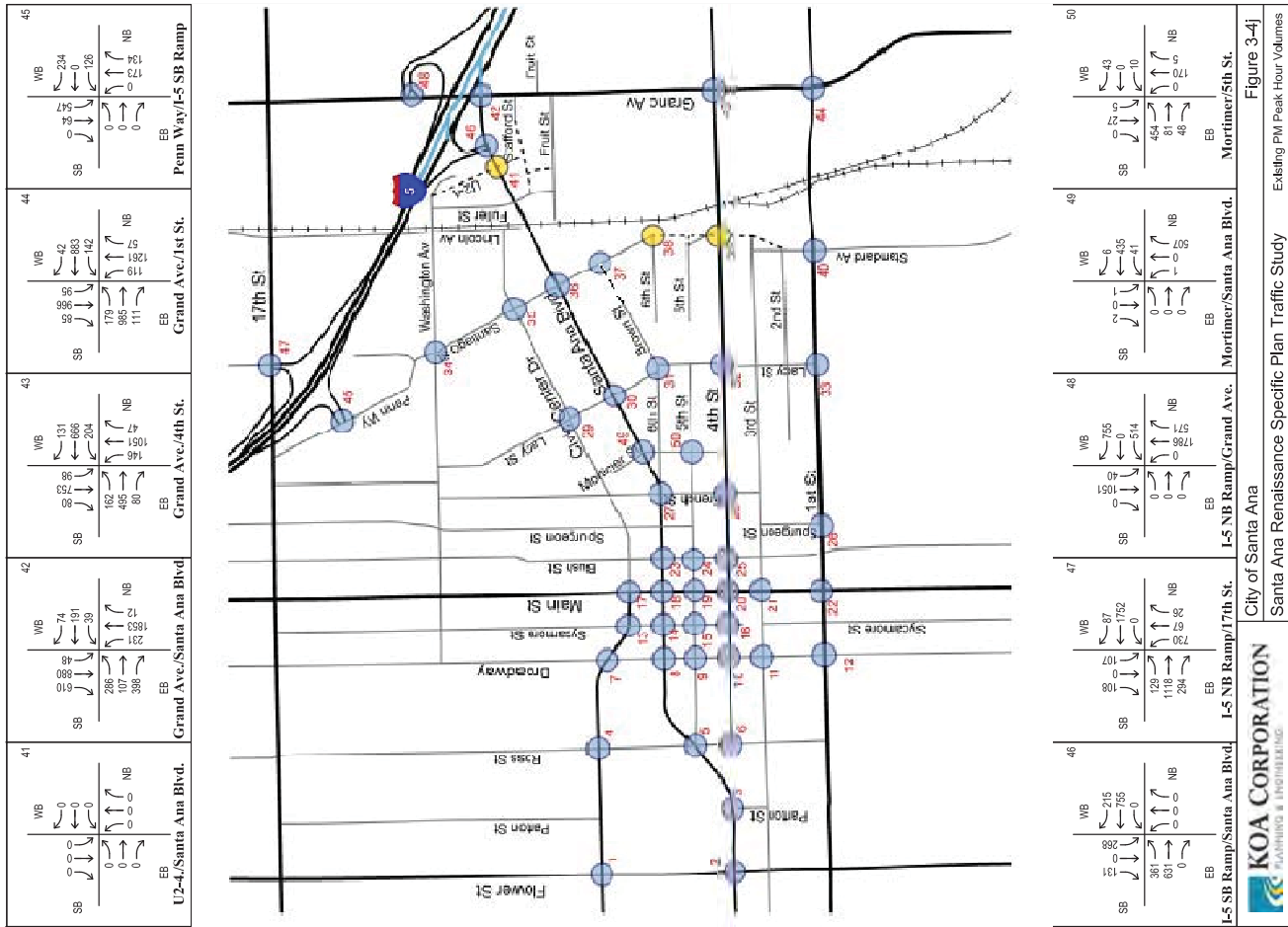


Figure 3-4j
Existing PM Peak Hour Volumes

- Metrolink Rail
- Amtrak Rail
- Santa Ana Fixed Guideway
- OCTA Fixed-Route Bus
- OCTA Stationlink
- OCTA Bus Rapid Transit (BRT)
- High Speed Rail
- Greyhound Bus
- International Tour Bus
- Los Angeles World Airports FlyAway Bus
- Carpool

The SARTC Master Plan is also intended to provide improved pedestrian and bicycle access, commercial, retail and/or residential uses as feasible, and provide efficient parking and support facilities for each of these services.

Completion of the SARTC Master Plan is expected to occur in phases which are anticipated to be completed in three planning horizons: 2014, 2020, and 2040 (buildout).

3.3 Existing Intersection Conditions

Based on the existing traffic volumes, level of service analyses were conducted for the 50 study intersections. The results of these analyses are summarized in Table 3-1 using ICU methodology for signalized intersections and in Table 3-2 using the HCM methodology for unsignalized intersections and Caltrans' signalized intersections. The analysis worksheets for all intersections are included in Appendix B of this report. As shown, all of the 50 intersections operate at Level of Service D or better under the existing conditions scenario.

A preliminary signal warrant study was conducted for unsignalized intersections. The following two intersections currently have 4-way stop control but may warrant a traffic signal under existing conditions. The signal warrant worksheets are included in Appendix C of this report.

- Santiago Street at Washington Avenue
- Santiago Street at Civic Center Drive

**Table 3-1
Existing Peak Hour Intersection Conditions
(ICU Method)**

Intersection	AM Peak Hour		PM Peak Hour	
	ICU	Level of Service	ICU	Level of Service
Signalized Intersections (Using ICU Method)				
Flower St. at Civic Center Dr.	0.617	B	0.662	B
Flower St. at Santa Ana Blvd.	0.524	A	0.538	A
Parton St. at Santa Ana Blvd.	0.256	A	0.436	A
Ross St. at Civic Center Dr.	0.476	A	0.436	A
Ross St. at Santa Ana Blvd.	0.435	A	0.363	A
Broadway at Civic Center Dr.	0.535	A	0.559	A
Broadway at Santa Ana Blvd.	0.417	A	0.466	A
Broadway at 5th St.	0.314	A	0.416	A
Broadway at 4th St.	0.274	A	0.372	A
Broadway at 3rd St.	0.299	A	0.558	A
Broadway at 1st St.	0.568	A	0.648	B
Sycamore St. at Civic Center Dr.	0.383	A	0.434	A
Main St. at Civic Center Dr.	0.680	B	0.663	B
Main St. at Santa Ana Blvd.	0.586	A	0.611	B
Main St. at 5th St.	0.438	A	0.564	A
Main St. at 4th St.	0.441	A	0.561	A
Main St. at 3rd St.	0.423	A	0.535	A
Main St. at 1st St.	0.693	B	0.765	C
Bush St. at Santa Ana Blvd.	0.263	A	0.365	A
Bush St. at 5th St.	0.216	A	0.395	A
Bush St. at 4th St.	0.228	A	0.394	A
French St. at 4th St.	0.248	A	0.393	A
Lacy St. at 4th St.	0.353	A	0.486	A
Santiago St. at Santa Ana Blvd.	0.481	A	0.579	A
Standard St. at 1st St.	0.723	C	0.719	C
Grand Ave. at Santa Ana Blvd.	0.792	C	0.888	D
Grand Ave. at 4th St.	0.601	B	0.717	C
Grand Ave. at 1st St.	0.764	C	0.808	D

**Table 3-2
Existing Peak Hour Intersection Conditions
(HCM Method)**

Intersection	AM Peak Hour		PM Peak Hour	
	Average/Worst Case Delay	Level of Service	Average/Worst Case Delay	Level of Service
Unsignalized Intersections				
Ross St. at 4th St.	10.7	A	11.8	B
Sycamore St. at Santa Ana Blvd.	18.3	C	17.0	C
Sycamore St. at 5th St.	14.3	B	12.8	B
Sycamore St. at 4th St.	7.5	A	8.3	A
Spurgeon St. at 1st St.	10.0	A	12.8	B
French St. at Santa Ana Blvd.	17.1	C	15.6	C
Lacy St. at Civic Center Dr.	15.8	C	16.8	C
Lacy St. at Santa Ana Blvd.	25.3	D	33.4	D
Lacy St. at 6th St.	7.1	A	7.7	A
Lacy St. at 1st St.	16.6	C	23.2	C
Santiago St. at Washington Ave.	12.7	B	18.1	C
Santiago St. at Civic Center Dr.	14.5	B	17.4	C
Mortimer St. at 5th St.	8.7	A	15.5	C
Mortimer St. at Santa Ana Blvd.	17.5	C	15.0	B
Signalized Intersections (Caltrans, Using HCM)				
Penn Way at I-5 SB	18.6	B	21.6	C
Santa Ana Blvd. at I-5 SB	26.7	C	27.4	C
17th St. at I-5 NB	31.3	C	32.3	C
Grand Ave at I-5 NB	19.8	B	62.3	E

3.4 Existing Roadway Segment Conditions

The existing roadway segment ADT analysis is presented in Table 3-3. As indicated, a majority of the arterial roadways are operating at acceptable levels. The daily V/C ratio screening analysis indicates that the following locations are potentially experiencing capacity deficiencies under existing conditions:

- Main Street from South of 1st Street to Santa Ana Boulevard
- Santa Ana Boulevard West of the I-5 SB Ramps
- Grand Avenue from South of 1st Street to 17th Street

The daily volume-to-capacity ratios provide a screening level analysis of daily traffic flows and potential operational problems within the study area. The peak hour analysis for intersections, presented previously, provides a more definitive analysis of the operation of the arterial roadways in the project area. Although a few roadway segments indicate deficiencies, the proposed mitigation should be based on the intersection analysis recommendations.

Table 3-3 Existing Roadway Segment Daily Traffic Condition

Road	Segment	Existing ADT	Number of Lanes	LOS E Capacity	LOS	LOS E OK
Flower Street	Santa Ana Blvd to Civic	17,950	4D	37,500	A	
Flower Street	17th St to Civic Center	17,470	4D	37,500	A	
Civic Center Dr	West of Flower St	17,912	4D	37,500	A	
Civic Center Dr	Flower St to Ross St	16,943	4D	37,500	A	
Flower Street	Santa Ana Blvd to 1st St	18,152	4D	37,500	A	
Santa Ana Blvd	West of Flower St	10,068	4D	37,500	A	
Santa Ana Blvd	Flower St to Parton St	12,363	4D	37,500	A	
Santa Ana Blvd	Parton St to Ross St	12,363	4D	37,500	A	
Civic Center Dr	Ross St to Broadway	15,024	4D	37,500	A	
Santa Ana Blvd	Ross St to Broadway	12,000	3D	28,150	A	
Broadway	Civic Center Dr to Santa Ana Blvd	18,453	4D	37,500	A	
Broadway	Civic Center Dr to Washington Ave	23,755	4D	37,500	B	
Civic Center Dr	Broadway to Sycamore St	14,602	4D	37,500	A	
Broadway	Santa Ana Blvd to 5th St	15,994	4D	37,500	A	
Santa Ana Blvd	Broadway to Sycamore St	10,055	3D	28,150	A	
Broadway	5th St to 4th St	15,755	4D	37,500	A	
5th St	Broadway to Ross St	8,166	3D	28,150	A	
5th St	Broadway to Main St	8,166	3D	28,150	A	
Broadway	3rd St to 4th St	15,755	4U	25,000	B	
Broadway	3rd St to 1st St	15,755	4U	25,000	B	
Broadway	South of 1st St	11,180	4U	25,000	A	
1st St	Broadway to Ross St	38,541	6D	56,300	B	
1st St	Main St to Broadway	37,162	6D	56,300	B	
Civic Center Dr	Sycamore St to Main St	14,602	4D	37,500	A	
Santa Ana Blvd	Sycamore St to Main St	10,055	3D	28,150	A	
5th St	Sycamore St to Broadway	8,166	3D	28,150	A	
5th St	Sycamore St to Main St	8,166	3D	28,150	A	

Road	Segment	Existing ADT	#of Exist Lanes	LOS E Capacity	LOS	LOS E OK
Main St	Civic Center to Santa Ana	31,571	4D	37,500	E	E ok
Main St	Civic Center to 9th St	32,104	4D	37,500	E	E ok
Civic Center Dr	Main St to Bush St	11,483	4D	37,500	A	
Main St	Santa Ana Blvd to 5th St	31,571	4D	37,500	F	
Santa Ana Blvd	Main St to Bush St	10,094	4U	28,150	A	
Main St	5th St to 4th St	31,571	4U	25,000	F	
5th St	Main St to Bush St	5,881	3D	28,150	A	
Main St	3rd St to 4th St	27,791	4U	25,000	F	
Main St	1st St to 3rd St	27,791	4U	25,000	F	
Santa Ana Blvd	Bush St to Spurgeon St	10,094	3D	28,150	A	
5th St	Bush St to French St	5,881	2U	12,500	A	
1st St	Spurgeon St to Main St	37,667	6D	56,300	B	
Santa Ana Blvd	Lacy St to Standard Ave	14,350	4D	37,500	A	
Civic Center Dr	French St to Lacy St	11,483	4D	37,500	A	
Santa Ana Blvd	Lacy St to French St	14,350	2D	18,750	C	
4th St	Lacy St to French St	11,974	2D	18,750	B	
1st St	Lacy St to Spurgeon St	37,667	6D	56,300	B	
1st St	Lacy St to Standard Ave	37,667	6D	56,300	B	
Santiago St	Washington Ave to Civic	9,931	2U	12,500	C	
Santiago St	Washington Ave to 17th St	9,527	2U	12,500	C	
Santiago St	Santa Ana Blvd. to Civic	9,044	2U	12,500	C	
Civic Center Dr	Santiago St. to Lacy St	11,910	2U	12,500	E	E ok
Civic Center Dr	Lincn Ave to Santiago St	11,483	2U	12,500	E	E ok
Santiago St	Santa Ana Blvd to Brown St	6,751	2U	12,500	A	
Santa Ana Blvd	Santiago St to Lacy St	14,350	4D	37,500	A	
Santa Ana Blvd	Santiago St. to U-24	19,413	6D	56,300	A	
4th St	Santiago St to Lacy St	17,626	4U	25,000	C	
Grand Ave	4th St to Santa Ana Blvd	36,377	4D	37,500	E	
Grand Ave	Santa Ana Blvd to 17th St	31,111	4D	37,500	E	
Santa Ana Blvd	East of Grand Ave	7,660	4D	37,500	A	
Grand Ave	1st St to 4th St	31,391	4D	37,500	E	
4th St	Grand Ave to Santiago St	17,626	4D	37,500	A	
4th St	East of Grand Ave	19,984	4D	37,500	A	
Grand Ave	South of 1st St	39,273	4D	37,500	F	
1st St	Standard Ave to Grand Ave	39,273	6D	56,300	B	
1st St	East of Grand Ave	36,393	6D	56,300	B	

Road	Segment	Existing ADT	#of Exist Lanes	LOS E Capacity	LOS	LOS E OK
Penn Way	South of I-5 SB Ramps	8,000	2U	12,500	B	
Penn Way	North of I-5 SB Ramps	14,000	4D	37,500	A	
Santa Ana Blvd	West of I-5 SB Ramps	36,200	4D	37,500	E	
Santa Ana Blvd	East of I-5 SB Ramps	23,000	4D	37,500	B	
17th St	West of I-5 NB Ramps	44,504	6D	56,300	C	
17th St	East of I-5 NB Ramps	35,941	6D	56,300	B	
Grand Ave	South of I-5 NB Ramps	45,235	4D	37,500	F	
Grand Ave	North of I-5 NB Ramps	42,211	4D	37,500	F	

3.5 Existing Freeway Ramp Conditions

Existing peak hour ramp analysis results are presented on Table 3-4. All ramps operate at LOS D or better during the AM and/or PM peak hour time periods:

Table 3-4 Existing Freeway Ramp Analysis

INTER-CHANGE	RAMP	RAMP TYPE CODE ¹	LANES	PEAK HOUR CAPACITY		AM PEAK HOUR		PM PEAK HOUR	
				VOL	V/C	VOL	V/C	VOL	V/C
I-5 at 17th St.	SB On	4	2	1,800	0.37	658	0.37	681	0.38
	NB Loop On	4	2	1,800	0.12	217	0.12	294	0.16
	SB Off	5	1	1,500	0.22	330	0.22	360	0.24
I-5 at Santa Ana Blvd.	NB Off	5	1	1,500	0.48	714	0.48	823	0.55
	SB Direct On (HOV)	6	2	2,250	0.10	215	0.10	167	0.07
	SB Loop On	4	2	1,800	0.19	341	0.19	576	0.32
	NB Loop On	4	2	1,800	0.22	394	0.22	611	0.34
	SB Off	5	1	1,500	0.31	470	0.31	399	0.27
	NB Off	5	1	1,500	0.58	876	0.58	1,269	0.85

Note 1: Reference to Freeway Ramp Capacity Assumptions Table

4 - Two-lane Metered On-Ramp, 2 Mixed Flow Lanes at Meter

5 - One-lane Unmetered Ramp

6 - Two-lane Unmetered On-Ramp, tapers to one merge lane at or beyond gore point

3.6 Transit System

The study area is currently served by buses and commuter rail service. The commuter rail service is provided at the Santa Ana Regional Transportation Center (SARTC), which is located within the study area. Transit service for the study area is generally provided by local bus service with the exception of the SARTC, where commuter rail service and express bus service connections are provided to the local bus system.

4. ANTICIPATED PROJECT BUILDOUT (2030) WITHOUT PROJECT CONDITIONS

This section documents the future (2030) traffic conditions without the addition of project-related traffic to the surrounding street system. To forecast the near-term growth conditions for the year 2030, the existing peak hour background traffic volumes were increased by a factor of 0.5% per year. Also considered are future traffic increases that may be generated by other developments that have been approved in the study area.

4.1 Cumulative Projects

KOA Corporation has collected the active project lists from the City of Santa Ana, the City of Tustin, and the City of Orange in order to identify the relevant projects near the Santa Ana Renaissance Specific Plan area. Per discussion with the project team, all cumulative projects within a 1.5 mile radius from the project boundary are considered as relevant to this project. As illustrated on Figure 4-1, a total of 21 projects are included as cumulative projects. The recently added project #44 (11 units of live/work) is not included in the cumulative project trip generation calculation as it provides minimum trip growth (about 6 peak hour trips and should be covered by the 0.5% annual ambient growth incorporated in the future volume forecasts. The added cumulative project #45 (30 units development) was included in both 2030 and 2035 conditions analysis.

Table 4-1 lists the cumulative projects within a 1.5 mile radius. The trip generation and trip distribution for all cumulative projects are included in Appendix D. The assumptions for the trip generation and trip distribution are primarily based on the traffic study reports provided by the City of Santa Ana. Appendix D also includes the cumulative project only volumes for both AM and PM peak hours which are generated based on the trip generation and trip distribution for the cumulative projects.

Table 4-1 Cumulative Projects List

Project ID	Project Name	Land Use Description	Quantity	Unit
1	One Broadway Plaza	Office	508.2	TSF
		Office (Rehab Structures)	9,803	TSF
		Retail ?	8,525	TSF
		Casual Dining	2,681	TSF
3	Santiago Street Lofts	Formal Dining	15,915	TSF
		Proposed Live-work Loft (Apartment)	108	DU
		Existing Manufacture	2.1	TSF
		Existing out-reach Educational (R&D)	19	TSF

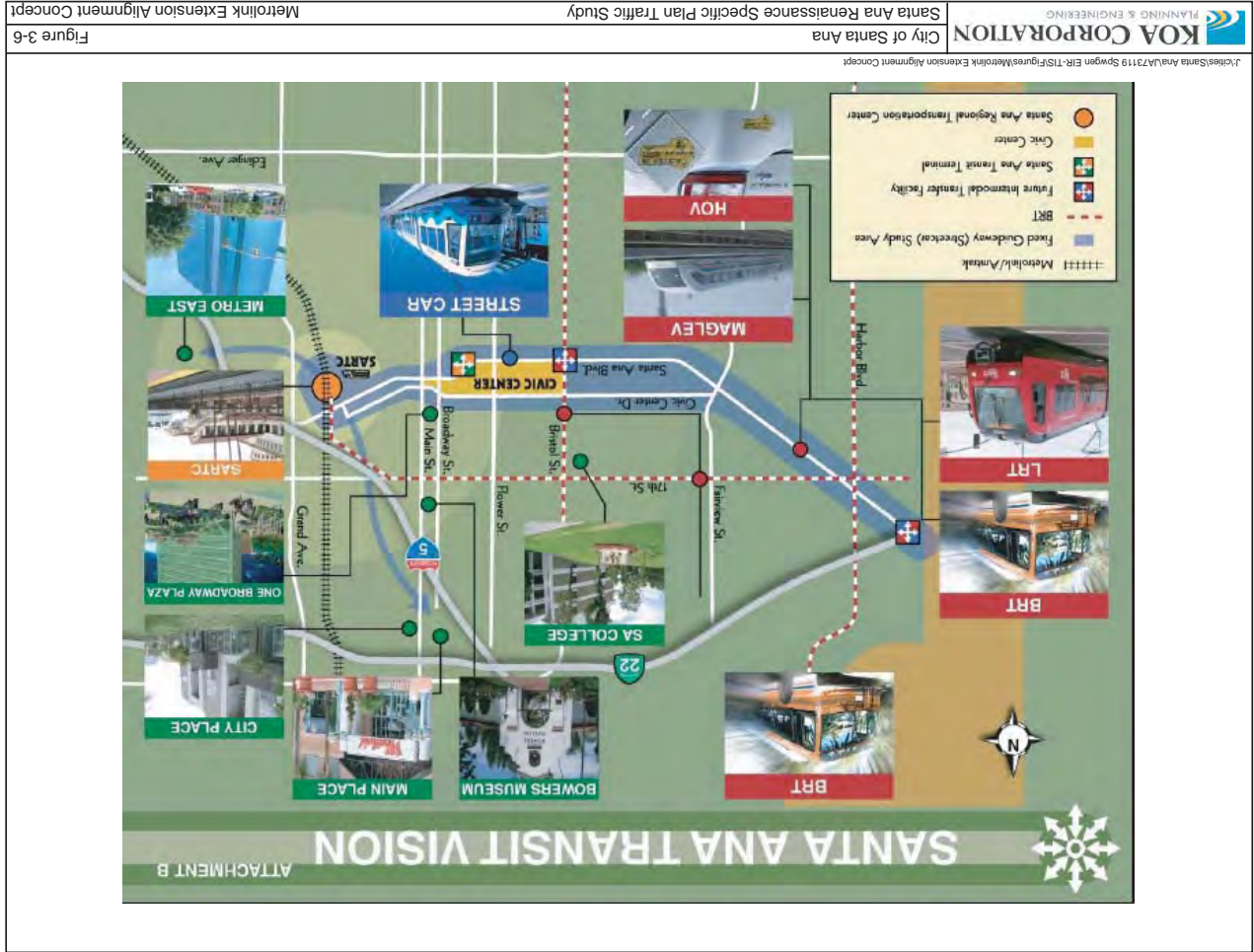


Figure 3-6 MetroLink Extension Alignment Concept

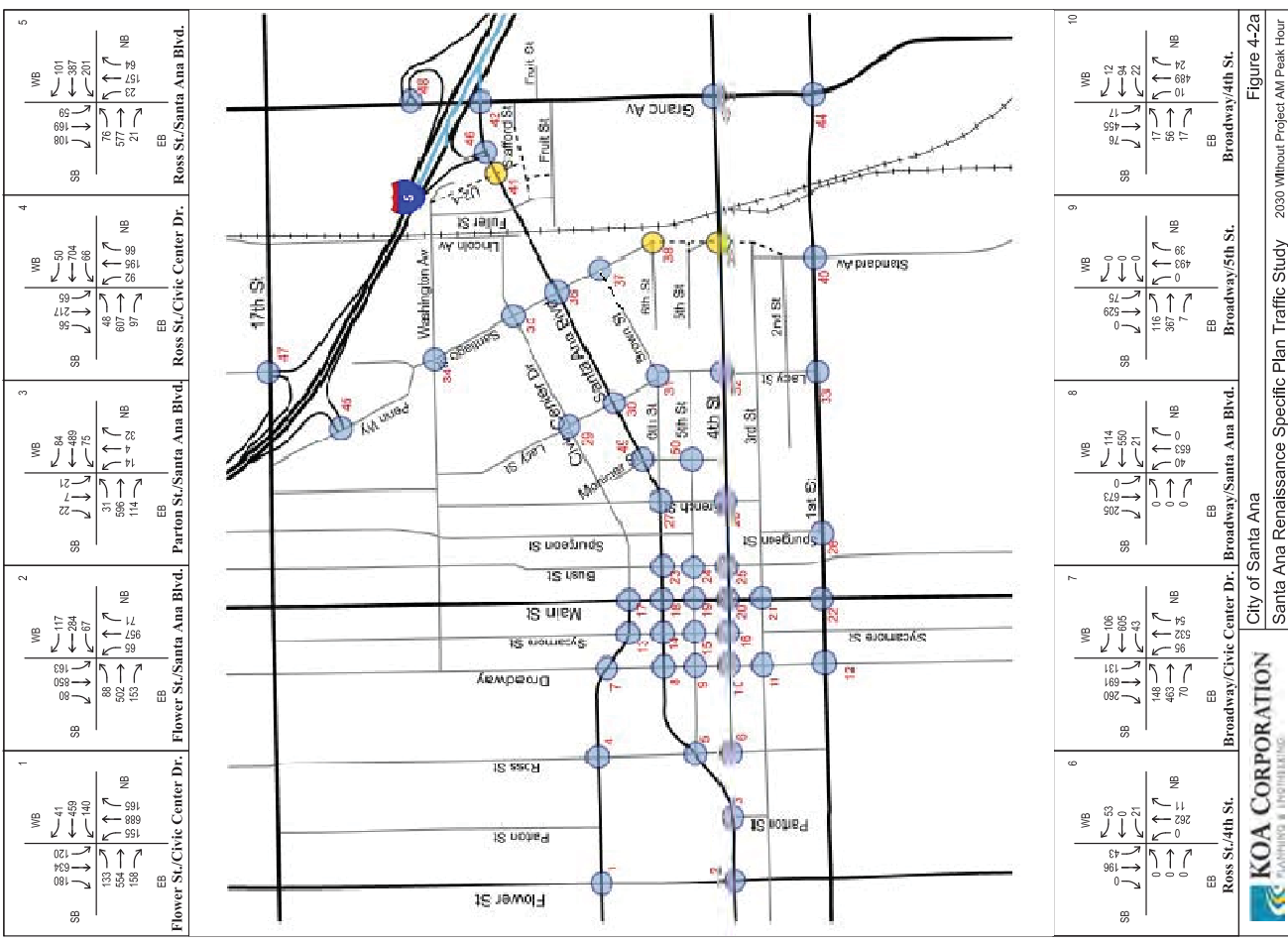
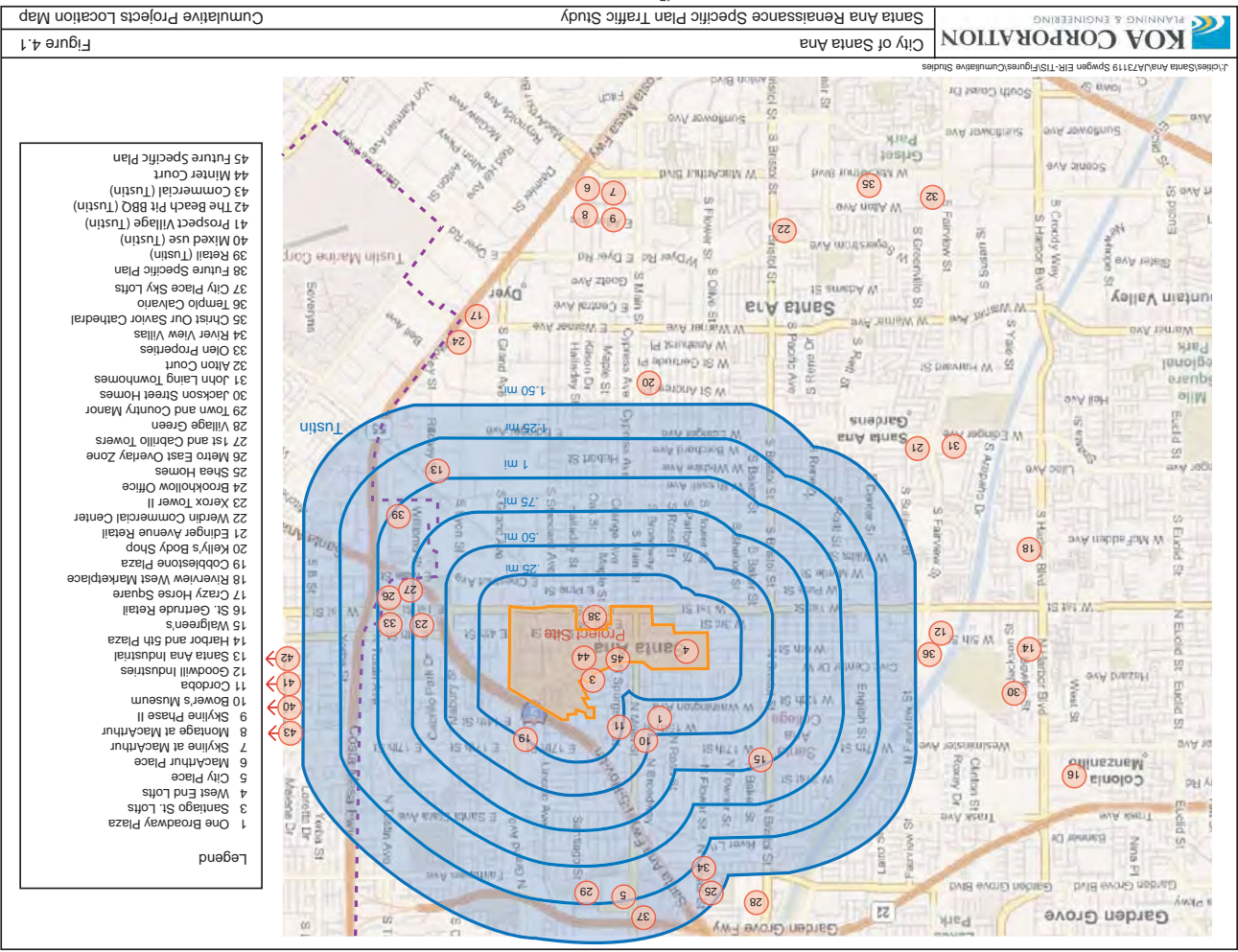
Project ID	Project Name	Land Use Description	Quantity	Unit
4	West End Lofts	Shopping Center	2.67	TSF
10	Bower's Museum	Residential Condo/Townhouse	5	DU
11	Cordoba	Museum Expansion	33.1	TSF
15	Walgreen's	Apartment	45	DU
19	Cobblestone	Proposed Shopping Center	12.4	TSF
23	Xerox Tower II	Shopping Center	11	TSF
27	1st & Cabrillo Towers	General Office Building	210	TSF
26	Metro East Overlay Zone	High Rise Resid. Condo/Townhouse	374	DU
33	Olen Properties	Specialty Retail Center	8.97	TSF
13	Santa Ana Industrial	Health / Fitness Club	-5.5	TSF
29	Town & Country Manor	High Rise Resid. Condo/Townhouse	5,551	DU
5	City Place	Residential Condo/Townhouse	136	DU
34	River View Villas	General Office Building	2.5	TSF
37	City Place Sky Lofts	General Light Industrial	31	TSF
25	Shea Homes	Residential Condo/Townhouse	174	DU
38	Future Specific Plan Area	Residential Condo/Townhouse	185	DU
39	Retail (Tustin)	Shopping Center	60	TSF
44	Minter Court	Residential Condo/Townhouse	41	DU
45	Future Specific Plan	Apartment	41	DU
		Single Family Detached	234	DU
		Multi Family Housing	36	TSF
		Retail	15	TSF
		Replacement of Commercial Building	11	DU
		11-unit live/work and townhouse project	30	DU
		30 units of Residential Development		

SOURCE: City of Santa Ana, City of Tustin, and City of Orange
Project Id is consistent with the index on Figure 4-1.

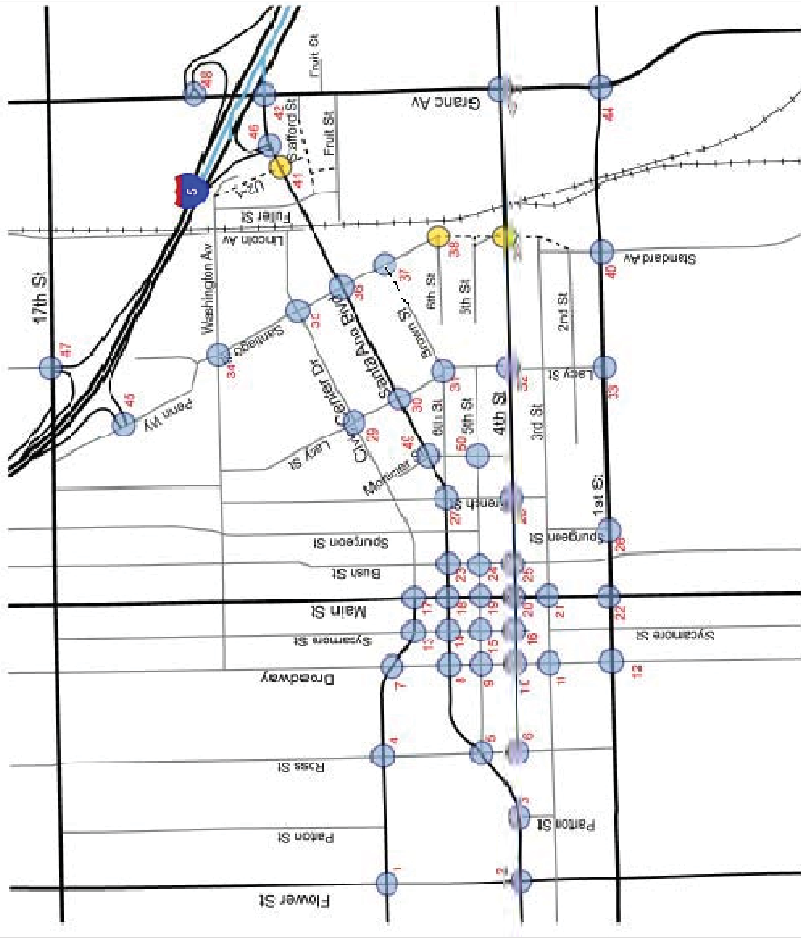
4.2 Anticipated Project Buildout (2030) Without Project Intersection Conditions

As indicated in the previous section, the Anticipated Project Buildout (2030) Without Project Intersection volumes are composed of the existing volumes with 0.5% growth per year plus the cumulative project only volumes. Figures 4-2a through Figure 4-2e illustrate the AM peak hour volumes for the 50 intersections while Figures 4-2f through Figure 4-2j illustrate the PM peak hour volumes for 2030 Without Project conditions. Tables 4-2 and 4-3 illustrate the future without project intersection level of service conditions. Appendix E includes the analysis worksheets for all intersections under 2030 Without Project conditions. As shown in the table, all intersections are expected to operate at Level of Service D or better under the future without project condition for the year 2030 except the following:

- Grand Avenue at Santa Ana Boulevard (Signalized)
- Lacy Street at Santa Ana Boulevard (Two-way stop control)
- Lacy Street at 1st Street (Two-way stop control)

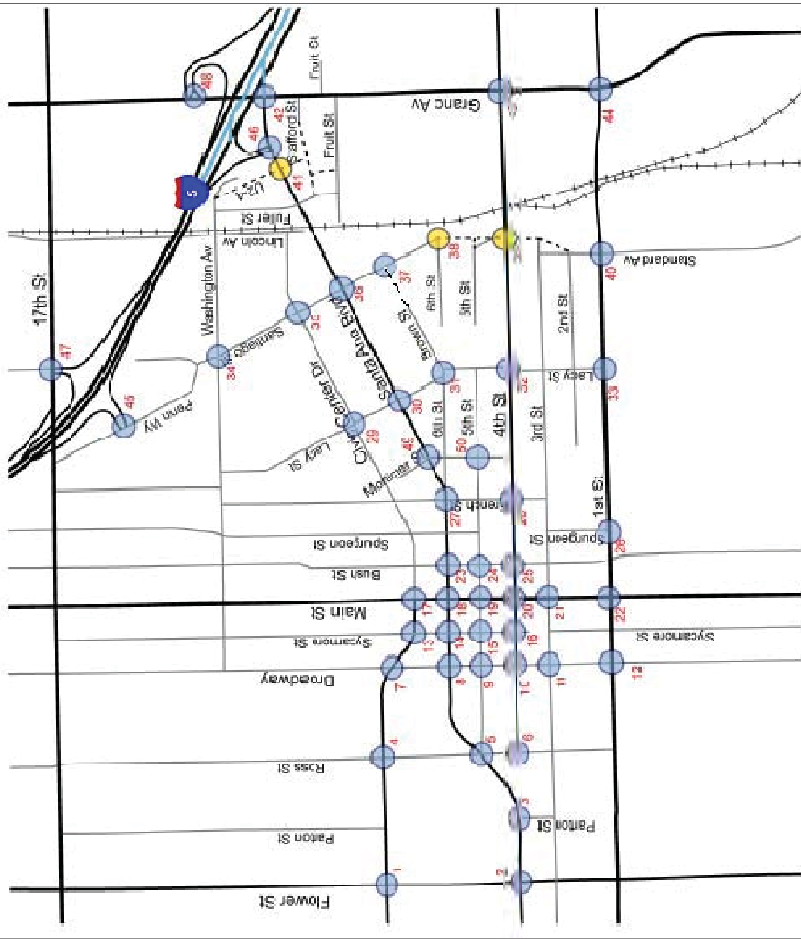


11	12	13	14	15
Broadway/3rd St.		Broadway/1st St.		Sycamore St./Civic Center Dr.
Broadway/3rd St.		Broadway/1st St.		Sycamore St./Santa Ana Blvd.
Broadway/3rd St.		Broadway/1st St.		Sycamore St./5th St.



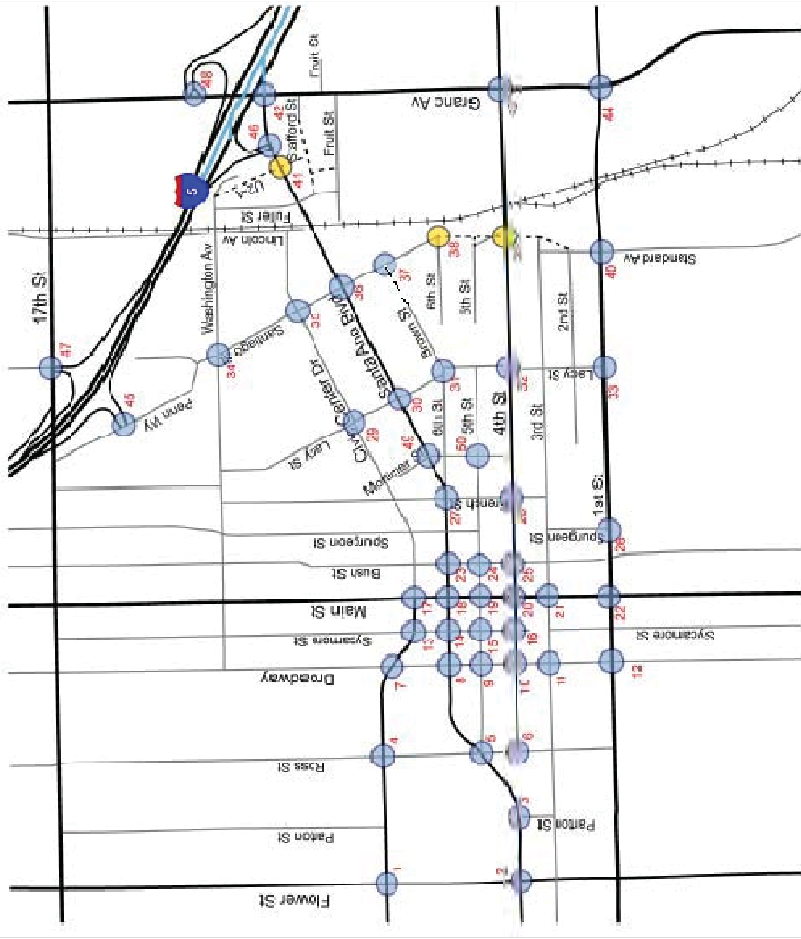
16	17	18	19	20
Sycamore St./4th St.		Main St./Civic Center Dr.		Main St./Santa Ana Blvd.
Sycamore St./4th St.		Main St./Civic Center Dr.		Main St./5th St.
Sycamore St./4th St.		Main St./Santa Ana Blvd.		Main St./4th St.

21	22	23	24	25
Main St./3rd St.		Main St./1st St.		Bush St./4th St.
Main St./3rd St.		Main St./1st St.		Bush St./5th St.
Main St./3rd St.		Main St./1st St.		Bush St./4th St.



26	27	28	29	30
Spurgeon St./1st St.		French St./Santa Ana Blvd.		Lacy St./Civic Center Dr.
Spurgeon St./1st St.		French St./Santa Ana Blvd.		Lacy St./Civic Center Dr.
Spurgeon St./1st St.		French St./4th St.		Lacy St./Santa Ana Blvd.

31	WB 4 17 7 14	SB 2 7 8	NB 22 17 8	EB Lacy St./6th St.
32	WB 7 446 11	SB 10 302 24	NB 11 18 24	EB Lacy St./4th St.
33	WB 24 1005 0	SB 175 150 0	NB 0 0 0	EB Lacy St./1st St.
34	WB 30 220 125	SB 119 108 43	NB 27 52 48	EB Santiago St./Washington Ave.
35	WB 9 59 41	SB 129 50 212	NB 24 24 41	EB Santiago St./Civic Center Dr.

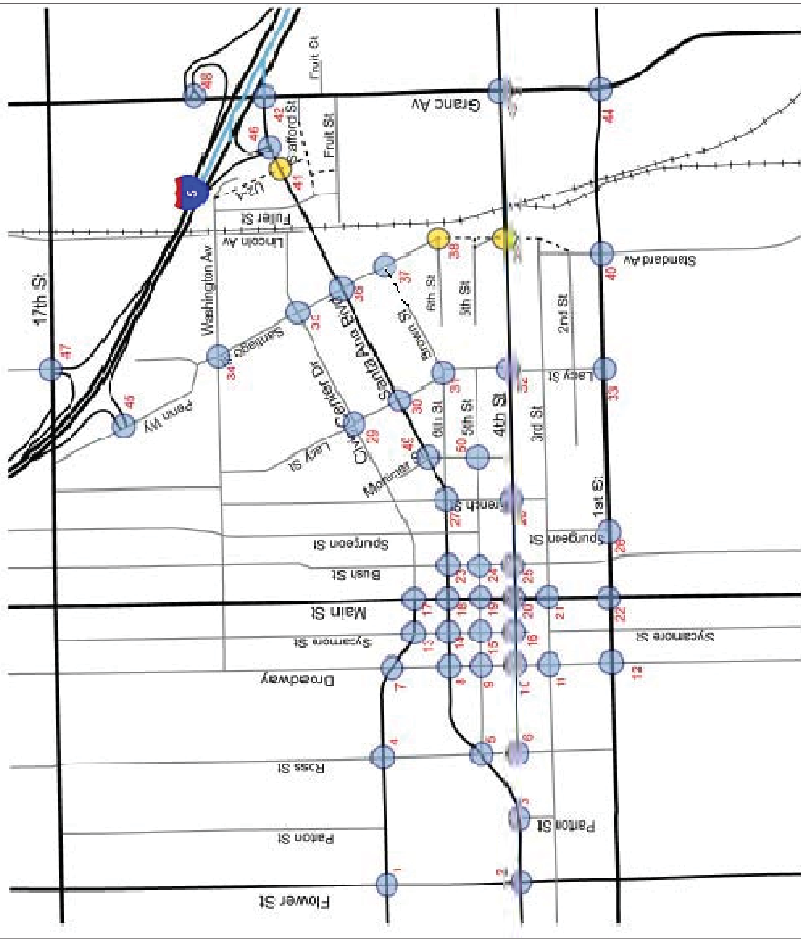


36	WB 307 965 240	SB 33 438 31	NB 22 23 8	EB Santiago St./Santa Ana Blvd.
37	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB Santiago St./Brown St.
38	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB Santiago St./6th St.
39	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB Santiago St./4th St.
40	WB 12 1065 69	SB 91 1486 141	NB 21 21 21	EB Standard St./1st St.

City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project AM Peak Hour
 Figure 4-2d



41	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB U2-L/Santa Ana Blvd.
42	WB 15 69 1386	SB 189 152 624	NB 176 882 51	EB Grand Ave./Santa Ana Blvd.
43	WB 105 338 119	SB 109 1073 103	NB 111 862 120	EB Grand Ave./4th St.
44	WB 69 671 326	SB 303 1059 224	NB 120 515 224	EB Grand Ave./1st St.
45	WB 219 0 250	SB 0 0 0	NB 0 0 0	EB Penn Way/I-5 SB Ramp

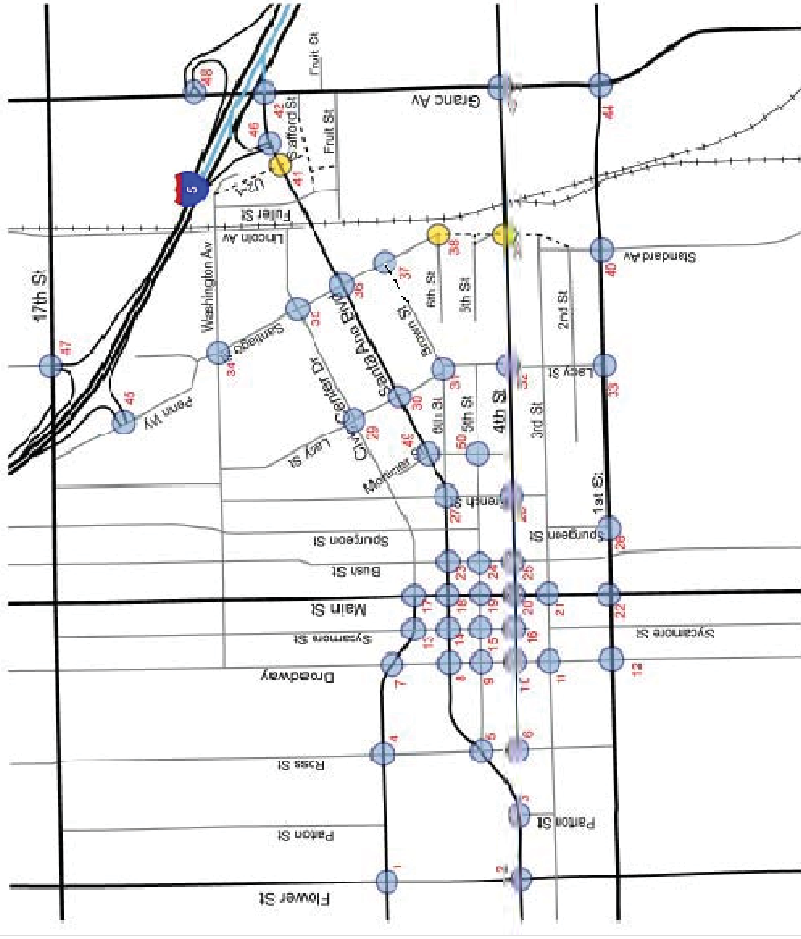


46	WB 68 1015 0	SB 218 431 0	NB 0 0 0	EB I-5 SB Ramp/Santa Ana Blvd.
47	WB 68 1277 57	SB 130 908 235	NB 88 58 88	EB I-5 NB Ramp/17th St.
48	WB 109 34 699	SB 0 0 0	NB 804 791 0	EB I-5 NB Ramp/Grand Ave.
49	WB 3 846 31	SB 0 0 0	NB 251 0 0	EB Mortimer St./Santa Ana Blvd.
50	WB 0 0 0	SB 199 28 37	NB 22 21 0	EB Mortimer St./5th St.

City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project AM Peak Hour
 Figure 4-2e

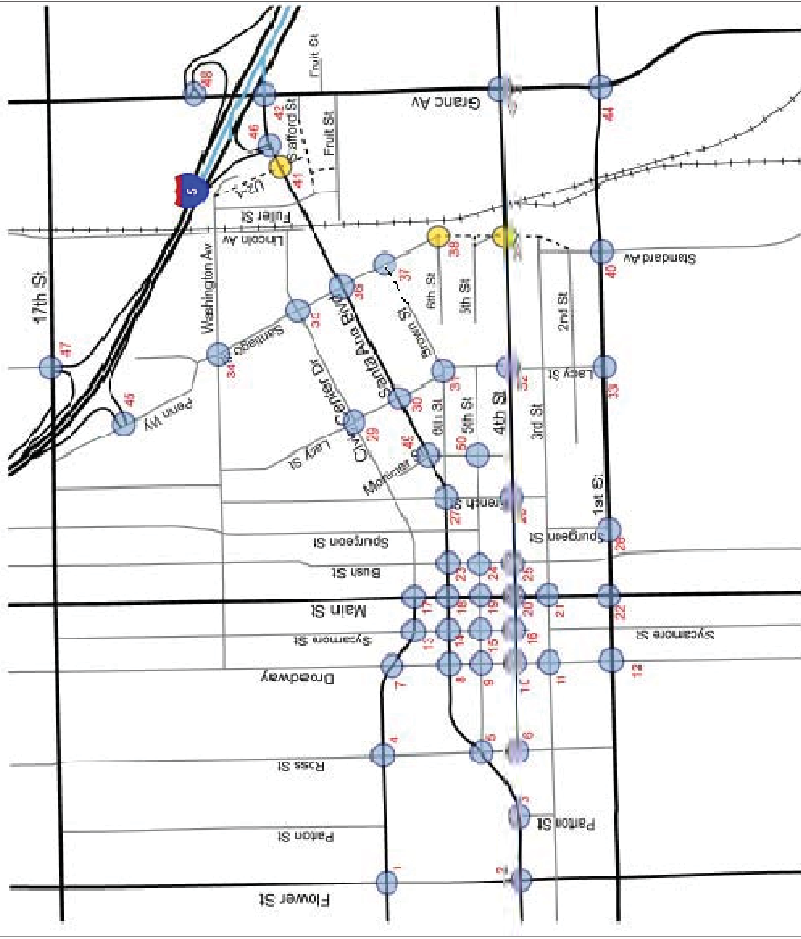


1		<table border="1"> <tr> <td>WB</td> <td>64</td> <td>116</td> <td>735</td> <td>143</td> <td>143</td> <td>143</td> <td>143</td> <td>143</td> <td>143</td> </tr> <tr> <td>SB</td> <td>15</td> <td>15</td> <td>15</td> <td>15</td> <td>15</td> <td>15</td> <td>15</td> <td>15</td> <td>15</td> </tr> <tr> <td>EB</td> <td>221</td> <td>672</td> <td>672</td> <td>88</td> <td>88</td> <td>88</td> <td>88</td> <td>88</td> <td>88</td> </tr> <tr> <td>NB</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> </table>	WB	64	116	735	143	143	143	143	143	143	SB	15	15	15	15	15	15	15	15	15	EB	221	672	672	88	88	88	88	88	88	NB	0	0	0	0	0	0	0	0	0	Flower St./Civic Center Dr.
WB	64	116	735	143	143	143	143	143	143																																		
SB	15	15	15	15	15	15	15	15	15																																		
EB	221	672	672	88	88	88	88	88	88																																		
NB	0	0	0	0	0	0	0	0	0																																		
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WB	198	3	596	800	800	800	800	800	800																																		
SB	3	3	3	3	3	3	3	3	3																																		
EB	108	424	424	103	103	103	103	103	103																																		
NB	0	0	0	0	0	0	0	0	0																																		
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WB	19	32	32	32	32	32	32	32	32																																		
SB	4	4	4	4	4	4	4	4	4																																		
EB	54	54	54	54	54	54	54	54	54																																		
NB	0	0	0	0	0	0	0	0	0																																		
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WB	97	97	605	121	121	121	121	121	121																																		
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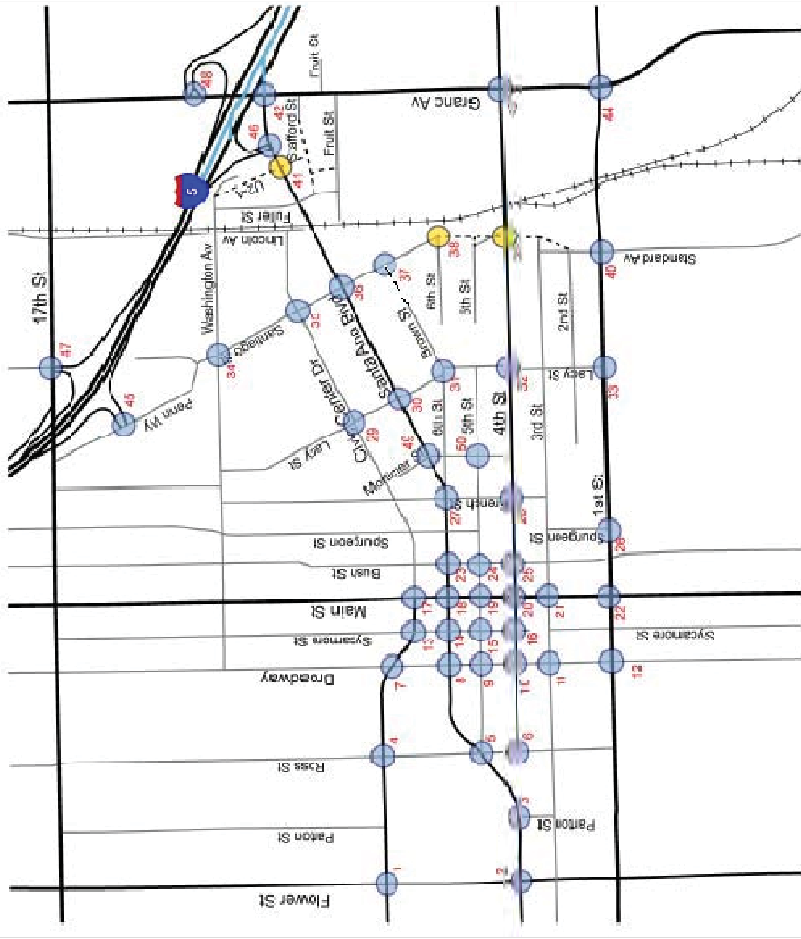
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WB	73	0	0	0	0	0	0	0	0																																		
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WB	110	139	508	716	716	716	716	716	716																																		
SB	7	7	7	7	7	7	7	7	7																																		
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WB	130	88	623	45	45	45	45	45	45																																		
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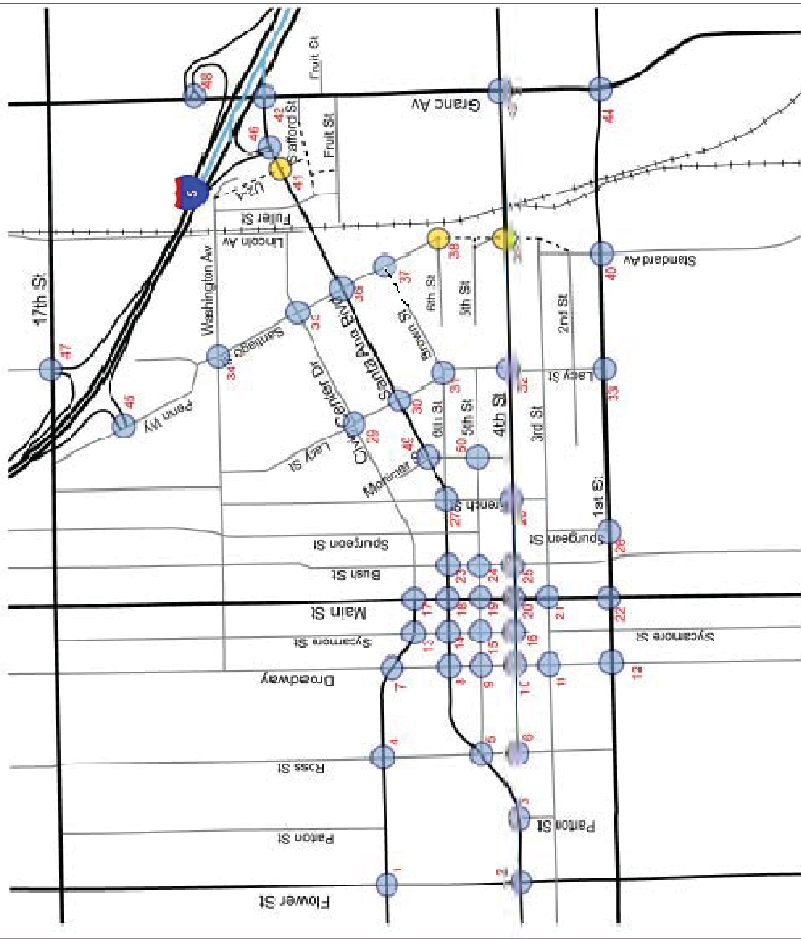
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21		<p>WB 40 1230 136</p> <p>SB 51 1256</p> <p>NB 1230 41</p> <p>EB 43</p>	<p>WB 77 1290 189</p> <p>SB 55 157</p> <p>NB 1028 88</p> <p>EB 88</p>	<p>WB 63 724 34</p> <p>SB 21 11</p> <p>NB 327 43</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0 0</p> <p>NB 518 58</p> <p>EB 0</p>	<p>WB 42 241 19</p> <p>SB 13 206</p> <p>NB 28 28</p> <p>EB 0</p>	<p>WB 13 241 19</p> <p>SB 13 206</p> <p>NB 28 28</p> <p>EB 0</p>	<p>WB 42 241 19</p> <p>SB 13 206</p> <p>NB 28 28</p> <p>EB 0</p>	<p>WB 42 241 19</p> <p>SB 13 206</p> <p>NB 28 28</p> <p>EB 0</p>	<p>WB 42 241 19</p> <p>SB 13 206</p> <p>NB 28 28</p> <p>EB 0</p>	<p>WB 42 241 19</p> <p>SB 13 206</p> <p>NB 28 28</p> <p>EB 0</p>
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26		<p>WB 40 1534 0</p> <p>SB 51 1256</p> <p>NB 1230 41</p> <p>EB 43</p>	<p>WB 77 1290 189</p> <p>SB 55 157</p> <p>NB 1028 88</p> <p>EB 88</p>	<p>WB 63 724 34</p> <p>SB 21 11</p> <p>NB 327 43</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0 0</p> <p>NB 518 58</p> <p>EB 0</p>	<p>WB 42 241 19</p> <p>SB 13 206</p> <p>NB 28 28</p> <p>EB 0</p>	<p>WB 13 241 19</p> <p>SB 13 206</p> <p>NB 28 28</p> <p>EB 0</p>	<p>WB 42 241 19</p> <p>SB 13 206</p> <p>NB 28 28</p> <p>EB 0</p>	<p>WB 42 241 19</p> <p>SB 13 206</p> <p>NB 28 28</p> <p>EB 0</p>	<p>WB 42 241 19</p> <p>SB 13 206</p> <p>NB 28 28</p> <p>EB 0</p>	<p>WB 42 241 19</p> <p>SB 13 206</p> <p>NB 28 28</p> <p>EB 0</p>
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36		<p>WB 222 677 120</p> <p>SB 65 784</p> <p>NB 95 53</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 20 667 22</p> <p>SB 3 685</p> <p>NB 6 22</p> <p>EB 0</p>	<p>WB 20 667 22</p> <p>SB 3 685</p> <p>NB 6 22</p> <p>EB 0</p>	<p>WB 20 667 22</p> <p>SB 3 685</p> <p>NB 6 22</p> <p>EB 0</p>	<p>WB 20 667 22</p> <p>SB 3 685</p> <p>NB 6 22</p> <p>EB 0</p>	<p>WB 20 667 22</p> <p>SB 3 685</p> <p>NB 6 22</p> <p>EB 0</p>	<p>WB 20 667 22</p> <p>SB 3 685</p> <p>NB 6 22</p> <p>EB 0</p>
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Table 4-2
2030 Without Project Peak Hour Intersection Conditions
 (ICU Method)

Intersection	AM Peak Hour		PM Peak Hour	
	ICU	Level of Service	ICU	Level of Service
Signalized Intersections (Using ICU Method)				
Flower St. at Civic Center Dr.	0.683	B	0.734	C
Flower St. at Santa Ana Blvd.	0.572	A	0.587	A
Parrott St. at Santa Ana Blvd.	0.278	A	0.372	A
Ross St. at Civic Center Dr.	0.517	A	0.474	A
Ross St. at Santa Ana Blvd.	0.475	A	0.395	A
Broadway at Civic Center Dr.	0.614	B	0.643	B
Broadway at Santa Ana Blvd.	0.468	A	0.522	A
Broadway at 5th St.	0.349	A	0.462	A
Broadway at 4th St.	0.298	A	0.409	A
Broadway at 3rd St.	0.336	A	0.613	B
Broadway at 1st St.	0.651	B	0.729	C
Sycamore St. at Civic Center Dr.	0.420	A	0.495	A
Main St. at Civic Center Dr.	0.751	C	0.750	C
Main St. at Santa Ana Blvd.	0.654	B	0.693	B
Main St. at 5th St.	0.499	A	0.633	B
Main St. at 4th St.	0.508	A	0.654	B
Main St. at 3rd St.	0.464	A	0.603	B
Main St. at 1st St.	0.773	C	0.872	D
Bush St. at Santa Ana Blvd.	0.295	A	0.403	A
Bush St. at 5th St.	0.242	A	0.442	A
Bush St. at 4th St.	0.270	A	0.464	A
French St. at 4th St.	0.291	A	0.462	A
Lacy St. at 4th St.	0.407	A	0.567	A
Santiago St. at Santa Ana Blvd.	0.541	A	0.677	B
Standard St. at 1st St.	0.808	D	0.833	D
Grand Ave. at Santa Ana Blvd.	0.807	D	0.902	E
Grand Ave. at 4th St.	0.646	B	0.728	C
Grand Ave. at 1st St.	0.700	C	0.777	D

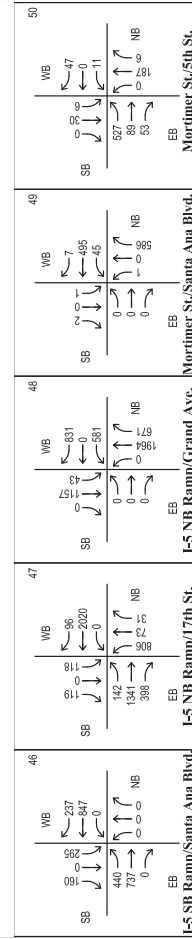
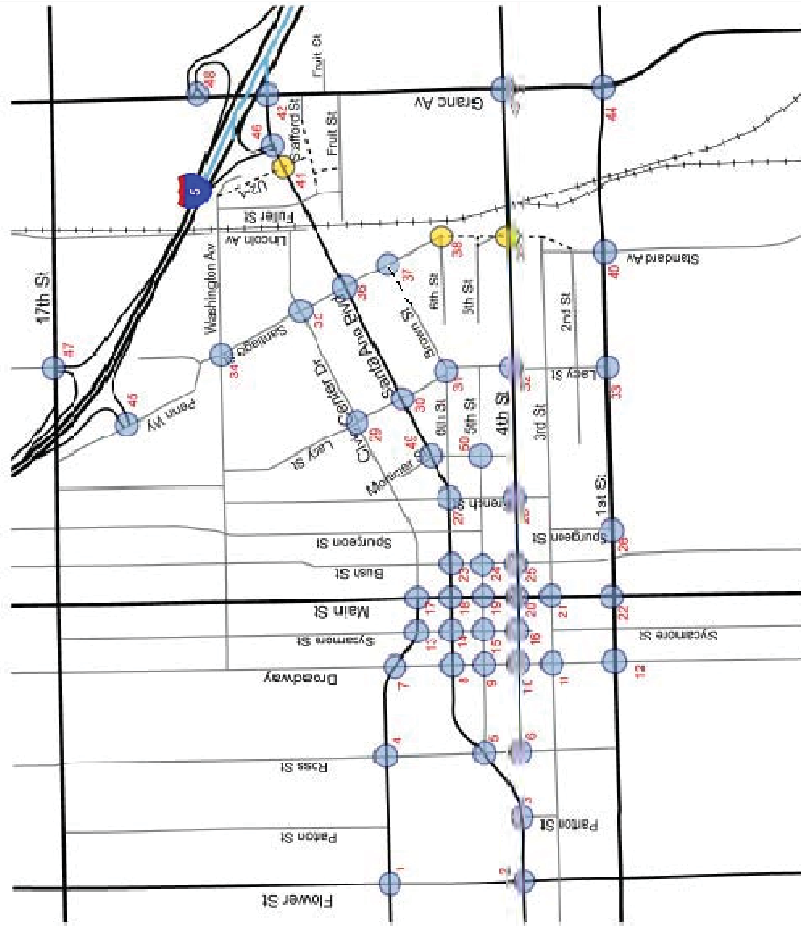
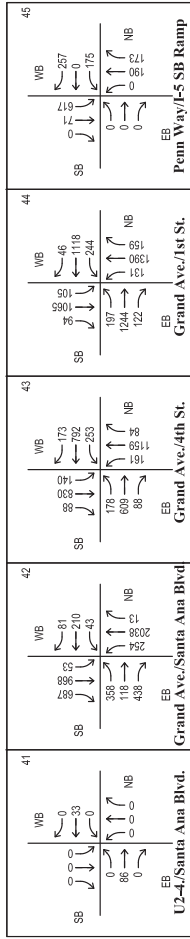


Table 4-3
2030 Without Project Peak Hour Intersection Conditions
(HCM Method)

Intersection	AM Peak Hour		PM Peak Hour	
	Average/Worst Case Delay	Level of Service	Average/Worst Case Delay	Level of Service
Unsignalized Intersections				
Ross St. at 4th St.	10.8	B	12.3	B
Sycamore St. at Santa Ana Blvd.	21.8	C	20.8	C
Sycamore St. at 5th St.	15.7	C	13.7	B
Sycamore St. at 4th St.	7.9	A	9.1	A
Spurgeon St. at 1st St.	10.5	B	14.6	B
French St. at Santa Ana Blvd.	19.7	C	17.7	C
Lacy St. at Civic Center Dr.	20.3	C	33.2	D
Lacy St. at Santa Ana Blvd.	34.2	D	51.6	F
Lacy St. at 6th St.	7.2	A	7.9	A
Lacy St. at 1st St.	23.3	C	57.2	F
Santiago St. at Washington Ave.	17.1	B	26.9	D
Santiago St. at Civic Center Dr.	26.2	D	26.3	D
Mortimer St. at 5th St.	20.3	C	17.8	C
Mortimer St. At Santa Ana Blvd	9.0	A	21.4	C
Signalized Intersections (Caltrans, Using HCM)				
Penn Way at I-5 SB	22.2	C	23.5	C
Santa Ana Blvd at I-5 SB	27.2	C	28.3	C
17t St. at I-5 NB	33.3	C	40.7	D
Grand Ave at I-5 NB	21.2	C	50.2	D

4.3 Anticipated Project Buildout (2030) Without Project Roadway Segment Conditions

The roadway segment ADT analysis for 2030 Without Project conditions is included in Table 4-4. As indicated, a majority of the arterial roadways are operating at acceptable levels. The daily V/C ratio screening analysis indicates that the following locations are potentially experiencing capacity deficiencies under 2030 Without Project conditions:

- Main Street between Ist Street and Santa Ana Boulevard
- Santa Ana Boulevard West of I-5 SB Ramps
- Civic Center Drive between Lacy Street and Lincoln Avenue

The daily volume-to-capacity ratios provide a screening level analysis of daily traffic flows and potential operational problems within the study area. The peak hour analysis for intersections, presented in the previous table (Table 4-2 and Table 4-3), provides a more definitive analysis of the operation of the arterial roadways in the project area. Although a few roadway segments indicate deficiencies, the proposed mitigation should be based on the intersection analysis recommendations. All roadway segments should operate at acceptable level of services under City's General Plan circulation element designations with spot improvements at intersections proposed based on the intersection analysis.

Table 4-4 2030 Without Project Roadway Segment Daily Traffic Condition

Road	Segment	2030 Without Project ADT	Number of Lanes	LOS E Capacity	LOS	LOS E OK
Flower Street	Santa Ana Blvd. to Civic Center Dr.	20,606	4D	37,500	A	
Flower Street	17th St. to Civic Center Dr.	19,312	4D	37,500	A	
Civic Center	West of Flower St.	20,065	4D	37,500	A	
Civic Center	Flower St. to Ross St.	18,993	4D	37,500	A	
Flower Street	Santa Ana Blvd. to 1st St.	20,739	4D	37,500	A	
Santa Ana Blvd.	West of Flower St.	11,075	4D	37,500	A	
Santa Ana Blvd.	Flower St. to Parton St.	13,704	4D	37,500	A	
Santa Ana Blvd.	Parton St. to Ross St.	13,704	4D	37,500	A	
Civic Center	Ross St. to Broadway	17,380	4D	37,500	A	
Santa Ana Blvd.	Ross St. to Broadway	13,704	3D	28,150	A	
Broadway	Civic Center Dr. to Santa Ana Blvd.	21,230	4D	37,500	A	
Broadway	Civic Center Dr. to Washington Ave.	27,580	4D	37,500	C	
Civic Center	Broadway to Sycamore St.	16,974	4D	37,500	A	
Broadway	Santa Ana Blvd. To 5th St.	18,029	4D	37,500	A	
Santa Ana Blvd.	Broadway to Sycamore St.	11,716	3D	28,150	A	
Broadway	5th St. to 4th St.	17,961	4D	37,500	A	
5th St.	Broadway to Ross St.	9,017	3D	28,150	A	
5th St.	Broadway to Main St.	9,017	3D	28,150	A	
Broadway	3rd St. to 4th St.	17,537	4U	25,000	C	
Broadway	3rd St. to 1st St.	17,799	4U	25,000	C	
Broadway	South of 1st St.	13,732	4U	25,000	A	
1st St.	Broadway to Ross St.	44,751	6D	56,300	C	

Road	Segment	2030 Without Project ADT	Number of Lanes	LOSE Capacity	LOS	LOS EOK
Ist St.	Main St. to Broadway	46,020	6D	56,300	D	
Civic Center	Sycamore St. to Main St.	16,142	4D	37,500	A	
Santa Ana Blvd.	Sycamore St. to Main St.	11,342	3D	28,150	A	
5th St.	Sycamore St. to Broadway	9,023	3D	28,150	A	
5th St.	Sycamore St. to Main St.	9,229	3D	28,150	A	
Main St.	Civic Center Dr. to Santa Ana Blvd.	35,475	4D	37,500	E	E ok
Main St.	Civic Center Dr. to Washington Ave	36,653	4D	37,500	E	E ok
Civic Center	Main St. to Bush St.	12,756	4D	37,500	A	
Main St.	Santa Ana Blvd. To 5th St.	37,204	4D	37,500	E	E ok
Santa Ana Blvd.	Main St. to Bush St.	11,378	3D	28,150	A	
Main St.	5th St. to 4th St.	37,179	4U	25,000	F	
5th St.	Main St. to Bush St.	6,729	3D	28,150	A	
Main St.	3rd St. to 4th St.	32,491	4U	25,000	F	
Main St.	1st St. to 3rd St.	32,491	4U	25,000	F	
Santa Ana Blvd.	Bush St. to Spurgeon St.	11,294	3D	28,150	A	
5th St.	Bush St. to French St.	6,538	3D	28,150	A	
Ist St.	Spurgeon St. to Main St.	42,436	6D	56,300	C	
Santa Ana Blvd.	Lacy St. Standard Ave	16,188	4D	37,500	A	
Civic Center	French St. to Lacy St.	14,027	4D	37,500	A	
Santa Ana Blvd.	Lacy St. to French St.	16,199	2D	18,750	D	
4th St.	Lacy St. to French St.	13,171	2D	18,750	C	
Ist St.	Lacy St. to Spurgeon St.	42,984	6D	56,300	C	
Ist St.	Lacy St. to Standard Ave	42,984	6D	56,300	C	
Santiago St.	Washington Ave. to Civic Center Dr.	11,475	4D	37,500	A	
Santiago St.	Washington Ave. to 17th St	11,031	4D	37,500	A	
Santiago St.	Santa Ana Blvd to Civic Center Dr.	11,126	4D	37,500	A	
Civic Center	Santiago St to Lacy St	13,373	2U	12,500	F	
Civic Center	Lincoln Ave to Santiago St	13,320	2U	12,500	F	
Santiago St.	Santa Ana Blvd. to Brown St.	7,426	4D	37,500	A	
Santa Ana Blvd.	Santiago St. to Lacy St.	16,429	4D	37,500	A	
Santa Ana Blvd.	Santiago St. to U-24	22,625	6D	56,300	A	
4th St.	Santiago St to Lacy St	19,389	4D	37,500	A	
Grand Ave.	4th St. to Santa Ana Blvd	41,729	6D	56,300	C	
Grand Ave.	Santa Ana Blvd to 17th St	36,191	6D	56,300	B	
Santa Ana Blvd.	East of Grand Ave.	8,908	4D	37,500	A	

Road	Segment	2030 Without Project ADT	Number of Lanes	LOSE Capacity	LOS	LOS EOK
Grand Ave.	1st St. to 4th St.	35,290	6D	56,300	B	
4th St.	Grand Ave to Santiago St	19,769	4D	37,500	A	
4th St.	East of Grand Ave.	22,742	4D	37,500	B	
Grand Ave.	South of 1st St.	45,394	6D	56,300	D	
Ist St.	Standard Ave to Grand Ave	44,898	6D	56,300	C	
Ist St.	East of Grand Ave.	40,076	6D	56,300	C	
Penn Way	South of I-5 SB Ramps	9,489	2D	18,750	A	
Penn Way	North of I-5 SB Ramps	15,452	4D	37,500	A	
Santa Ana Blvd.	West of I-5 SB Ramps	40,061	4D	37,500	F	
Santa Ana Blvd.	East of I-5 SB Ramps	25,782	4D	37,500	B	
17th St.	West of I-5 NB Ramps	48,954	6D	56,300	D	
17th St.	East of I-5 NB Ramps	38,875	6D	56,300	B	
Grand Ave.	South of I-5 NB Ramps	50,241	6D	56,300	D	
Grand Ave.	North of I-5 NB Ramps	46,432	6D	56,300	D	

4.4 Without Project (2030) Peak Hour Freeway Ramp Conditions

2030 Without Project peak hour ramp analysis results are presented on Table 4-5. All ramps operate at LOS D or better during the AM and/or PM peak hour time periods except the northbound on ramp at the interchange of I-5 at Santa Ana Boulevard.

Table 4-5 2030 Without Project Peak Hour Freeway Ramp Analysis

INTER-CHANGE	RAMP	RAMP TYPE CODE ¹	LANES	PEAK HOUR CAPACITY	AM PEAK HOUR		PM PEAK HOUR			
					VOL	V/C	VOL	V/C		
I-5 at 17th St.	SB On	4	2	1,800	729	0.41	A	790	0.44	A
	NB Loop On	4	2	1,800	255	0.14	A	398	0.22	A
	SB Off	5	1	1,500	469	0.31	A	432	0.29	A
I-5 at Santa Ana Blvd.	NB Off	5	1	1,500	788	0.53	A	910	0.61	A
	SB Direct On (HOV)	6	2	2,250	236	0.10	A	184	0.08	A
	SB Loop On	4	2	1,800	384	0.21	A	677	0.38	A
	NB Loop On	4	2	1,800	442	0.25	A	714	0.40	A
	SB Off	5	1	1,500	563	0.38	A	455	0.30	A
	NB Off	5	1	1,500	1,010	0.67	B	1,412	0.94	E

Note 1 : Reference to Freeway Ramp Capacity Assumptions Table

4 - Two-lane Metered On-Ramp, 2 Mixed Flow Lanes at Meter

5 - One-lane Unmetered Ramp

6 - Two-lane Unmetered On-Ramp, tapers to one merge lane at or beyond gore point

5. GENERAL PLAN (2035) WITHOUT PROJECT TRAFFIC CONDITIONS

This section documents the General Plan Buildout (2035) traffic conditions without the addition of project-related traffic to the surrounding street system. It includes development of the buildout traffic conditions in the study area based on traffic growth projections provided by the OCTAM model applied to existing traffic patterns. The methodology of the OCTAM 3.2 and 3.3 traffic models was documented in Section 2.9 of this report. KOA Corporation worked closely with OCTA staff to refine the OCTAM model to assist the traffic study. Figure 5-1 illustrates the refined highway network in the traffic model. Appendix F includes the output link volumes for AM, PM, and ADT from the 2000 and 2030 traffic models, the existing traffic volumes and the resulted 2035 adjusted link volumes for AM, PM, and ADT. Appendix F includes the initial refined 2035 turning movement volumes for each intersection for both AM and PM peak hours based on the NCHRP-255 methodology. Those volumes are then compared with the 2030 Without Project conditions to ensure all cumulative projects being considered under the General Plan conditions. The final result is a set of AM and PM intersection volumes suitable to conduct the analysis for 2035 Without Project conditions.

5.1 General Plan (2035) Without Project Intersection Conditions

Figures 5-2a through Figure 5-2e illustrate the AM peak hour volumes for the 50 intersections while Figures 5-2f through Figure 5-2j illustrate the PM peak hour volumes for General Plan 2035 Without Project conditions. Tables 5-1 and 5-2 illustrate the future without project intersection level of service conditions. As shown in the table, the following intersections will operate at unacceptable levels of service during AM or PM peak hours under 2035 Without Project conditions. Appendix G includes all analysis worksheets for 2035 Without Project conditions.

- Flower Street at Civic Center Drive (Signalized)
- Main Street at 1st Street (Signalized)
- Grand Avenue at Santa Ana Boulevard (Signalized)
- Grand Avenue at I-5 NB Ramp (Signalized)
- 17th Street at I-5 NB Ramp (Signalized)
- Lacy Street at Civic Center Drive (Two-way stop control)
- Lacy Street at Santa Ana Boulevard (Two-way stop control)
- Lacy Street at 1st Street (Two-way stop control)
- Santiago Street at Washington Avenue (All-way stop control)
- Santiago Street at Civic Center Drive (All-way stop control)

Four intersections warrant signals under 2035 Without Project conditions (Lacy Street at 1st Street, Lacy Street at Santa Ana Boulevard, Santiago Street at Washington Avenue, and Santiago Street at Civic Center Drive). All signal warrant worksheets are included in Appendix C of this report.

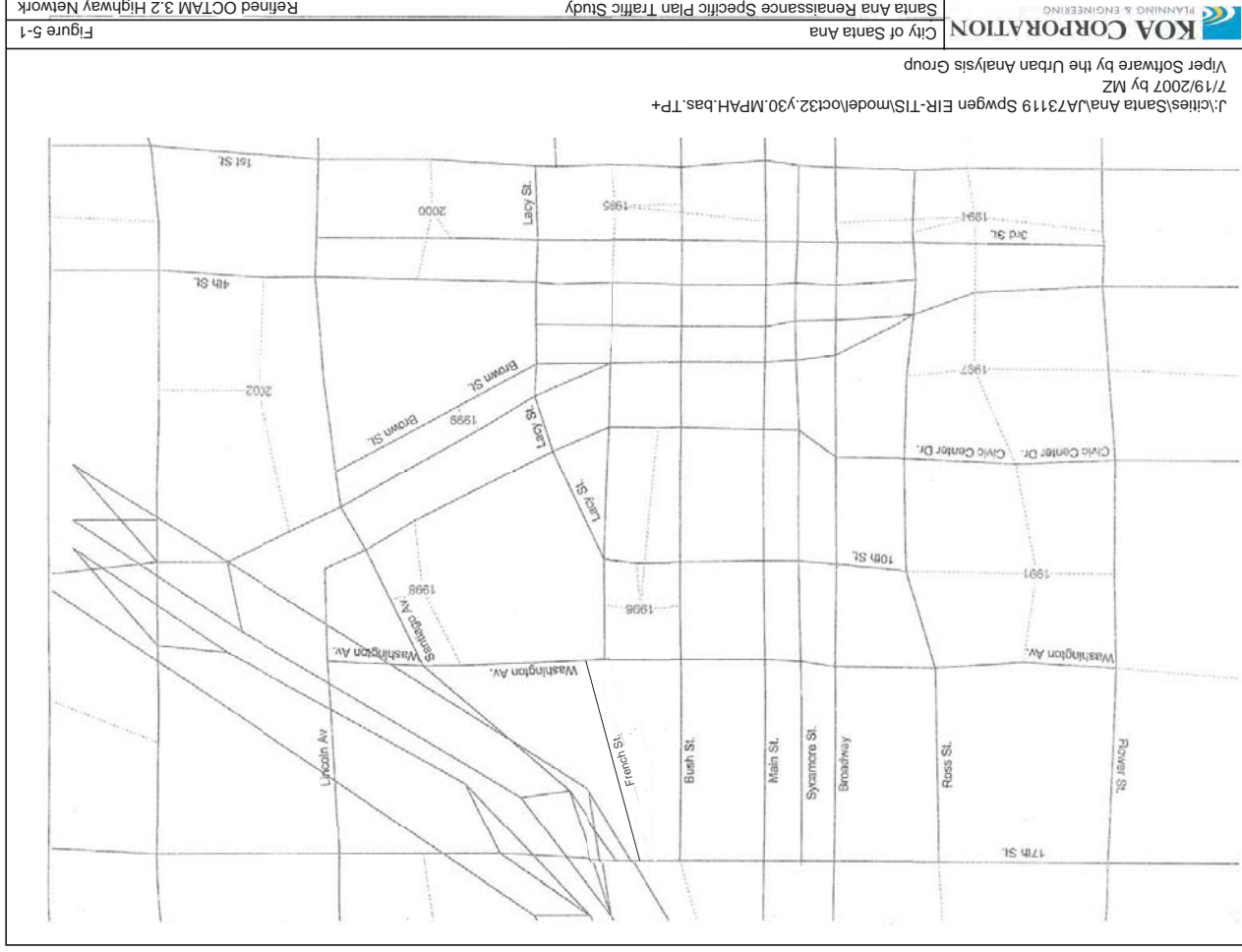


Figure 5-1

Santa Ana Renaissance Specific Plan Traffic Study

City of Santa Ana

PLANNING & ENGINEERING

KOA CORPORATION

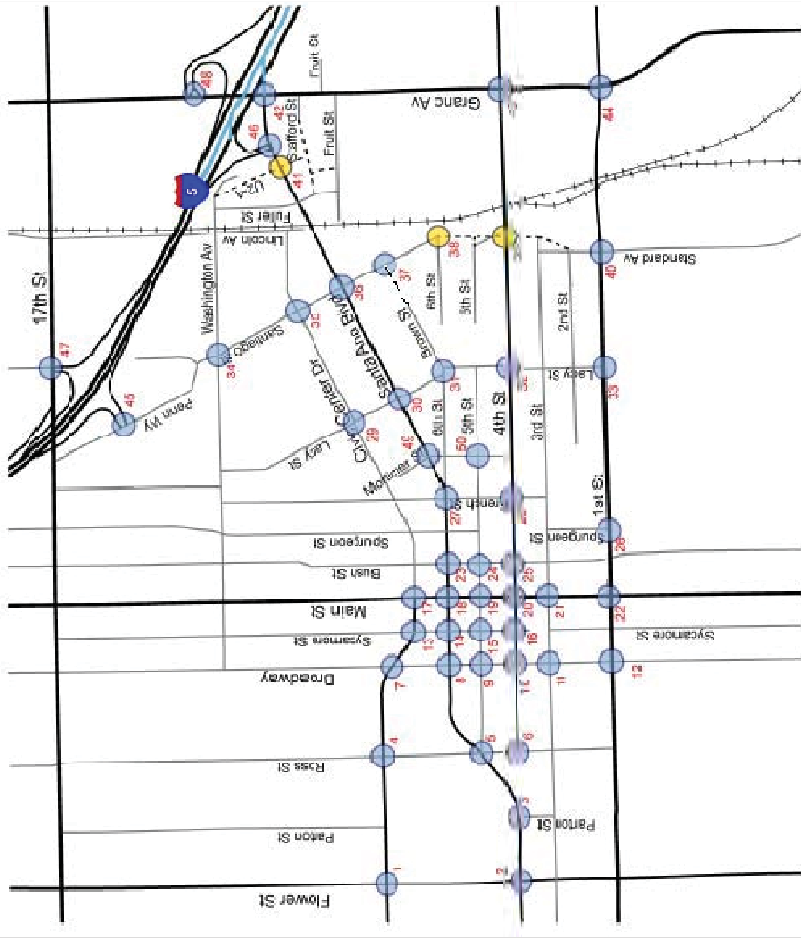
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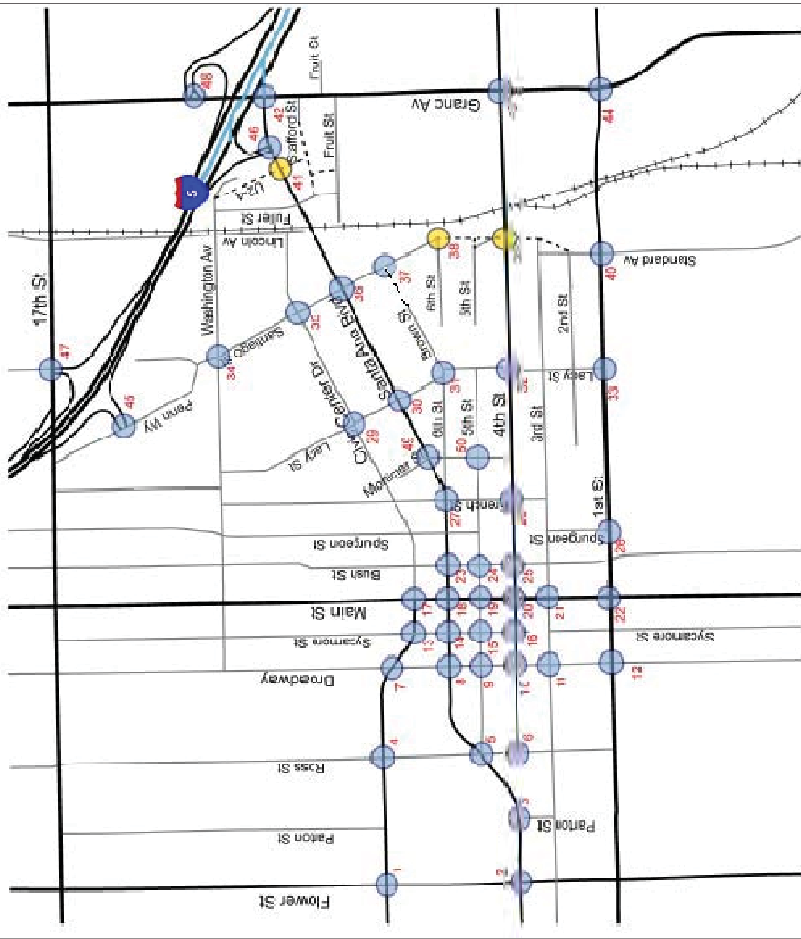
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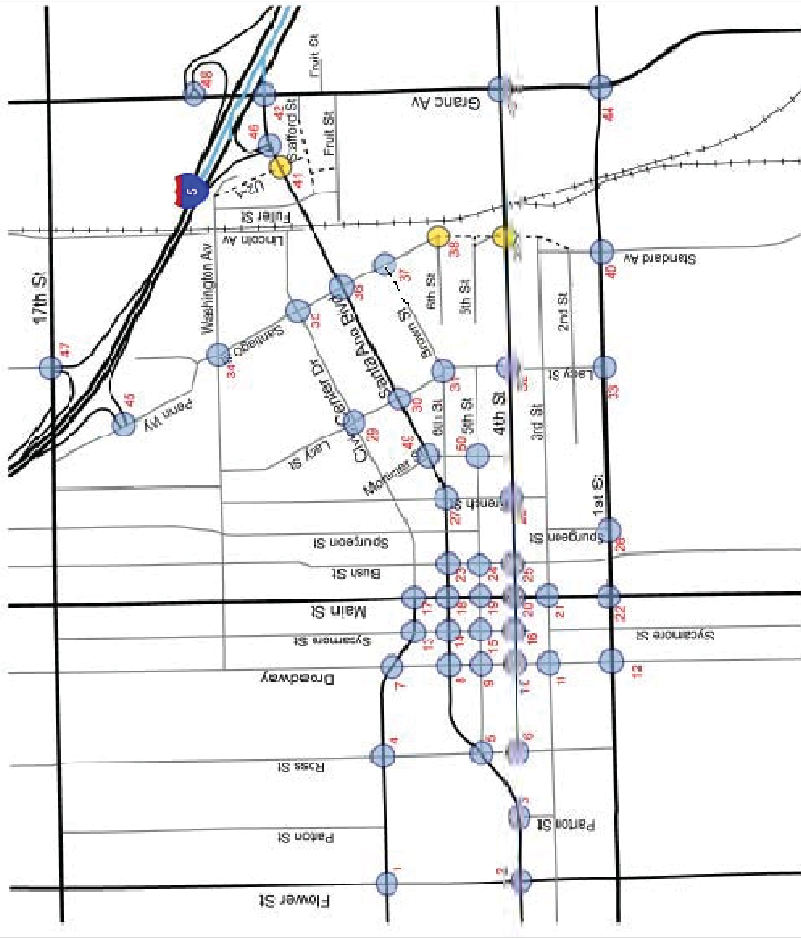
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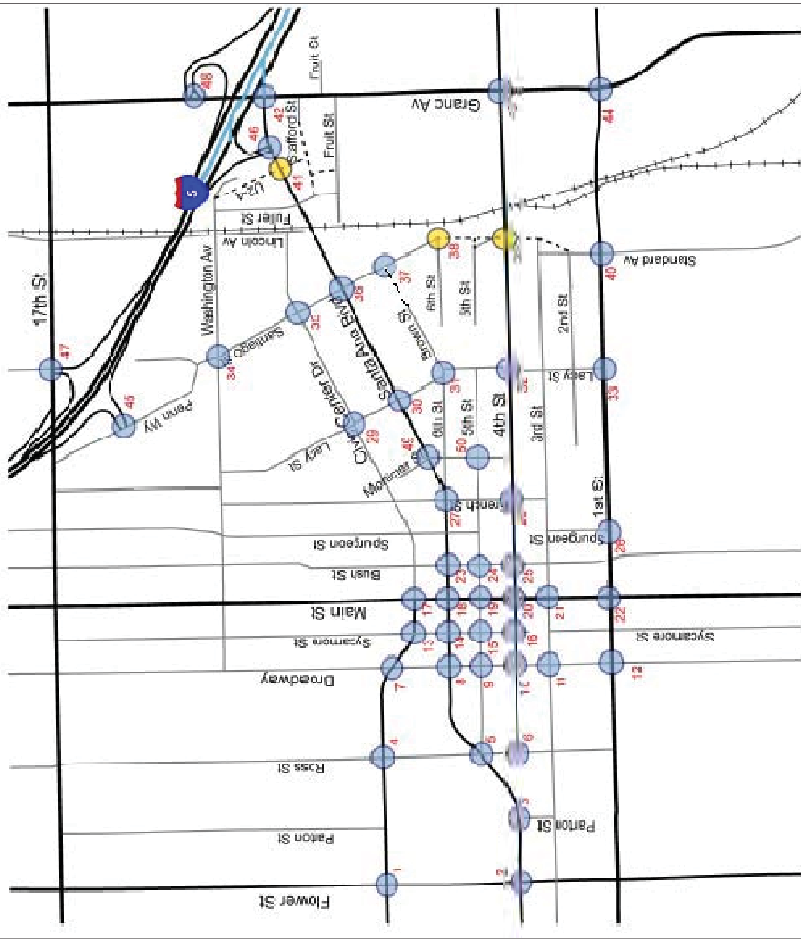
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City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study 2035 Without Project AM Peak Hour
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Ross St./4th St.	Broadway/Civic Center Dr.	Broadway/Santa Ana Blvd.	Broadway/5th St.	Broadway/4th St.																																																																																

City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study 2035 Without Project PM Peak Hour
KOA CORPORATION
 PLANNING & ENGINEERING

Table 5-1 2035 Without Project Peak Hour Intersection Conditions (ICU Method)

Intersection	AM Peak Hour		PM Peak Hour	
	ICU	Level of Service	ICU	Level of Service
Signalized Intersections (Using ICU Method)				
Flower St. at Civic Center Dr.	0.789	C	1.138	F
Flower St. at Santa Ana Blvd.	0.685	B	0.694	B
Parton St. at Santa Ana Blvd.	0.316	A	0.428	A
Ross St. at Civic Center Dr.	0.634	B	0.564	A
Ross St. at Santa Ana Blvd.	0.581	A	0.668	B
Broadway at Civic Center Dr.	0.721	C	0.743	C
Broadway at Santa Ana Blvd.	0.595	A	0.612	B
Broadway at 5th St.	0.399	A	0.620	B
Broadway at 4th St.	0.449	A	0.610	B
Broadway at 3rd St.	0.406	A	0.803	D
Broadway at 1st St.	0.779	C	0.844	D
Sycamore St. at Civic Center Dr.	0.484	A	0.573	A
Main St. at Civic Center Dr.	0.875	D	0.883	D
Main St. at Santa Ana Blvd.	0.799	C	0.836	D
Main St. at 5th St.	0.611	B	0.812	D
Main St. at 4th St.	0.613	B	0.776	C
Main St. at 3rd St.	0.533	A	0.694	B
Main St. at 1st St.	0.918	E	1.013	F
Bush St. at Santa Ana Blvd.	0.335	A	0.462	A
Bush St. at 5th St.	0.297	A	0.560	A
Bush St. at 4th St.	0.347	A	0.576	A
French St. at 4th St.	0.342	A	0.543	A
Lacy St. at 4th St.	0.508	A	0.751	C
Santiago St. at Santa Ana Blvd.	0.904	E	0.993	E
Standard St. at 1st St.	0.940	E	0.970	E
Grand Ave. at Santa Ana Blvd.	0.966	E	1.172	F
Grand Ave. at 4th St.	0.747	C	0.841	D
Grand Ave. at 1st St.	0.894	D	0.960	E

Table 5-2
2035 Without Project Peak Hour Intersection Conditions (HCM Method)

Intersection	AM Peak Hour		PM Peak Hour	
	Average/Worst Case Delay	Level of Service	Average/Worst Case Delay	Level of Service
Unsignalized Intersections				
Ross St. at 4th St.	11.7	B	13.6	B
Sycamore St. at Santa Ana Blvd.	28.7	D	29.8	D
Sycamore St. at 5th St.	19.2	C	15.7	C
Sycamore St. at 4th St.	8.4	A	9.8	A
Spurgeon St. at 1st St.	11.3	B	18.7	C
French St. at Santa Ana Blvd.	24.5	C	24.0	C
Lacy St. at Civic Center Dr.	28.6	D	69.9	F
Lacy St. at Santa Ana Blvd.	122.1	F	179.1	F
Lacy St. at 6th St.	7.3	A	8.1	A
Lacy St. at 1st St.	45.3	E	410.8	F
Santiago St. at Washington Ave.	126.8	F	143.1	F
Santiago St. at Civic Center Dr.	280.0	F	221.7	F
Mortimer St. at 5th St.	9.5	A	33.5	D
Mortimer St. at Santa Ana Blvd.	23.1	A	23.0	C
Signalized Intersections (Caltrans, Using HCM)				
Penn Way at I-5 SB	25.1	C	28.5	C
Santa Ana Blvd. at I-5 SB	29.2	C	29.7	C
17th St. at I-5 NB	39.9	D	73.0	E
Grand Ave at I-5 NB	30.2	C	119.9	F

5.2 General Plan (2035) Without Project Roadway Segment Conditions

The roadway segment ADT analysis for 2035 is presented in Table 5-3. As indicated, a majority of the arterial roadways are operating at acceptable levels. The daily V/C ratio screening analysis indicates that the following locations are potentially experiencing capacity deficiencies under 2030 Without Project conditions:

- 1st Street between Standard Avenue and Grand Avenue
- Main Street between Washington Avenue and 4th Street
- Civic Center Drive between Santiago Street and Lincoln Avenue
- 17th Street at West of I-5 NB Ramps
- Grand Avenue South of 1st Street

- Grand Avenue South of I-5 NB Ramps
- Grand Avenue North of I-5 NB Ramps

The daily volume-to-capacity ratios provide a screening level analysis of daily traffic flows and potential operational problems within the study area. The peak hour analysis for intersections, presented in the previous section, provides a more definitive analysis of the operation of the arterial roadways in the project area. Although a few roadway segments indicate deficiencies, the proposed mitigation should be based on the intersection analysis recommendations. All roadway segments should operate at acceptable level of services under City's General Plan circulation element designations with spot improvements at intersections proposed based on the intersection analysis.

Table 5-3 2035 Without Project Roadway Segment Daily Traffic Condition

Road	Segment	2035 Without Project ADT	Number of Lanes	LOSE Capacity	LOS	LOSE OK
Flower Street	Santa Ana Blvd to Civic Center Dr.	23,899	4D	37,500	B	
Flower Street	17th St to Civic Center	22,362	4D	37,500	A	
Civic Center Dr.	West of Flower St.	22,865	4D	37,500	B	
Civic Center Dr.	Flower St. to Ross St.	21,628	4D	37,500	A	
Flower Street	Santa Ana Blvd. to 1st St.	25,802	4D	37,500	B	
Santa Ana Blvd.	West of Flower St.	13,071	6D	56,300	A	
Santa Ana Blvd.	Flower St. to Parton St.	15,823	6D	56,300	A	
Santa Ana Blvd.	Parton St. to Ross St.	17,917	6D	56,300	A	
Civic Center Dr.	Ross St. to Broadway	19,769	4D	37,500	A	
Santa Ana Blvd.	Ross St. to Broadway	15,823	3D	28,150	A	
Broadway	Civic Center Dr. to Santa Ana Blvd.	23,770	4D	37,500	B	
Broadway	Civic Center Dr. to Washington Ave	30,191	4D	37,500	D	
Civic Center Dr.	Broadway to Sycamore St	19,827	4D	37,500	A	
Broadway	Santa Ana Blvd. To 5th St.	20,416	4D	37,500	A	
Santa Ana Blvd.	Broadway to Sycamore St.	13,769	3D	28,150	A	
Broadway	5th St. to 4th St.	20,416	4D	37,500	A	
5th St	Broadway to Ross St.	10,424	3D	28,150	A	
5th St	Broadway to Main St.	13,844	3D	28,150	A	
Broadway	3rd St. to 4th St.	20,111	4D	37,500	A	

Road	Segment	2035 Without Project ADT	Number of Lanes	LOSE Capacity	LOS	LOSE OK
Broadway	3rd St. to 1st St.	25,856	4D	37,500	B	
Broadway	South of 1st St.	14,281	4D	37,500	A	
1st St.	Broadway to Ross St.	49,198	6D	56,300	D	
1st St.	Main St. to Broadway	49,245	6D	56,300	D	
Civic Center Dr.	Sycamore St. to Main St.	18,639	4D	37,500	A	
Santa Ana Blvd.	Sycamore St. to Main St.	12,835	3D	28,150	A	
5th St.	Sycamore St. to Broadway	10,424	3D	28,150	A	
5th St.	Sycamore St. to Main St.	10,424	3D	28,150	A	
Main St.	Civic Center Dr. to Santa Ana Blvd.	40,300	4D	37,500	F	
Main St.	Civic Center Dr. to Washington Ave	41,588	4D	37,500	F	
Civic Center Dr.	Main St. to Bush St.	14,658	4D	37,500	A	
Main St.	Santa Ana Blvd. To 5th St.	42,313	4D	37,500	F	
Santa Ana Blvd.	Main St. to Bush St.	13,859	3D	28,150	A	
Main St.	5th St. to 4th St.	42,313	4U	25,000	F	
5th St	Main St. to Bush St.	9,622	3D	28,150	A	
Main St.	3rd St. to 4th St.	36,873	4D	37,500	E	Ok
Main St.	1st St. to 3rd St.	36,873	4D	37,500	E	Ok
Santa Ana Blvd.	Bush St. to Spurgeon St.	12,885	3D	28,150	A	
5th St	Bush St. to French St.	7,507	3D	28,150	A	
1st St.	Spurgeon St. to Main St.	49,245	6D	56,300	D	
Santa Ana Blvd.	Lacy St. Standard Ave	18,785	4D	37,500	A	
Civic Center Dr.	French St. to Lacy St	15,359	4D	37,500	A	
Santa Ana Blvd.	Lacy St. to French St.	18,798	4D	37,500	A	
4th St.	Lacy St. to French St.	15,285	4D	37,500	A	
1st St.	Lacy St. to Spurgeon St.	49,881	6D	56,300	D	
1st St.	Lacy St. to Standard Ave	49,881	6D	56,300	D	
Santiago St.	Washington Ave. to Civic Center Dr.	19,851	4D	37,500	A	
Santiago St.	Washington Ave. to 17th St	17,204	4D	37,500	A	
Santiago St.	Santa Ana Blvd to Civic Center Dr.	20,771	4D	37,500	A	
Civic Center Dr.	Santiago St. to Lacy St	15,359	2U	12,500	F	
Civic Center Dr.	Lincoln Ave to Santiago St.	14,658	2U	12,500	F	
Santiago St.	Santa Ana Blvd. to Brown St.	8,618	4D	37,500	A	
Santa Ana Blvd.	Santiago St. to Lacy St	24,852	4D	37,500	B	
Santa Ana Blvd.	Santiago St. to UJ-24	29,178	6D	56,300	A	

Road	Segment	2035 Without Project ADT	Number of Lanes	LOS E Capacity	LOS	LOS E OK
4th St.	Santiago St. to Lacy St.	22,500	4D	37,500	A	
Grand Ave.	4th St. to Santa Ana Blvd	48,424	6D	56,300	D	
Grand Ave.	Santa Ana Blvd to 17th St.	47,112	6D	56,300	D	
Santa Ana Blvd.	East of Grand Ave.	9,779	4D	37,500	A	
Grand Ave.	1st St. to 4th St.	40,071	6D	56,300	C	
4th St.	Grand Ave to Santiago St.	22,500	4D	37,500	A	
4th St.	East of Grand Ave.	25,510	4D	37,500	B	
Grand Ave.	South of 1st St.	53,061	6D	56,300	E	
1st St.	Standard Ave to Grand Ave	52,076	6D	56,300	E	
1st St.	East of Grand Ave.	46,456	6D	56,300	D	
Penn Way	South of I-5 SB Ramps	15,508	2D	18,750	D	
Penn Way	North of I-5 SB Ramps	17,871	4D	37,500	A	
Santa Ana Blvd.	West of I-5 SB Ramps	46,209	6D	56,300	C	
Santa Ana Blvd.	East of I-5 SB Ramps	29,984	4D	37,500	C	
17th St.	West of I-5 NB Ramps	56,809	6D	56,300	F	
17th St.	East of I-5 NB Ramps	45,113	6D	56,300	D	
Grand Ave.	South of I-5 NB Ramps	61,046	6D	56,300	F	
Grand Ave.	North of I-5 NB Ramps	57,596	6D	56,300	F	

5.3 General Plan (2035) Without Project Peak Hour Freeway Ramp Conditions

Without project peak hour ramp analysis results are presented on Table 5-4. All ramps operate at LOS D or better during the AM and/or PM peak hour time periods except the northbound on ramp at the interchange of I-5 at Santa Ana Boulevard.

Table 5-4 2035 Without Project Peak Hour Freeway Ramp Analysis

INTER-CHANGE	RAMP	RAMP TYPE CODE	LANES	PEAK HOUR CAPACITY	AM PEAK HOUR		PM PEAK HOUR			
					VOL	V/C	VOL	V/C		
I-5 at 17th St.	SB On	4	2	1,800	869	0.48	A	1,005	0.56	A
	NB Loop On	4	2	1,800	294	0.16	A	458	0.25	A
	SB Off	5	1	1,500	556	0.37	A	581	0.39	A
I-5 at Santa Ana Blvd.	NB Off	5	1	1,500	910	0.61	A	1,054	0.70	B
	SB Direct On (HOV)	6	2	2,250	392	0.17	A	485	0.22	A
	SB Loop On	4	2	1,800	482	0.27	A	782	0.43	A
	NB Loop On	4	2	1,800	599	0.33	A	828	0.46	A
	SB Off	5	1	1,500	660	0.44	A	541	0.36	A
	NB Off	5	1	1,500	1366	0.91	E	1,651	1.10	F

Note 1: Reference to Freeway Ramp Capacity Assumptions Table

4 - Two-lane Metered On-Ramp, 2 Mixed Flow Lanes at Meter

5 - One-lane Unmetered Ramp

6 - Two-lane Unmetered On-Ramp, tapers to one merge lane at or beyond gore point

6. PROJECT RELATED TRAFFIC

6.1 Project Trip Generation

As illustrated on Figure 6-1 for the proposed traffic analysis zone structure, the project site has been subdivided into 13 traffic analysis zones (TAZs). The TAZ structure was developed based on the Development Potential and Existing Diagram (with blocks) provided by Moule & Polyzoides as well as the roadway system in the vicinity area.

The trip generation for the project is based on the most recent Institute of Transportation Engineers (ITE) Trip Generation, 8th Edition. Table 6-1 presents the ITE trip generation rates used to calculate project trip generation. Table 6-2 summarizes the peak hour inbound and outbound project trips and the daily project trips for the entire project area. Table 6-3 indicates the detailed trip generation for each TAZ.

Table 6-1 Project Trip Generation Rates

Land Use	ITE Code	Unit	Daily	AM Peak Hour		PM Peak Hour			
				Total	In	Total	In		
Single Family Housing	210	DU	9.57	0.75	0.19	0.56	1.01	0.64	0.37
Multi Family Housing	230	DU	5.81	0.44	0.07	0.37	0.52	0.35	0.17
Retail	820	TSF	42.94	1.00	0.61	0.39	3.73	1.83	1.90
Industrial	110	TSF	6.97	0.92	0.81	0.11	0.97	0.12	0.85
Commercial	710	TSF	11.01	1.55	1.36	0.19	1.49	0.25	1.24
Civic	730	TSF	68.93	5.88	4.94	0.94	1.21	0.38	0.83

Source: ITE Trip Generation, 8th Edition, 2008

Table 6-2 Project Trip Generation

Land Use	Quantity	ITE Code	Unit	Daily	AM Peak Hour			PM Peak Hour		
					Total	In	Out	Total	In	Out
Single Family Housing	294	210	DU	2,814	221	56	165	297	188	109
Multi Family Housing	3,104	230	DU	18,034	1,366	217	1,148	1,614	1,086	528
High Rise Tower	402	222	DU	1,688	121	32	88	141	84	56
Residential Subtotal	3,800			22,536	1,707	305	1,402	2,052	1,359	693
Retail	351	820	TSF	15,072	351	214	137	1,309	642	667
Industrial	-938'	110	TSF	-6,538	-863	-760	-103	-910	-113	-797
Commercial	-124	710	TSF	-1,365	-192	-169	-24	-185	-31	-154
Civic	-21	730	TSF	-1,448	-123	-104	-20	-25	-8	-17
ALL TAZ PROJECT TOTAL				28,258	879	-513	1,392	2,241	1,850	391
5% mode choice deduction for all trips				-1,413	-44	-26	-70	-112	-92	-20
20% residential internal capture				-4,507	-341	-61	-280	-410	-272	-138
FINAL NET PROJECT TRIPS				22,337	494	-548	1,042	1,719	1,485	234

Note 1: 938,000 s.f. in the study area; 990,000 s.f. total

Table 6-3 Project Trip Generation by Block

Land Use	Quantity	ITE Code	Unit	Daily	AM Peak Hour			PM Peak Hour		
					Total	In	Out	Total	In	Out
Single Family Housing	0	210	DU	0	0	0	0	0	0	0
Multi Family Housing	91	230	DU	533	40	6	34	47	32	15
Retail	7	820	TSF	301	7	4	3	26	13	14
Industrial	0	110	TSF	0	0	0	0	0	0	0
Commercial	0	710	TSF	0	0	0	0	0	0	0
Civic	0	730	TSF	0	0	0	0	0	0	0
TAZ 1 NET PROJECT TOTAL				834	47	11	36	74	44	29
5% mode choice deduction				-42	-2	-1	-2	-4	-2	-1
20% residential internal capture				-107	-8	-1	-7	-9	-6	-3
FINAL NET PROJECT TRIPS				685	37	9	28	60	36	25

Table 6-3 Project Trip Generation by Block (cont)

Land Use	Quantity	ITE Code	Unit	Daily	AM Peak Hour			PM Peak Hour		
					Total	In	Out	Total	In	Out
TAZ 2 (DOWNTOWN DISTRICT) TRIP GENERATION:										
Single Family Housing	0	210	DU	0	0	0	0	0	0	0
Multi Family Housing	105	230	DU	615	46	7	39	55	37	18
Retail	0	820	TSF	0	0	0	0	0	0	0
Industrial	0	110	TSF	0	0	0	0	0	0	0
Commercial	0	710	TSF	0	0	0	0	0	0	0
Civic	0	730	TSF	0	0	0	0	0	0	0
TAZ 2 NET PROJECT TOTAL				615	46	7	39	55	37	18
5% mode choice deduction				-31	-2	0	-2	-3	-2	-1
20% residential internal capture				-123	-9	-1	-8	-11	-7	-4
FINAL NET PROJECT TRIPS				461	35	6	29	41	28	13
TAZ 3 (DOWNTOWN DISTRICT) TRIP GENERATION:										
Single Family Housing	0	210	DU	0	0	0	0	0	0	0
Multi Family Housing	190	230	DU	1,113	84	13	70	99	67	32
Retail	17	820	TSF	730	18	11	7	64	31	33
Industrial	0	110	TSF	0	0	0	0	0	0	0
Commercial	0	710	TSF	0	0	0	0	0	0	0
Civic	0	730	TSF	0	0	0	0	0	0	0
TAZ 3 NET PROJECT TOTAL				1,843	101	24	77	163	97	65
5% mode choice deduction				-92	-5	-1	-4	-8	-5	-3
20% residential internal capture				-223	-17	-3	-14	-20	-13	-6
FINAL NET PROJECT TRIPS				1,529	79	20	59	135	79	56
TAZ 4 (DOWNTOWN DISTRICT) TRIP GENERATION:										
Single Family Housing	0	210	DU	0	0	0	0	0	0	0
Multi Family Housing	385	230	DU	2,256	169	27	142	200	135	65
Retail	106	820	TSF	4,552	109	67	42	398	191	207
Industrial	0	110	TSF	0	0	0	0	0	0	0
Commercial	-100	710	TSF	-1,101	-100	-88	-12	-100	-17	-83
Civic	0	730	TSF	0	0	0	0	0	0	0
TAZ 4 NET PROJECT TOTAL				5,707	179	6	173	498	309	189
5% mode choice deduction				-285	-9	0	-9	-25	-15	-9
20% residential internal capture				-451	-34	-5	-28	-40	-27	-13
FINAL NET PROJECT TRIPS				4,970	136	0	136	433	266	167

Table 6-3 Project Trip Generation by Block (cont)

Land Use	Quan- tity	ITE Code	Unit	Daily	AM Peak Hour		PM Peak Hour	
					Total	In	Out	Total	In	Out
TAZ 5 (DOWNTOWN DISTRICT) TRIP GENERATION:								
Single Family Housing	0	210	DU	0	0	0	0	0
Multi Family Housing	10	230	DU	59	4	1	4	5
Retail	-1	820	TSF	-43	-1	0	-4	-2
Industrial	0	110	TSF	0	0	0	0	0
Commercial	0	710	TSF	0	0	0	0	0
Civic	0	730	TSF	0	0	0	0	0
TAZ 5 NET PROJECT TOTAL				16	3	0	3	1
5% mode choice deduction				-1	0	0	0	0
20% residential internal capture				-12	-1	0	-1	-1
FINAL NET PROJECT TRIPS				3	2	0	2	0
TAZ 6 (LACY DISTRICT) TRIP GENERATION:								
Single Family Housing	15	210	DU	144	11	3	8	15
Multi Family Housing	85	230	DU	498	37	6	31	44
Retail	0	820	TSF	0	0	0	0	0
Industrial	0	110	TSF	0	0	0	0	0
Commercial	0	710	TSF	0	0	0	0	0
Civic	0	730	TSF	0	0	0	0	0
TAZ 6 NET PROJECT TOTAL				642	49	9	40	59
5% mode choice deduction				-32	-2	0	-2	-3
20% residential internal capture				-128	-10	-2	-8	-12
FINAL NET PROJECT TRIPS				481	36	7	30	45
TAZ 7 (LACY DISTRICT) TRIP GENERATION:								
Single Family Housing	12	210	DU	115	9	2	7	12
Multi Family Housing	65	230	DU	381	29	5	24	34
Retail	-7	820	TSF	-301	-7	-4	-3	-26
Industrial	0	110	TSF	0	0	0	0	0
Commercial	0	710	TSF	0	0	0	0	0
Civic	3	730	TSF	207	18	15	3	4
TAZ 7 NET PROJECT TOTAL				402	48	17	31	23
5% mode choice deduction				-20	-2	-1	-2	-1
20% residential internal capture				-99	-8	-1	-6	-9
FINAL NET PROJECT TRIPS				283	38	15	23	13

Table 6-3 Project Trip Generation by Block (cont)

Land Use	Quan- tity	ITE Code	Unit	Daily	AM Peak Hour		PM Peak Hour	
					Total	In	Out	Total	In	Out
TAZ 8 (LOGAN DISTRICT) TRIP GENERATION:								
Single Family Housing	30	210	DU	287	23	6	17	30
Multi Family Housing	89	230	DU	522	39	6	33	46
Retail	0	820	TSF	0	0	0	0	0
Industrial	-131	110	TSF	-913	-121	-106	-14	-128
Commercial	0	710	TSF	0	0	0	0	0
Civic	0	730	TSF	0	0	0	0	0
TAZ 8 NET PROJECT TOTAL				-104	-59	-94	35	-52
5% mode choice deduction				5	3	-5	-2	3
20% residential internal capture				-162	-12	-2	-10	-15
FINAL NET PROJECT TRIPS				-261	-68	-101	24	-65
TAZ 9 (LACY DISTRICT) TRIP GENERATION:								
Single Family Housing	72	210	DU	689	54	14	40	73
Multi Family Housing	406	230	DU	2,379	179	28	150	211
Retail	5	820	TSF	215	5	3	2	19
Industrial	-153	110	TSF	-1,066	-141	-124	-17	-150
Commercial	-17	710	TSF	-187	-17	-15	-2	-17
Civic	-24	730	TSF	-1,654	-141	-119	-23	-29
TAZ 9 NET PROJECT TOTAL				375	-61	-212	151	107
5% mode choice deduction				-19	3	-11	-8	-5
20% residential internal capture				-614	-47	-8	-38	-57
FINAL NET PROJECT TRIPS				-257	-105	-231	105	45
TAZ 10 (1ST STREET DISTRICT) TRIP GENERATION:								
Single Family Housing	30	210	DU	287	23	6	17	30
Multi Family Housing	274	230	DU	1,606	121	19	101	142
Retail	62	820	TSF	2,662	64	39	25	233
Industrial	-168	110	TSF	-1,171	-155	-136	-18	-165
Commercial	0	710	TSF	0	0	0	0	0
Civic	0	730	TSF	0	0	0	0	0
TAZ 10 NET PROJECT TOTAL				3,384	52	-72	125	241
5% mode choice deduction				-169	-3	-4	-6	-12
20% residential internal capture				-379	-29	-5	-24	-35
FINAL NET PROJECT TRIPS				2,836	21	-81	95	194

Table 6-3 Project Trip Generation by Block (cont)

Land Use	Quantity	ITE Code	Unit	Daily	AM Peak Hour		PM Peak Hour			
					Total	In	Out	Total	In	Out
TAZ 11 (LOGAN DISTRICT) TRIP GENERATION:										
Single Family Housing	125	210	DU	1,196	94	24	70	126	80	46
Multi Family Housing	373	230	DU	2,186	164	26	138	194	131	63
Retail	35	820	TSF	1,503	36	22	14	131	63	68
Industrial	-145	110	TSF	-1,011	-133	-117	-16	-142	-17	-125
Commercial	0	710	TSF	0	0	0	0	0	0	0
Civic	0	730	TSF	0	0	0	0	0	0	0
TAZ 11 NET PROJECT TOTAL				3,874	161	-46	206	309	256	53
5% mode choice deduction				-194	-8	-2	-10	-15	-13	-3
20% residential internal capture				-676	-52	-10	-42	-64	-42	-22
FINAL NET PROJECT TRIPS				3,004	101	-58	154	230	201	29
TAZ 12 (RAILROAD DISTRICT) TRIP GENERATION:										
Single Family Housing	0	210	DU	0	0	0	0	0	0	0
Multi Family Housing	937	230	DU	5,491	412	66	347	487	328	159
High Rising Tower	402	222	DU	1,688	125	32	92	141	84	56
Retail	140	820	TSF	6,012	144	88	56	525	252	273
Industrial	-325	110	TSF	-2,265	-299	-263	-36	-319	-39	-280
Commercial	-7	710	TSF	-77	-7	-6	-1	-7	-1	-6
Civic	0	730	TSF	0	0	0	0	0	0	0
TAZ 12 NET PROJECT TOTAL				10,849	375	-83	459	827	624	203
5% mode choice deduction				-542	-19	-4	-23	-41	-31	-10
20% residential internal capture				-1,436	-107	-20	-88	-126	-82	-43
FINAL NET PROJECT TRIPS				8,870	249	-107	348	660	510	150
TAZ 13 (1ST STREET DISTRICT) TRIP GENERATION:										
Single Family Housing	10	210	DU	96	8	2	6	10	6	4
Multi Family Housing	94	230	DU	551	41	7	35	49	33	16
Retail	-13	820	TSF	-558	-13	-8	-5	-49	-23	-25
Industrial	-16	110	TSF	-112	-15	-13	-2	-16	-2	-14
Commercial	0	710	TSF	0	0	0	0	0	0	0
Civic	0	730	TSF	0	0	0	0	0	0	0
TAZ 13 NET PROJECT TOTAL				-23	21	-13	33	-5	14	-19
5% mode choice deduction				1	-1	-1	-2	0	-1	1
20% residential internal capture				-129	-10	-2	-8	-12	-8	-4
FINAL NET PROJECT TRIPS				-151	10	-15	24	-17	5	-22

As indicated in Table 6-2, the final net project consists of a total of 294 dwelling units of single family housing, 3,104 dwelling units of multi-family housing, 402 high-rise tower dwelling units, and 351,000 square feet of retail uses. The project will also remove 990,000 square feet of industrial uses (938,000 square feet in the study area), 124,000 square feet of commercial uses, and 21,000 square feet of civic uses. The land use data reflects the net growth of the potential development, subtracting the existing land uses to be displaced.

The proportion of the residential units for single family housing and multi-family housing is split based on the data provided by Moule & Polyzoides as following:

District	Single-family	Multi-family	High-Rise Tower
Downtown District	0	100%	0%
Lacy District	15%	85%	0%
1st Street District	10%	90%	0%
Logan District	25%	75%	0%
Rail Station District	0%	70%	30%

As indicated in Table 6-2, the project is proposed to generate approximately 22,109 additional trip-ends per day with 526 vehicles per hour net increase during the AM peak hour and 1,726 vehicles per hour net increase during the PM peak hour. It also shows that during AM peak hour, there is a decrease of 574 vehicles traveling in and an increase of 1,051 vehicles traveling out of the specific plan area. During the PM peak hour, there is an increase of 1,479 vehicles entering and 247 vehicles leaving the area. The in and out travel characteristic is related to the fact that more residential units will replace the existing industrial and commercial uses for the proposed project. Residential trips tend to have the characteristic of traveling out in the AM peak hour and returning during the PM peak hour.

As also indicated in Table 6-2, a 5% mode choice reduction has been applied for the final trips. This is based on the previous discussion of the circulation changes in City of Santa Ana and the review of the Regional Transportation Center Metrolink Extension Study. The project team agreed that the Renaissance Specific Plan will benefit from the transit improvement plans for the long range conditions. Transit-oriented developments have been shown to have lower vehicle trip-generation rates than non-transit-oriented developments. This traffic study accounts for the lower trip generating characteristics of these developments by applying this reduction factor to the final trips. The 5% reduction considers both local and regional transit modal split credit.

In addition, due to the mixed-use nature of the project, internal capture credit has been applied to the project trip generation. Table 6-2 includes 20% internal capture reduction for the residential trips. These rates are derived from ITE guidelines published in the ITE Trip Generation Handbook, 8th Edition. KOA considers 20% as a reasonable internal capture rate for residential trips based on our past

Project Related Traffic

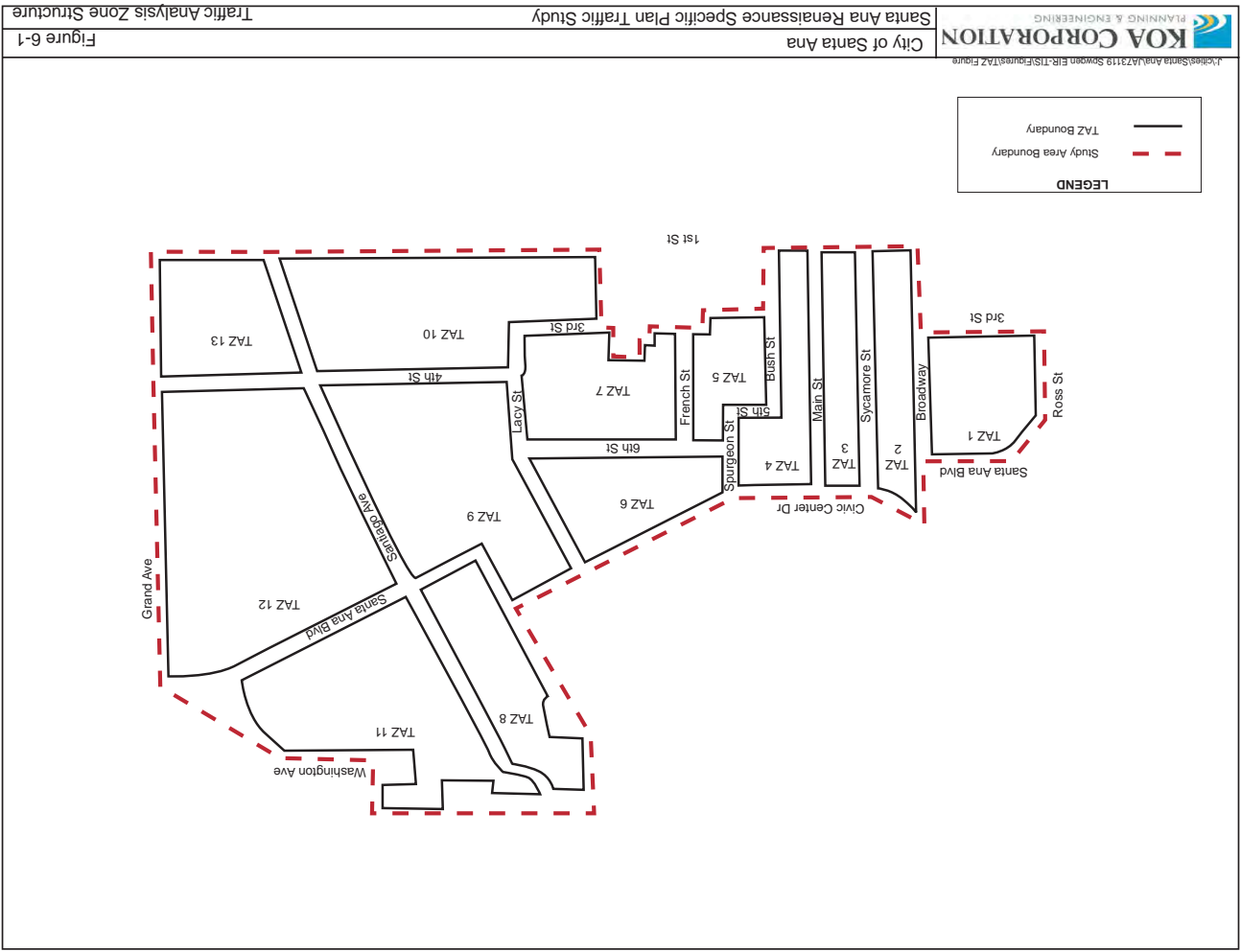
experience with other studies and the size of this study area. City staff also concurs with the trip generation methodologies per verbal and written communications.

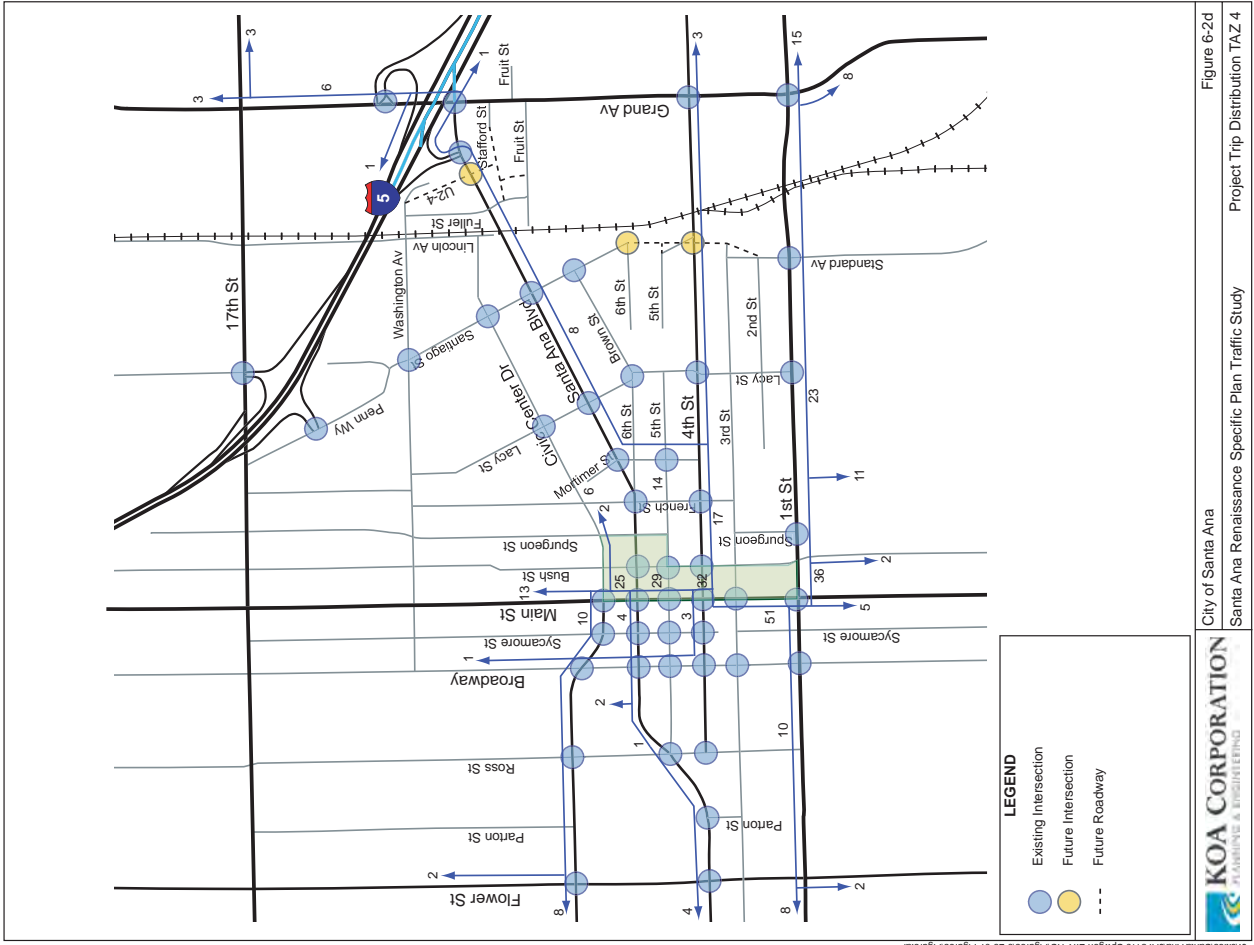
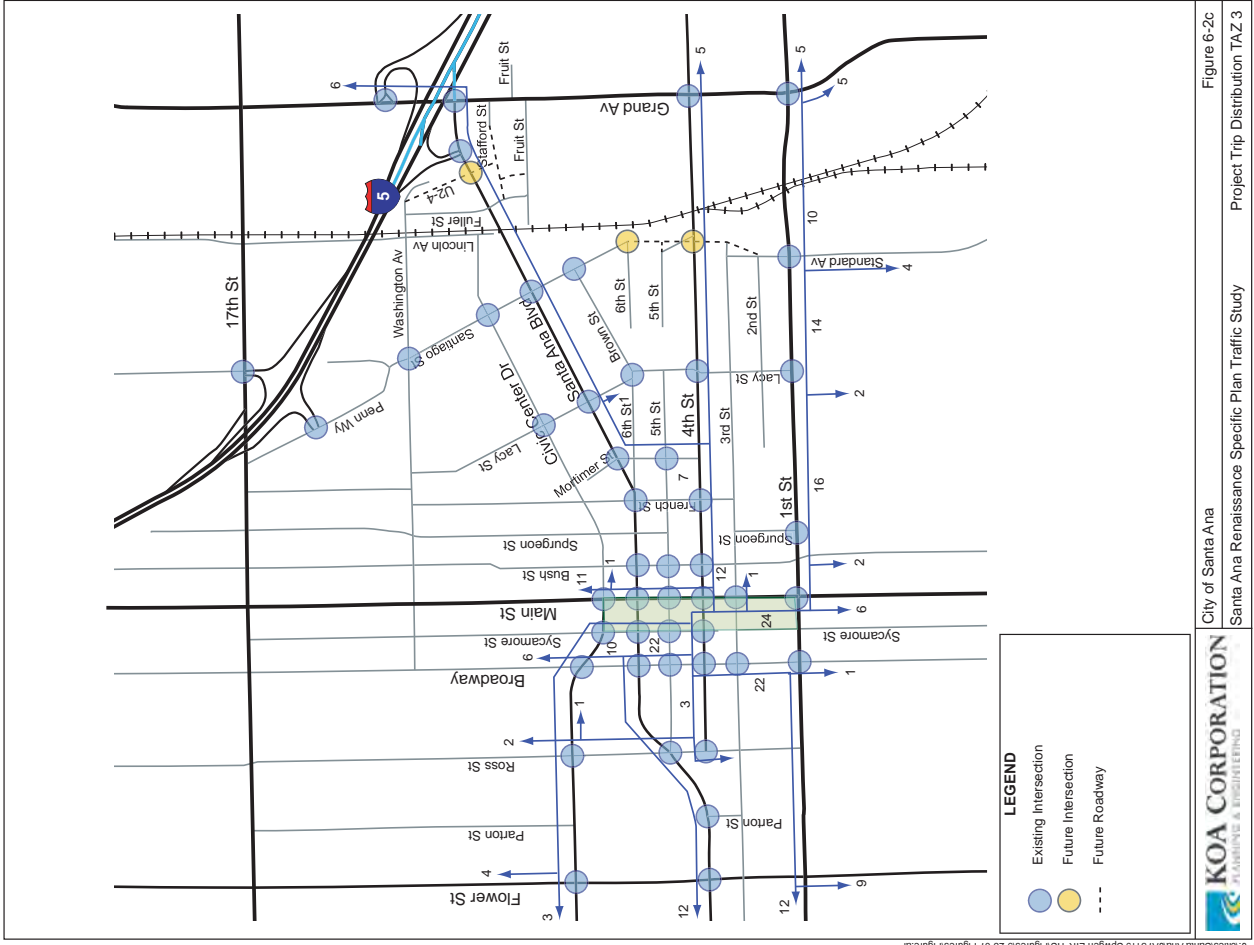
6.2 Project Trip Distribution and Traffic Volumes

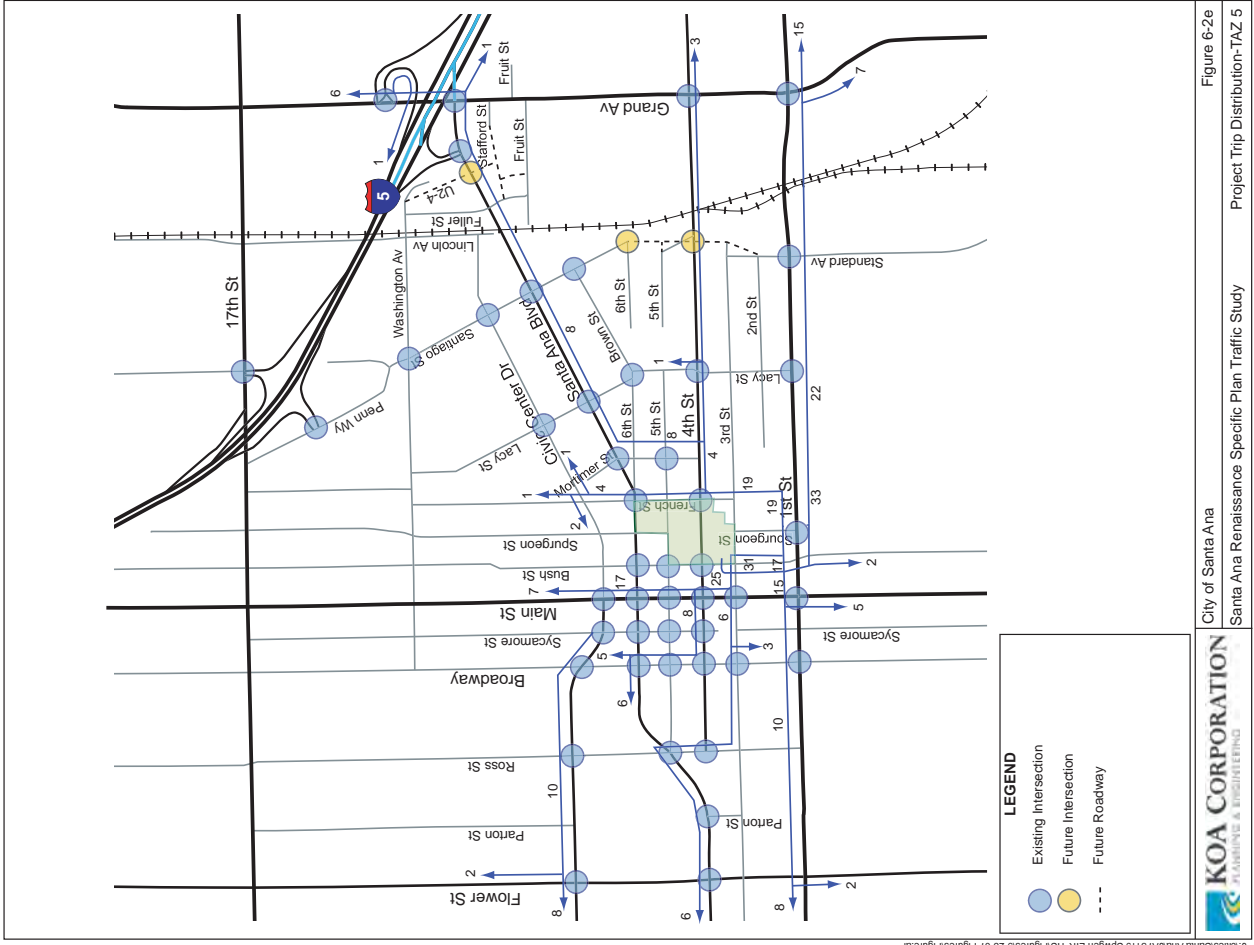
The project trip distribution and assignment process represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of surrounding uses, and the proximity to the regional freeway system.

The Orange County Transportation Analysis Model (OCTAM 3.2) was used to evaluate the distribution and likely travel routes of the project traffic. A series of select link (trip distribution) analyses were performed using the OCTAM 3.2 model 2030 horizon year scenario. Figure 6-2a through Figure 6-2m present the project trip distribution patterns for each TAZ, respectively.

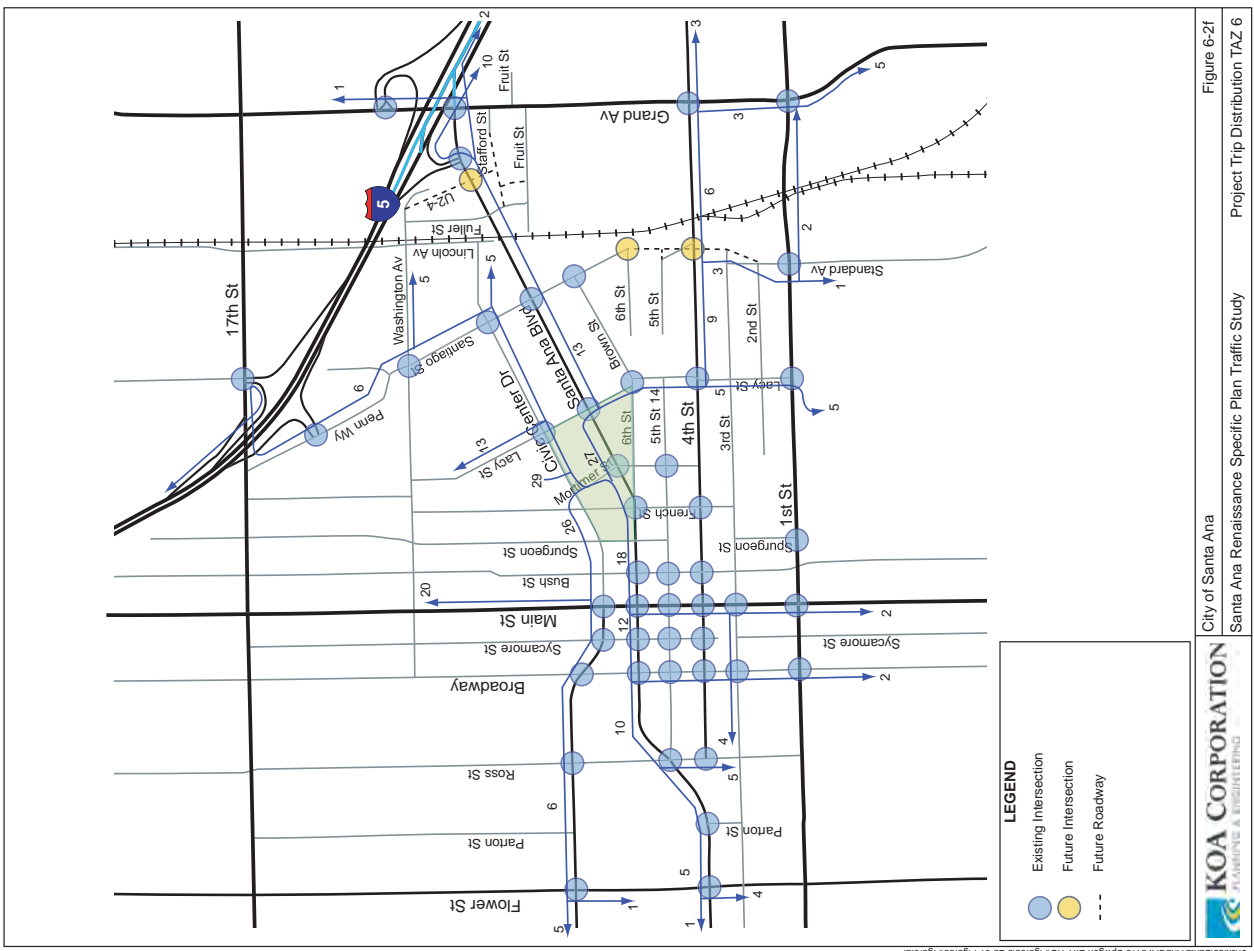
The project only traffic forecasts have been developed by applying the trip generation, distribution, and traffic assignment calculations. Figure 6-3a through Figure 6-3e present the project only AM peak hour project only trips, while Figure 6-3f through Figure 6-3j present the 2035 PM peak hour project only trips.





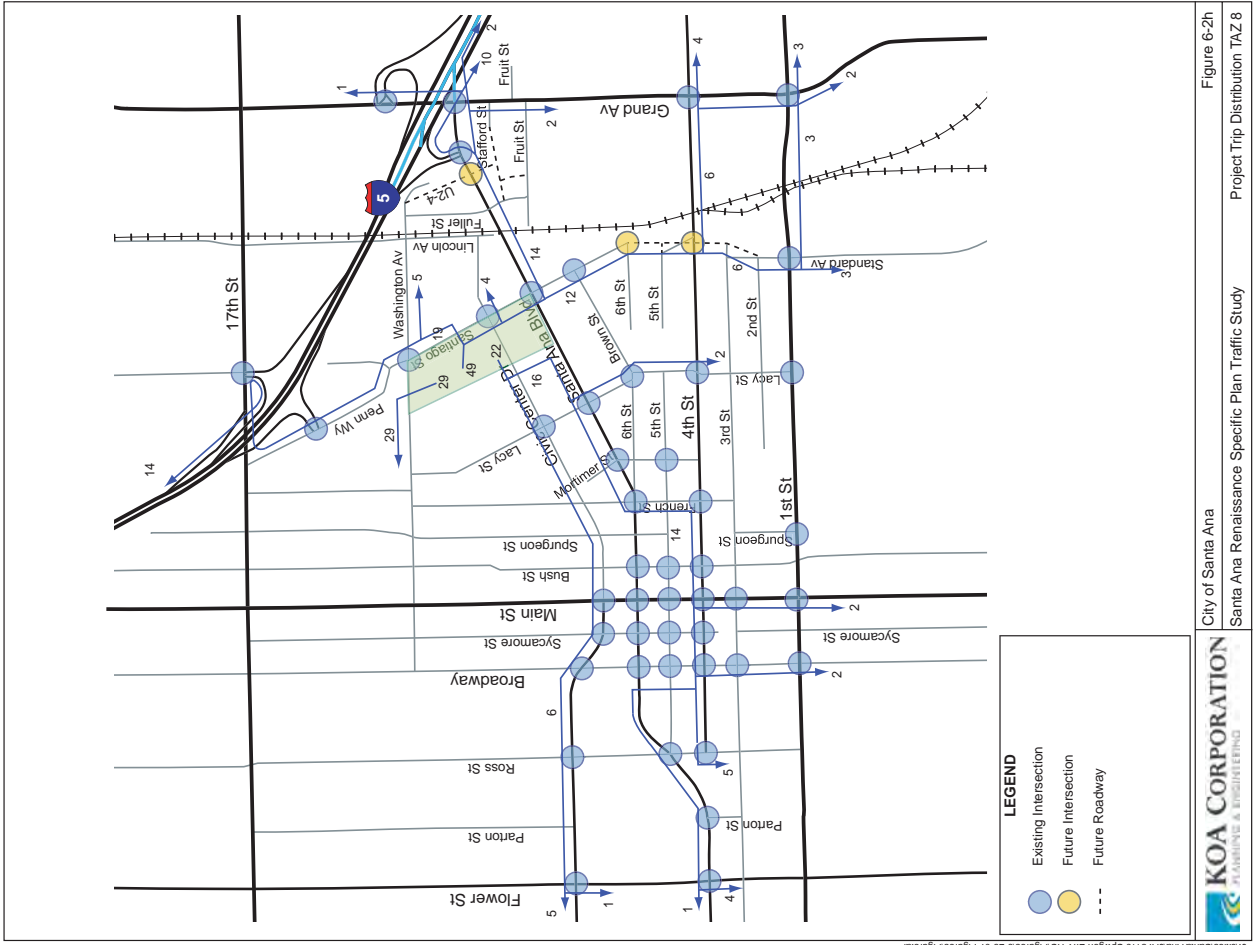
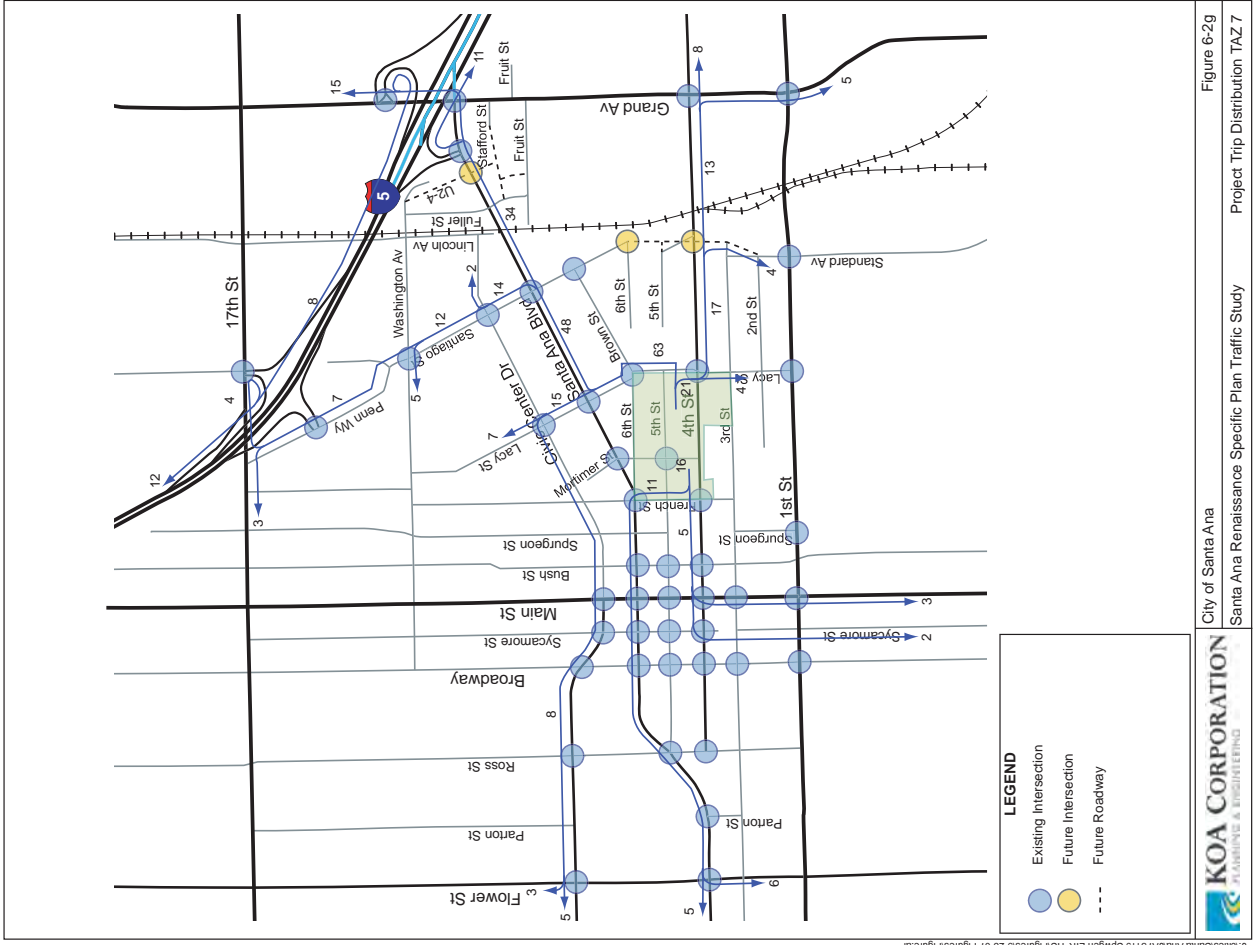


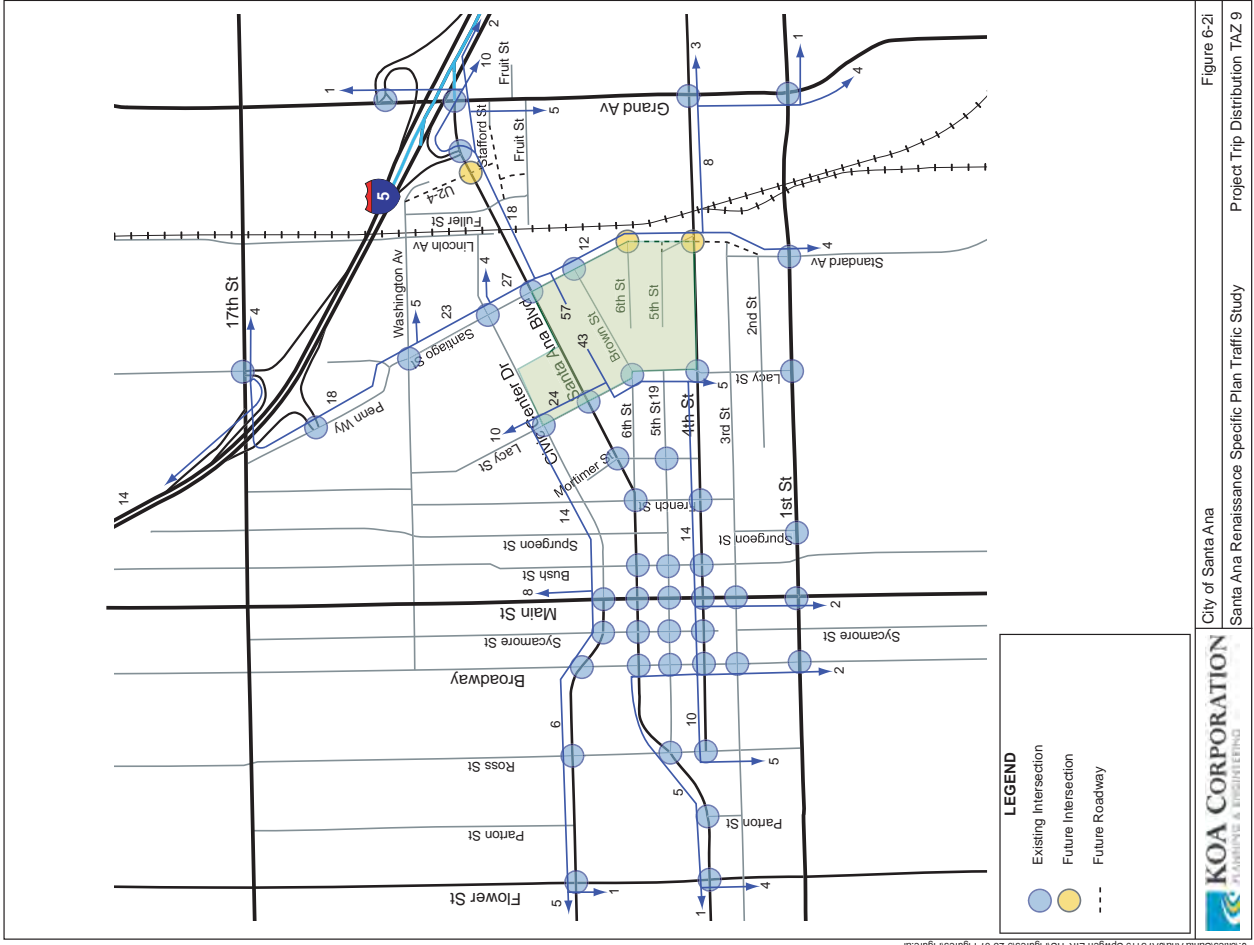
City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study
 Project Trip Distribution-TAZ 5
 Figure 6-2e



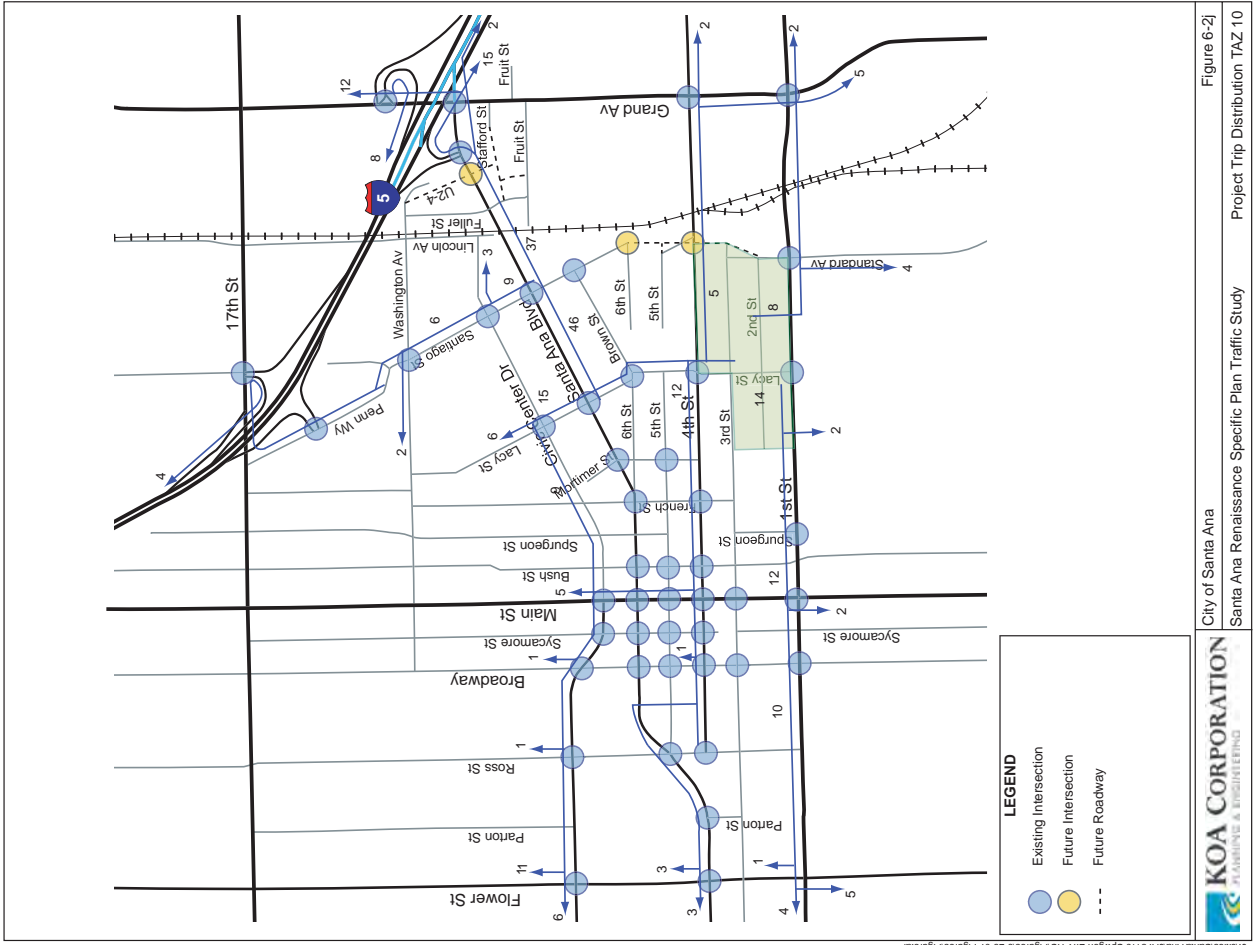
City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study
 Project Trip Distribution TAZ 6
 Figure 6-2f



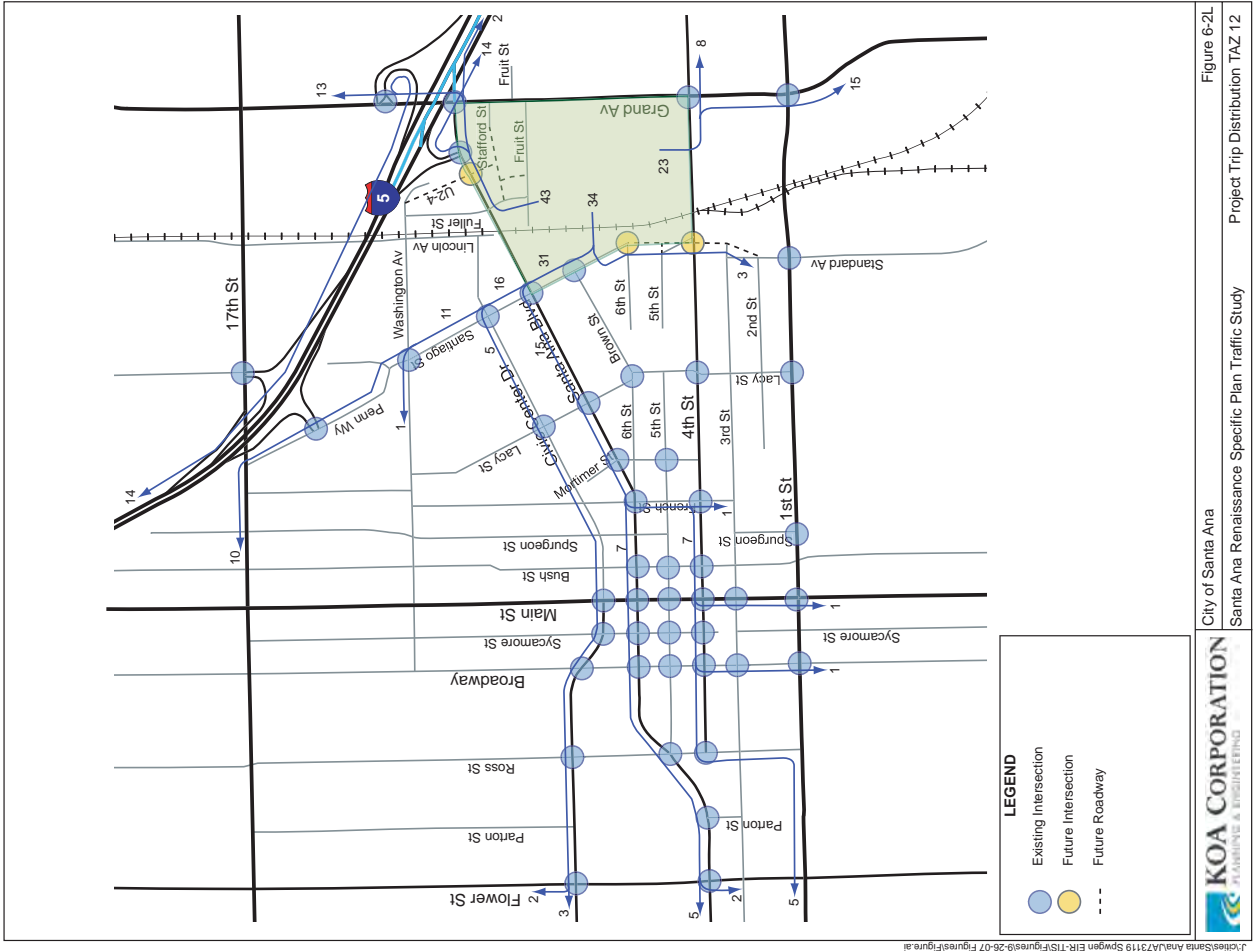
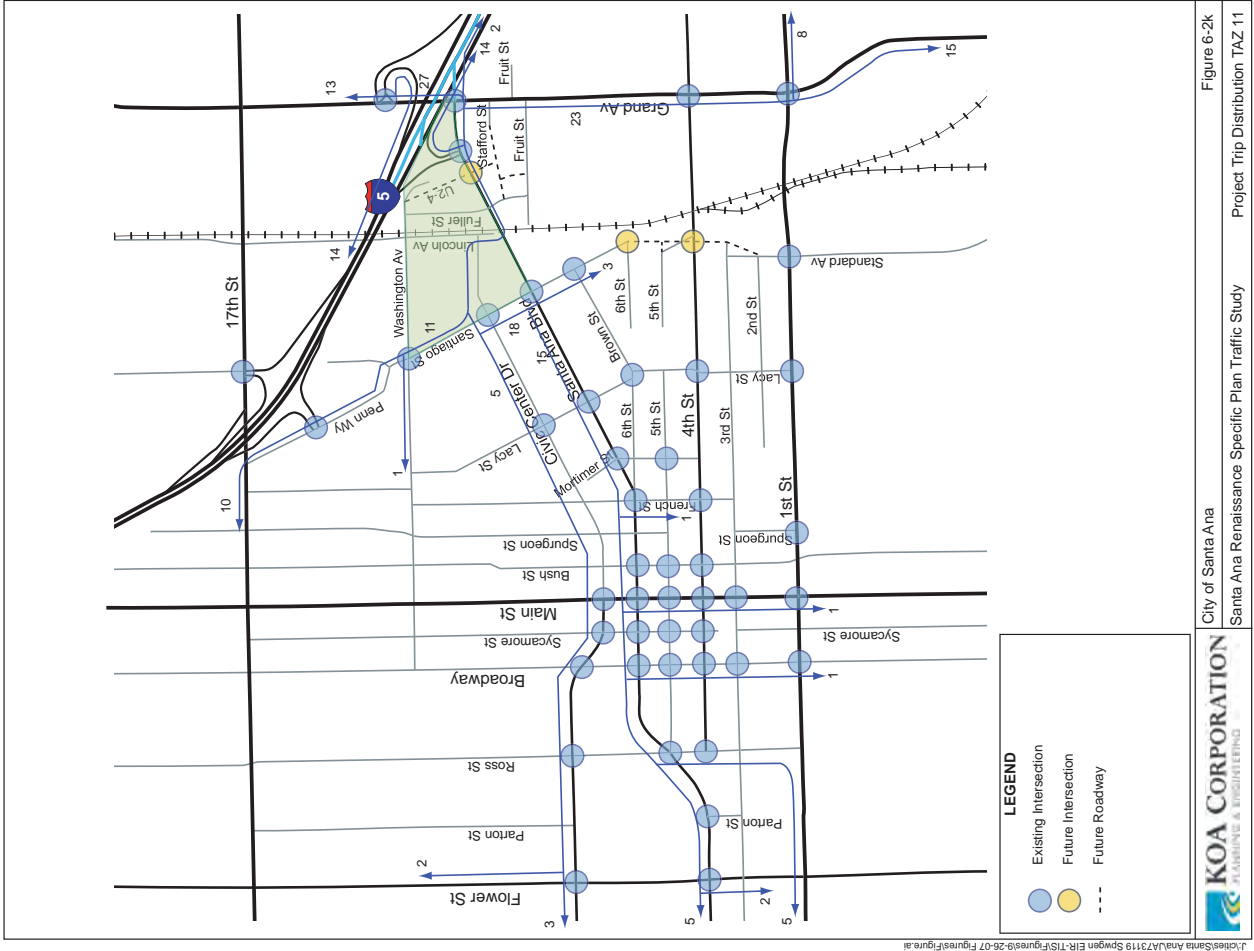




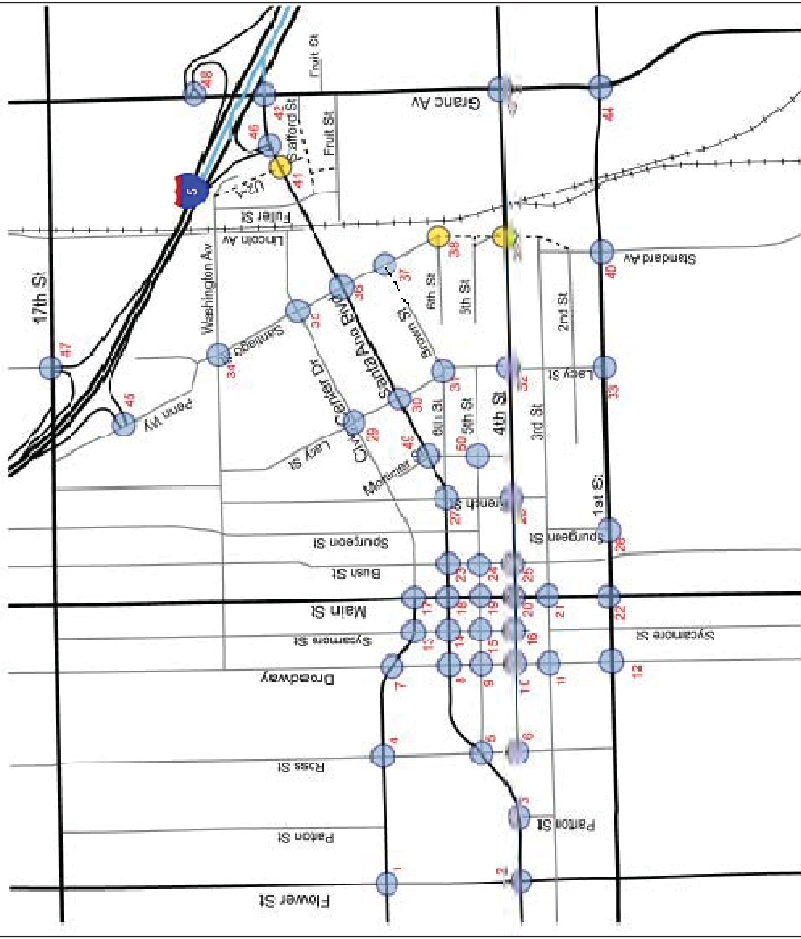
City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study
 Project Trip Distribution TAZ 9
 Figure 6-21



City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study
 Project Trip Distribution TAZ 10
 Figure 6-22



11		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	11	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	12		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	12	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	13		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	13	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	14		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	14	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	15		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	15	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>
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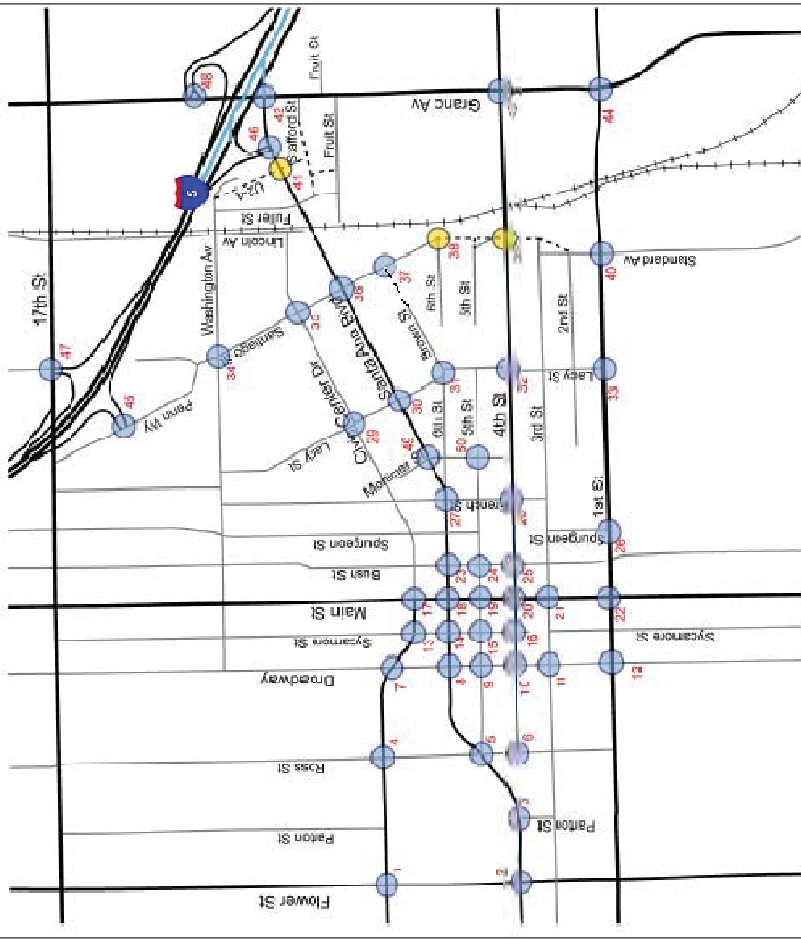
16		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	16	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	17		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	17	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	18		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	18	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	19		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	19	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	20		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	20	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>
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KOA CORPORATION
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City of Santa Ana
Main St./Civic Center Dr.
Main St./Santa Ana Blvd.
Main St./5th St.
Main St./4th St.

Figure C-3b
Santa Ana Renaissance Specific Plan Traffic Study Project Only AM Peak Hour Volumes

21		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	21	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	22		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	22	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	23		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	23	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	24		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	24	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	25		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	25	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>
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26		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	26	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	27		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	27	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	28		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	28	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	29		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	29	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	30		<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>	30	<p>SB</p> <p>WB</p> <p>EB</p> <p>NB</p>
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KOA CORPORATION
PLANNING & ENGINEERING

City of Santa Ana
Spurgeon St./1st St.
French St./Santa Ana Blvd.
French St./4th St.
Lacy St./Civic Center Dr.
Lacy St./Santa Ana Blvd.

Figure C-3c
Santa Ana Renaissance Specific Plan Traffic Study Project Only AM Peak Hour Volumes

7. ANTICIPATED PROJECT BUILDOUT (2030) WITH PROJECT CONDITIONS

This section documents the future (2030) traffic conditions with the addition of the Renaissance project traffic to the surrounding street system. To forecast the anticipated project buildout traffic conditions for the year 2030, the 2030 Without Project peak hour background traffic volumes shown in Figures 4-2a through Figure 4-2j were increased by adding the project-related traffic volumes shown in Figure 6-2a through Figure 6-2j.

7.1 Anticipated Project Buildout (2030) With Project Intersection Conditions

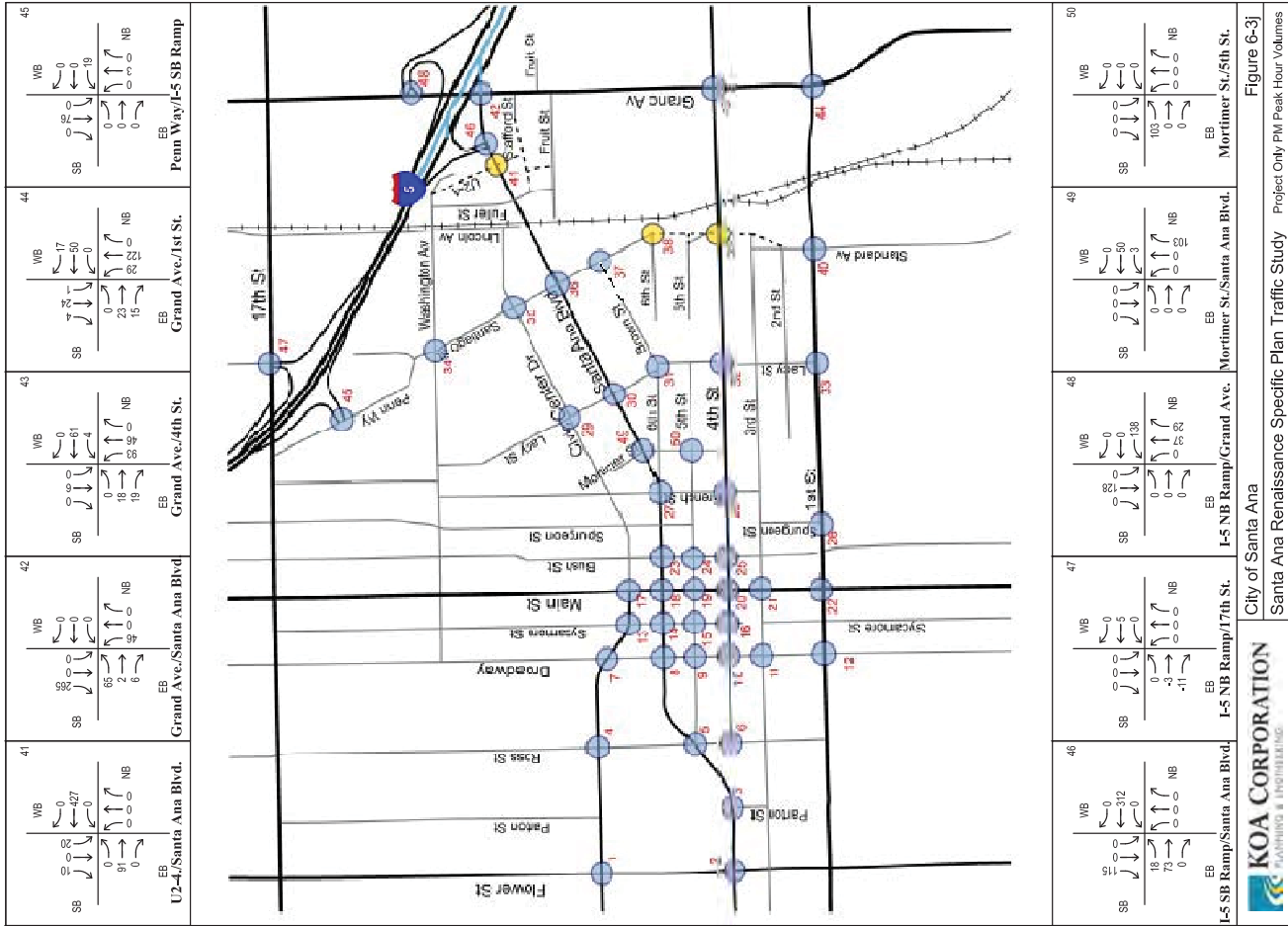
Figure 7-1a through Figure 7-1e illustrate the 2030 With Project AM peak hour traffic volumes while Figure 7-1f through Figure 7-1j illustrate the 2030 With Project PM peak hour traffic volumes for 2030 Without Project conditions. Tables 7-1 and 7-2 illustrate the 2030 with project intersection level of service conditions. As shown in the table, all intersections are expected to operate at Level of Service D or better under the 2030 with project condition for the year 2030 except the following intersections. Appendix H includes the analysis worksheets for all intersections under 2030 With Project conditions.

- Main Street at 1st Street (Signalized)
- Grand Avenue at Santa Ana Boulevard (Signalized)
- Lacy Street at Civic Center Drive (Two-way stop control)
- Lacy Street at Santa Ana Boulevard (Two-way stop control)
- Lacy Street at 1st Street (Two-way stop control)
- Santiago Street at Civic Center Drive (Two-way stop control)
- Santiago Street at 4th Street (Two-way stop control)
- Mortimer Street at 5th Street (Two-way stop control)
- U2-4 Street at Santa Ana Boulevard (Two-way stop control)

Compared with 2030 Without Project conditions, seven additional intersections operate at unacceptable levels of service:

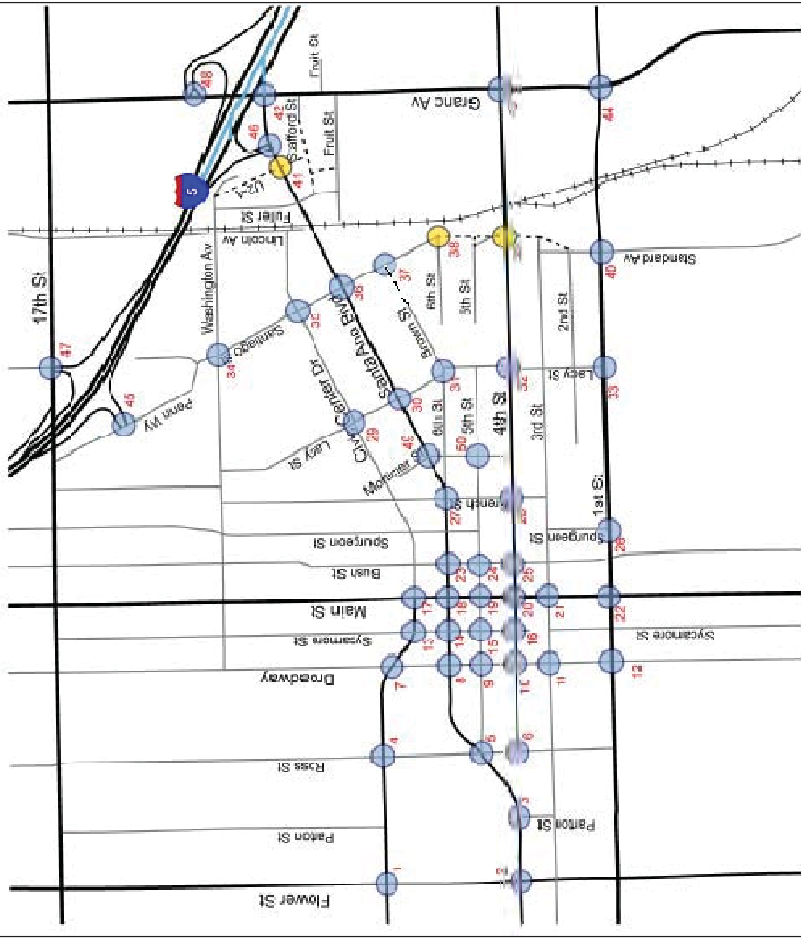
- Main Street at 1st Street
- Lacy Street at Civic Center Drive
- U2-4 Street at Santa Ana Boulevard
- Santiago Street at Civic Center Drive
- Santiago Street at 4th Street
- Mortimer Street at 5th Street
- U2-4 Street at Santa Ana Boulevard

Intersections warranting a signal under the future without project conditions include Lacy Street at Santa Ana Boulevard, Lacy Street at 1st Street, and Santiago Street at 4th Street.



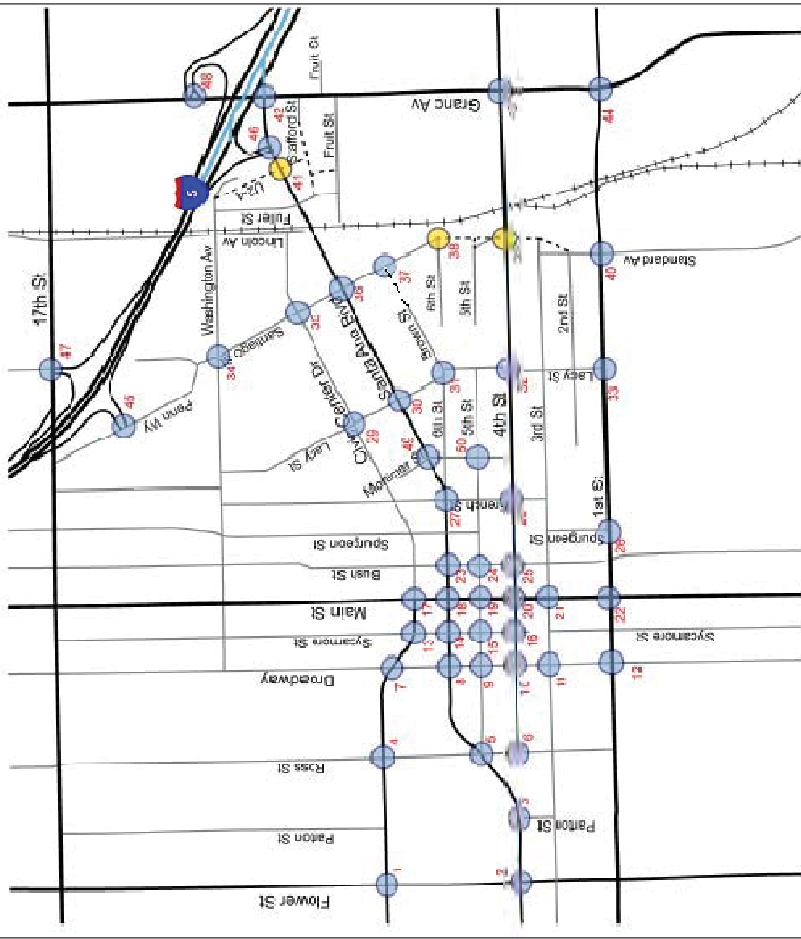
City of Santa Ana
Santa Ana Renaissance Specific Plan Traffic Study Project Only, PM Peak Hour Volumes
Figure 6-3j

1		<p>WB 56 11 33 101</p> <p>SB 133 531 158</p> <p>NB 991 883 291</p> <p>EB 0 0 0</p>	<p>WB 119 332 82</p> <p>SB 88 484 153</p> <p>NB 39 56 85</p> <p>EB 0 0 0</p>	<p>WB 84 17 554 75</p> <p>SB 31 578 114</p> <p>NB 14 22 114</p> <p>EB 0 0 0</p>	<p>WB 51 73 762 66</p> <p>SB 48 578 97</p> <p>NB 15 15 15</p> <p>EB 0 0 0</p>	<p>WB 101 62 447 209</p> <p>SB 76 557 23</p> <p>NB 28 23 23</p> <p>EB 0 0 0</p>	<p>Ross St./Santa Ana Blvd.</p>
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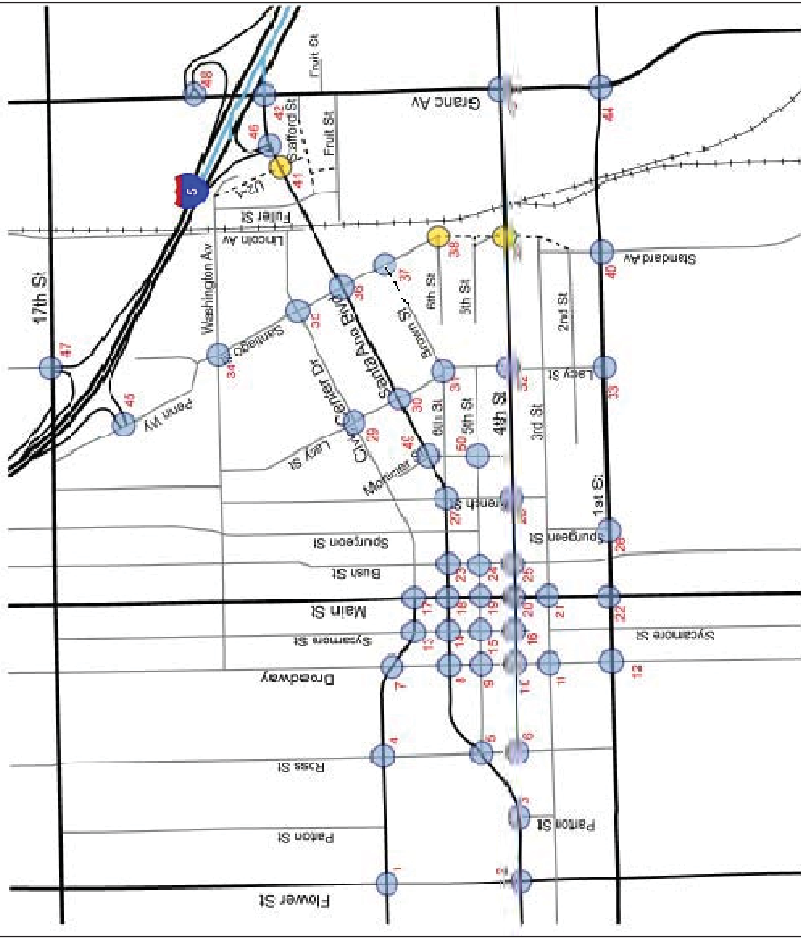
2		<p>WB 119 332 82</p> <p>SB 88 484 153</p> <p>NB 39 56 85</p> <p>EB 0 0 0</p>	<p>WB 84 17 554 75</p> <p>SB 31 578 114</p> <p>NB 14 22 114</p> <p>EB 0 0 0</p>	<p>WB 51 73 762 66</p> <p>SB 48 578 97</p> <p>NB 15 15 15</p> <p>EB 0 0 0</p>	<p>WB 101 62 447 209</p> <p>SB 76 557 23</p> <p>NB 28 23 23</p> <p>EB 0 0 0</p>	<p>Flower St/Santa Ana Blvd.</p>
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11		<p>WB 18 37 10</p> <p>SB 12 51 18</p> <p>NB 37 24 10</p> <p>EB 0 0 0</p>	<p>WB 63 33 140</p> <p>SB 197 1343 69</p> <p>NB 102 56 140</p> <p>EB 0 0 0</p>	<p>WB 88 747 29</p> <p>SB 23 421 62</p> <p>NB 88 88 82</p> <p>EB 0 0 0</p>	<p>WB 29 865 69</p> <p>SB 0 754 17</p> <p>NB 0 0 0</p> <p>EB 0 0 0</p>	<p>Broadway/3rd St.</p>
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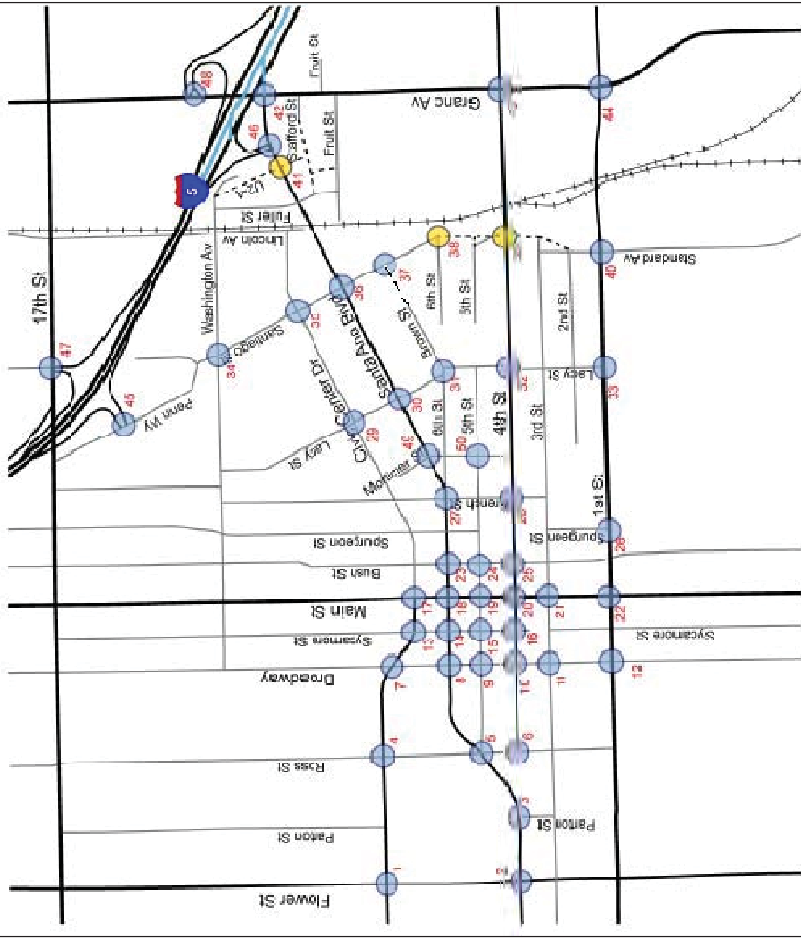
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13		<p>WB 88 747 29</p> <p>SB 23 421 62</p> <p>NB 88 88 82</p> <p>EB 0 0 0</p>	<p>WB 29 865 69</p> <p>SB 0 754 17</p> <p>NB 0 0 0</p> <p>EB 0 0 0</p>	<p>WB 15 865 69</p> <p>SB 0 754 17</p> <p>NB 0 0 0</p> <p>EB 0 0 0</p>	<p>WB 0 0 0</p> <p>SB 0 0 0</p> <p>NB 0 0 0</p> <p>EB 0 0 0</p>	<p>Civic Center Dr./Santa Ana Blvd.</p>
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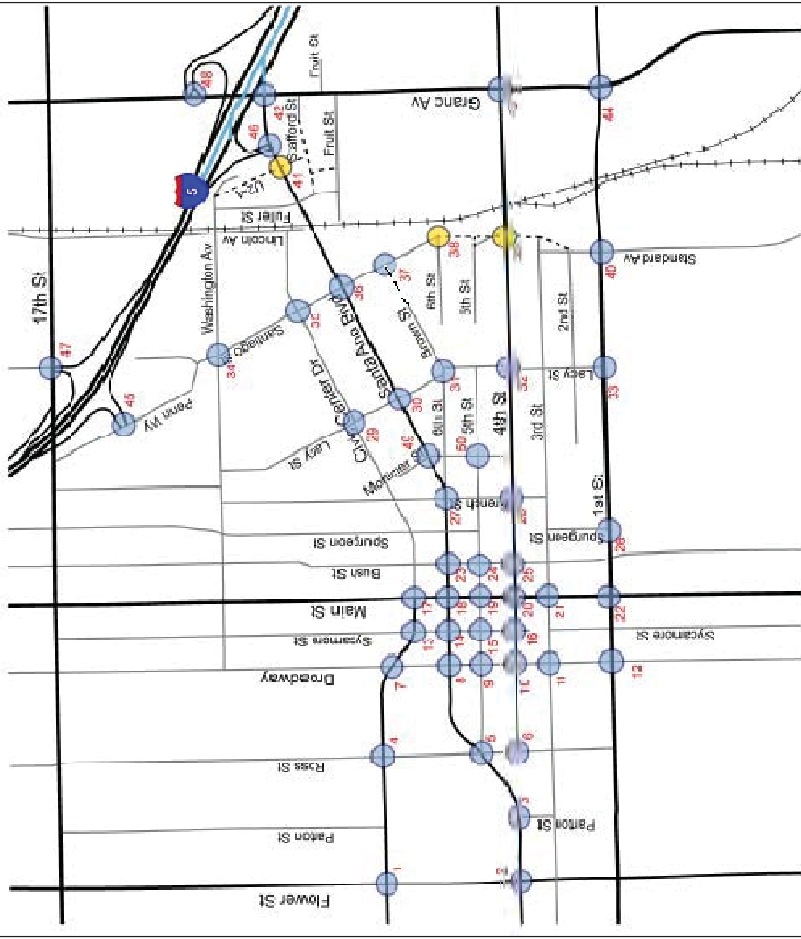
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15		<p>WB 0 0 0</p> <p>SB 0 0 0</p> <p>NB 0 0 0</p> <p>EB 0 0 0</p>	<p>WB 0 0 0</p> <p>SB 0 0 0</p> <p>NB 0 0 0</p> <p>EB 0 0 0</p>	<p>WB 0 0 0</p> <p>SB 0 0 0</p> <p>NB 0 0 0</p> <p>EB 0 0 0</p>	<p>WB 0 0 0</p> <p>SB 0 0 0</p> <p>NB 0 0 0</p> <p>EB 0 0 0</p>	<p>Sycamore St./5th St.</p>
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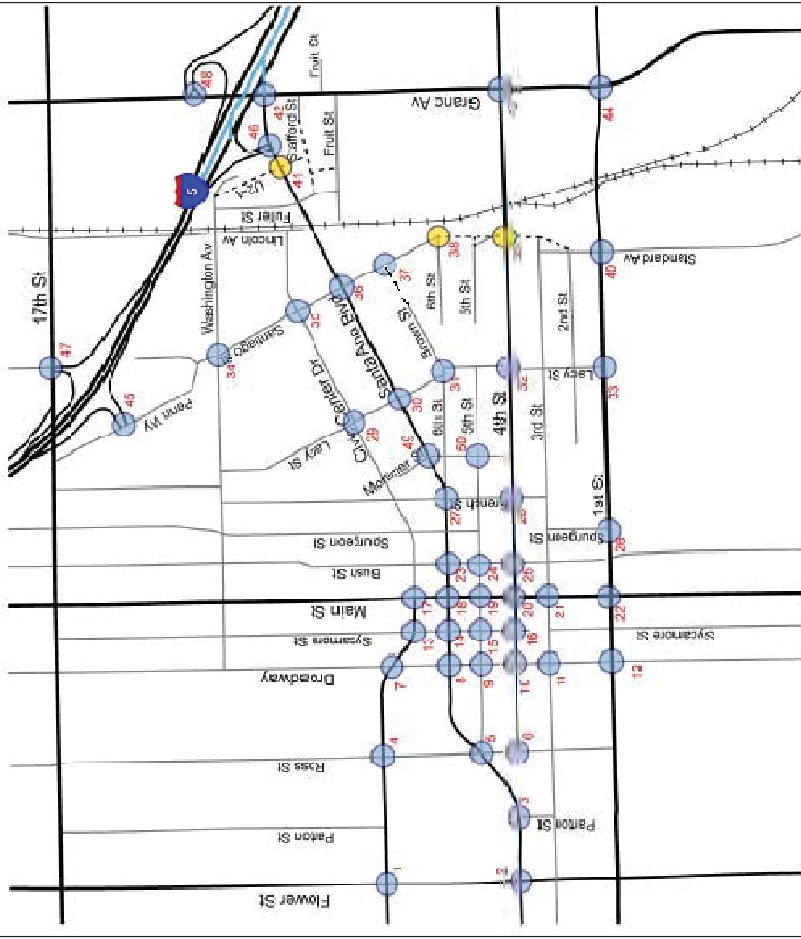
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17		<p>WB 68 66 62</p> <p>SB 62 62 64</p> <p>NB 38 38 38</p> <p>EB 0 0 0</p>	<p>WB 75 85 66</p> <p>SB 0 0 0</p> <p>NB 0 0 0</p> <p>EB 0 0 0</p>	<p>WB 0 0 0</p> <p>SB 0 0 0</p> <p>NB 0 0 0</p> <p>EB 0 0 0</p>	<p>WB 0 0 0</p> <p>SB 0 0 0</p> <p>NB 0 0 0</p> <p>EB 0 0 0</p>	<p>Main St./Civic Center Dr.</p>
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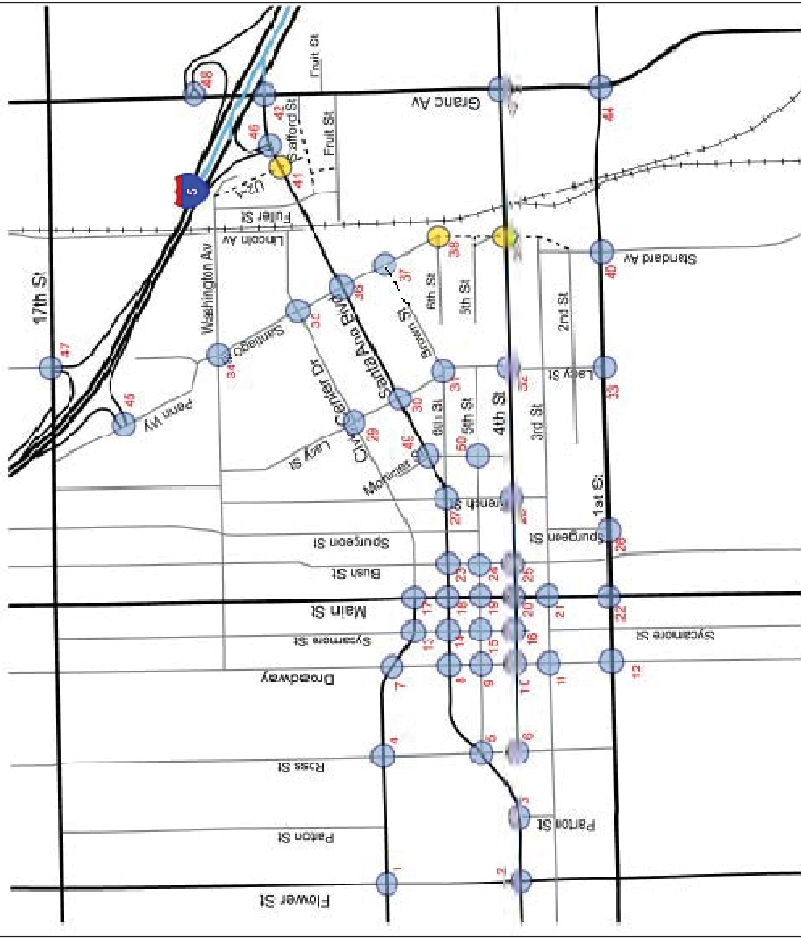
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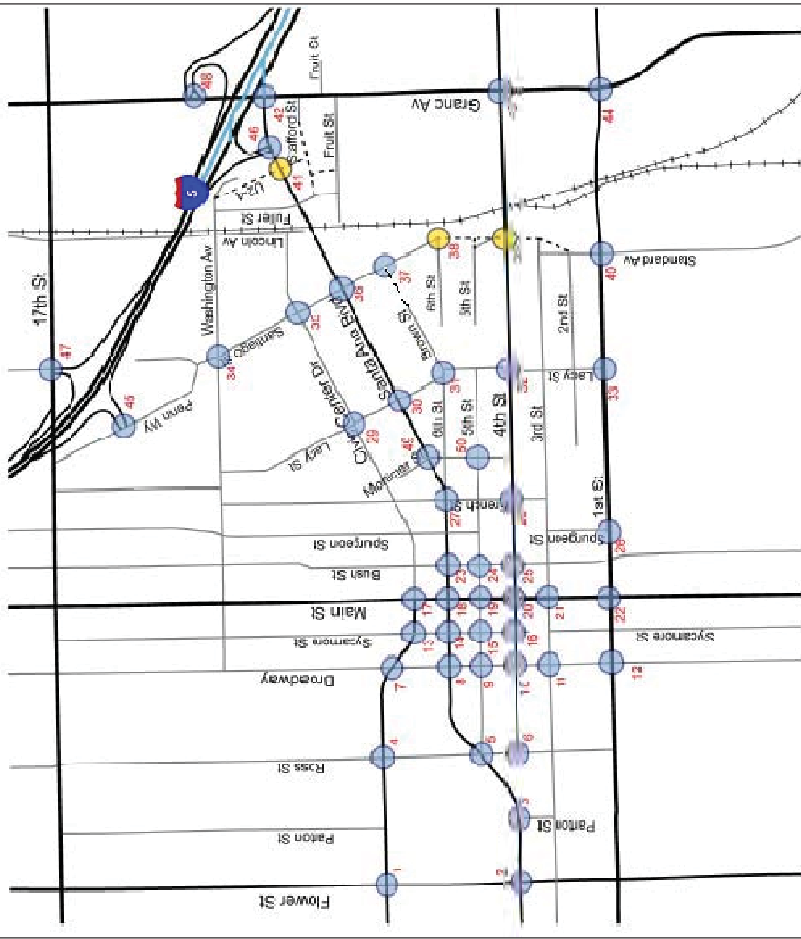
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22	WB 11 0 13	SB 52 51 136	NB 11 13 13	EB 0 0 0	WB 89 720 24	SB 0 0 0	NB 33 33 33	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	Main St./1st St.	Santa Ana Renaissance Specific Plan Traffic Study
23	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 20 189 11	SB 8 101 11	NB 8 11 11	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	Bush St./4th St.	Santa Ana Renaissance Specific Plan Traffic Study
24	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	Bush St./5th St.	Santa Ana Renaissance Specific Plan Traffic Study
25	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	Bush St./Santa Ana Blvd.	Santa Ana Renaissance Specific Plan Traffic Study



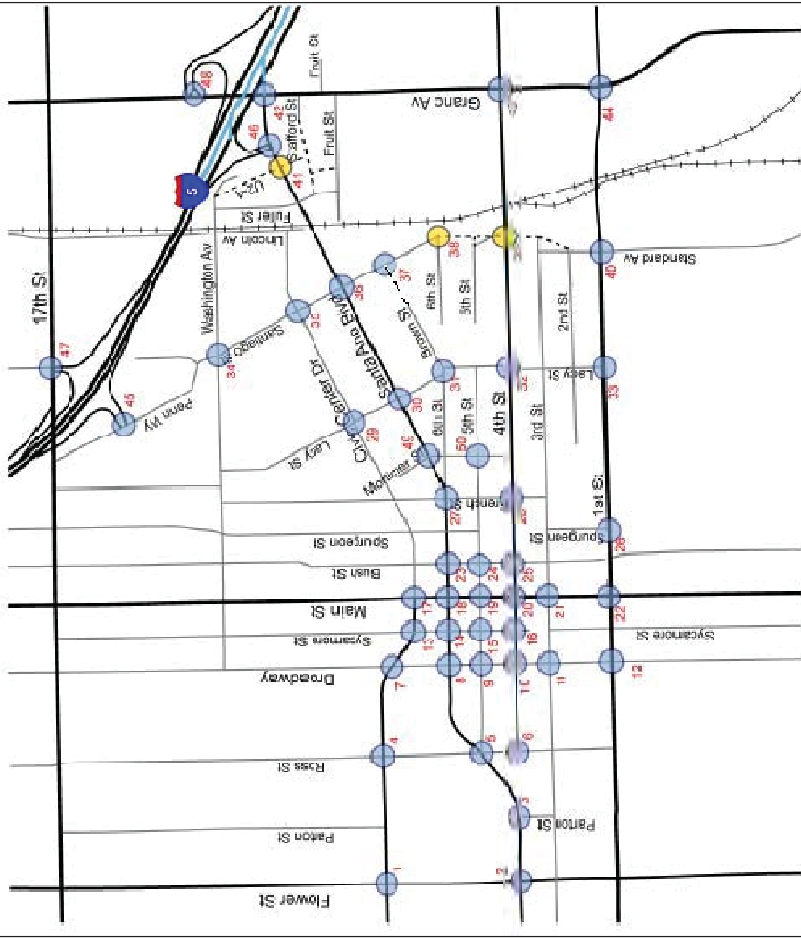
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27	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 49 255 41	SB 19 61 4	NB 4 22 22	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	French St./Santa Ana Blvd.	Santa Ana Renaissance Specific Plan Traffic Study
28	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 155 441	SB 7 382 7	NB 7 22 22	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	Lacy St./Civic Center Dr.	Santa Ana Renaissance Specific Plan Traffic Study
29	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 46 855 5	SB 10 381 10	NB 5 22 22	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	Lacy St./Santa Ana Blvd.	Santa Ana Renaissance Specific Plan Traffic Study
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31	WB 4 18 14	SB 2 7 8	NB 0 0 0	EB 0 0 0	WB 66 449 11	SB 5 309 24	NB 11 18 18	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	Lacy St./6th St.	Santa Ana Renaissance Specific Plan Traffic Study
32	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 24 1012 0	SB 175 1098 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	Lacy St./1st St.	Santa Ana Renaissance Specific Plan Traffic Study
33	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 30 220 114	SB 119 108 41	NB 27 25 25	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	Santiago St./Washington Ave.	Santa Ana Renaissance Specific Plan Traffic Study
34	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	Santiago St./Civic Center Dr.	Santa Ana Renaissance Specific Plan Traffic Study
35	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	Santiago St./Civic Center Dr.	Santa Ana Renaissance Specific Plan Traffic Study



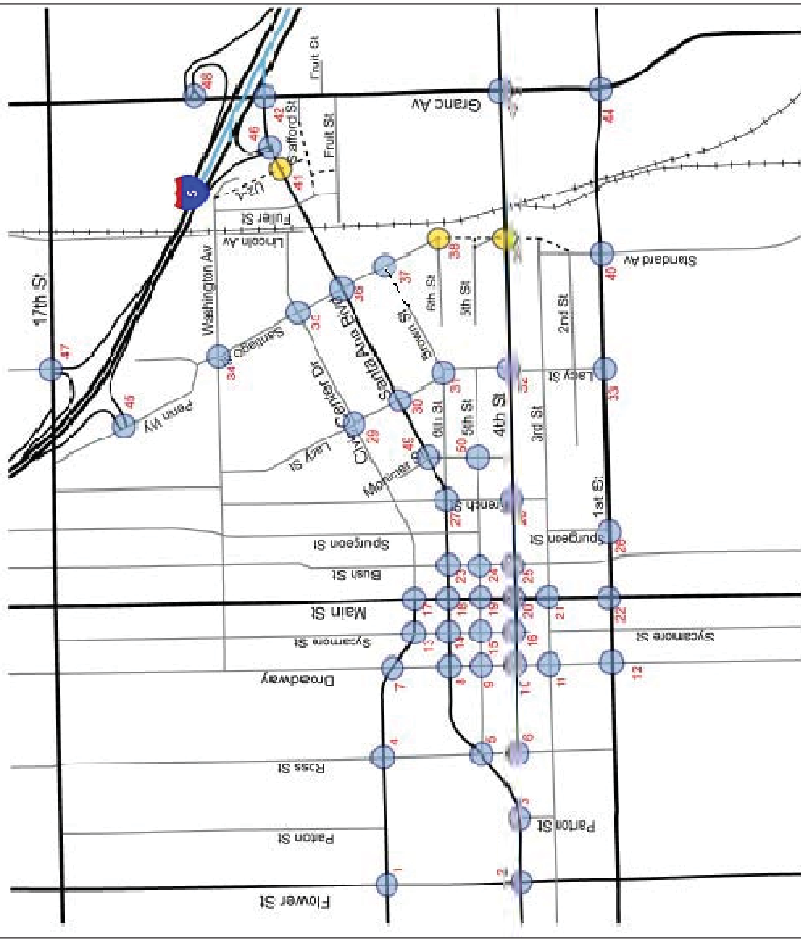
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37	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	Santiago St./Brown St.	Santa Ana Renaissance Specific Plan Traffic Study
38	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	Santiago St./6th St.	Santa Ana Renaissance Specific Plan Traffic Study
39	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	Santiago St./4th St.	Santa Ana Renaissance Specific Plan Traffic Study
40	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	WB 0 0 0	SB 0 0 0	NB 0 0 0	EB 0 0 0	Standard St./1st St.	Santa Ana Renaissance Specific Plan Traffic Study

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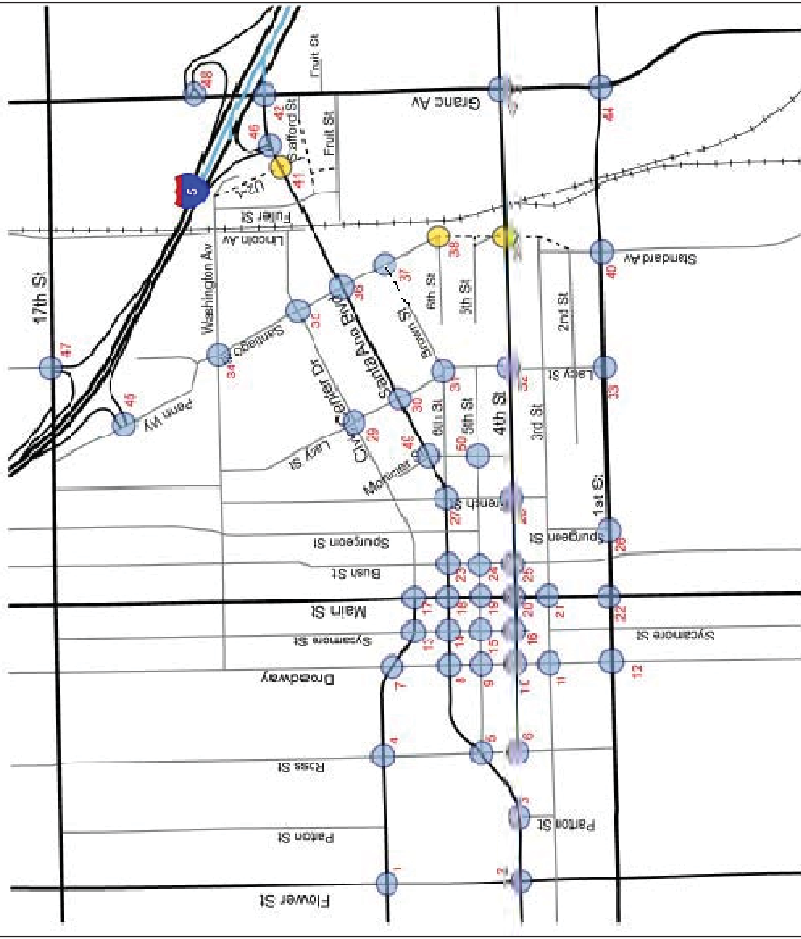
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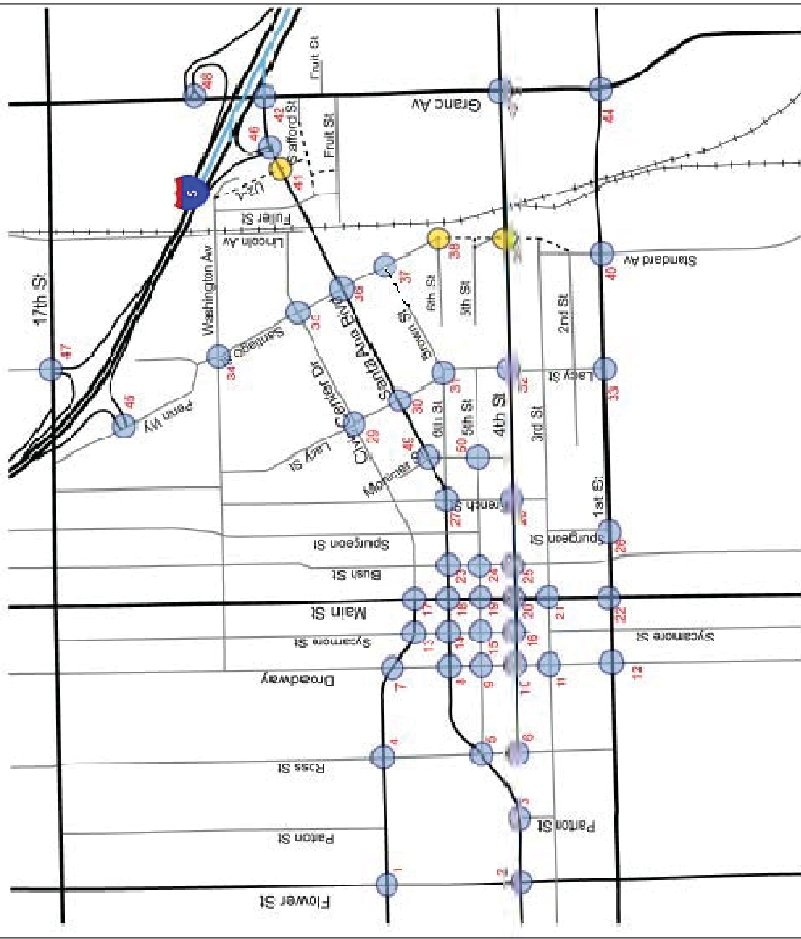
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City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM Peak Hour
KOA CORPORATION
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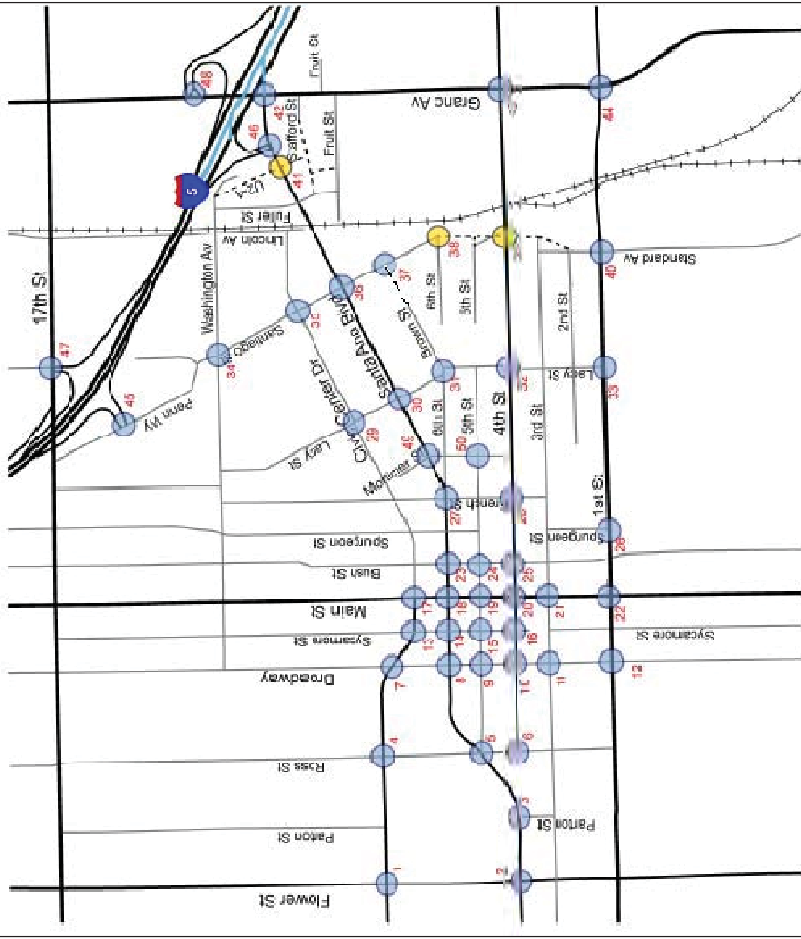
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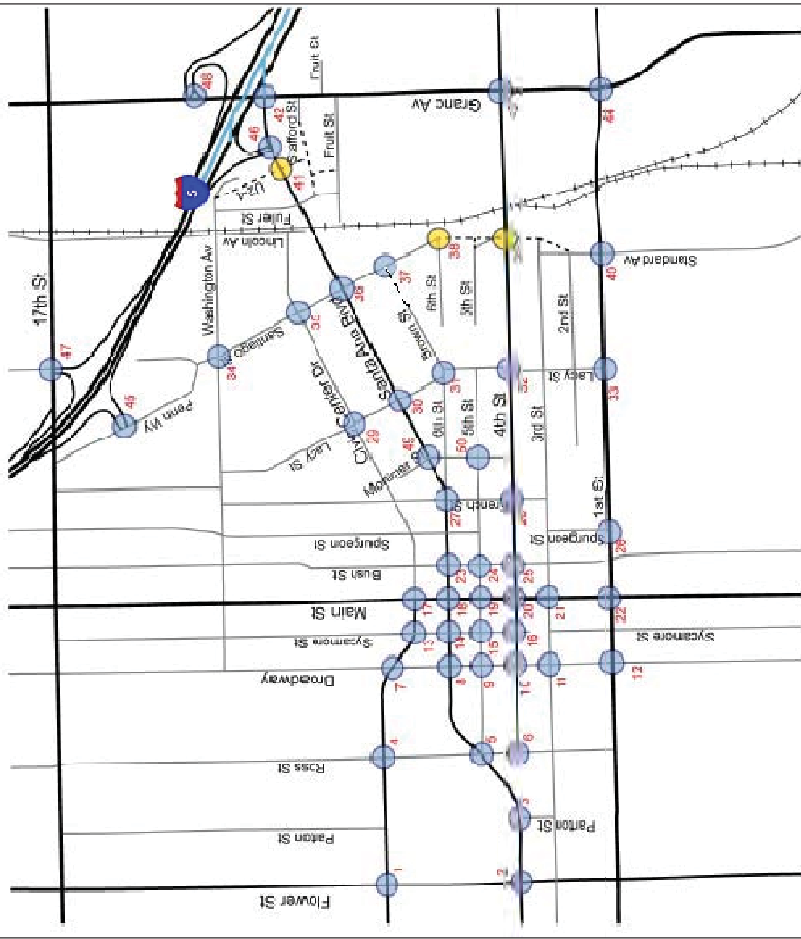
City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM Peak Hour
KOA CORPORATION
 PLANNING & ENGINEERING

31		<p>WB 0 0 0</p> <p>SB 8 17 10</p> <p>NB 102 95 19</p>	Lacy St./6th St.
32		<p>WB 123 147 0</p> <p>SB 48 28 25</p> <p>NB 97 88 0</p>	Lacy St./4th St.
33		<p>WB 40 0 0</p> <p>SB 184 1493 0</p> <p>NB 0 0 0</p>	Lacy St./1st St.
34		<p>WB 36 22 0</p> <p>SB 190 190 28</p> <p>NB 171 313 28</p>	Santiago St./Washington Ave.
35		<p>WB 13 38 42</p> <p>SB 323 58 434</p> <p>NB 210 292 102</p>	Santiago St./Civic Center Dr.



36		<p>WB 222 295 38</p> <p>SB 87 104</p> <p>NB 121 62</p>	Santa Ana Blvd./Santa Ana Blvd.
37		<p>WB 0 0 0</p> <p>SB 58 300 0</p> <p>NB 232 97 0</p>	Santiago St./Brown St.
38		<p>WB 0 0 0</p> <p>SB 68 300 0</p> <p>NB 188 95 0</p>	Santiago St./6th St.
39		<p>WB 147 724 195</p> <p>SB 58 1049 58</p> <p>NB 96 76 97</p>	Santiago St./4th St.
40		<p>WB 13 146 102</p> <p>SB 98 1382 88</p> <p>NB 91 91 91</p>	Standard St./1st St.

41		<p>WB 53 1273 0</p> <p>SB 25 1250 0</p> <p>NB 0 0 0</p>	U2-L/Santa Ana Blvd.
42		<p>WB 81 210 43</p> <p>SB 29 86 40</p> <p>NB 203 80 0</p>	Grand Ave./Santa Ana Blvd.
43		<p>WB 73 883 287</p> <p>SB 170 627 107</p> <p>NB 98 502 152</p>	Grand Ave./4th St.
44		<p>WB 63 1188 244</p> <p>SB 107 1287 137</p> <p>NB 215 661 191</p>	Grand Ave./1st St.
45		<p>WB 267 0 194</p> <p>SB 0 0 0</p> <p>NB 181 21 0</p>	Penn Way/I-5 SB Ramp



46		<p>WB 237 1159 0</p> <p>SB 489 610 0</p> <p>NB 0 0 0</p>	I-5 SB Ramp/Santa Ana Blvd.
47		<p>WB 96 2025 0</p> <p>SB 118 119 0</p> <p>NB 31 98 2</p>	I-5 NB Ramp/17th St.
48		<p>WB 81 0 719</p> <p>SB 43 1285 0</p> <p>NB 700 201 0</p>	I-5 NB Ramp/Grand Ave.
49		<p>WB 7 545 48</p> <p>SB 0 0 0</p> <p>NB 688 0 0</p>	Mortimer St./Santa Ana Blvd.
50		<p>WB 47 0 11</p> <p>SB 630 89 53</p> <p>NB 181 9 0</p>	Mortimer St./5th St.

Table 7-1
2030 With Project Peak Hour Intersection Conditions
(ICU Method)

Intersection	AM Peak Hour		PM Peak Hour	
	ICU	Level of Service	ICU	Level of Service
Signalized Intersections (Using ICU Method)				
Flower St. at Civic Center Dr.	0.678	B	0.758	C
Flower St. at Santa Ana Blvd.	0.587	A	0.596	A
Parson St. at Santa Ana Blvd.	0.274	A	0.377	A
Ross St. at Civic Center Dr.	0.538	A	0.504	A
Ross St. at Santa Ana Blvd.	0.476	A	0.429	A
Broadway at Civic Center Dr.	0.634	B	0.654	B
Broadway at Santa Ana Blvd.	0.491	A	0.534	A
Broadway at 5th St.	0.354	A	0.486	A
Broadway at 4th St.	0.354	A	0.437	A
Broadway at 3rd St.	0.338	A	0.643	B
Broadway at 1st St.	0.654	B	0.753	C
Sycamore St. at Civic Center Dr.	0.439	A	0.525	A
Main St. at Civic Center Dr.	0.774	C	0.804	D
Main St. at Santa Ana Blvd.	0.666	B	0.726	C
Main St. at 5th St.	0.511	A	0.664	B
Main St. at 4th St.	0.555	A	0.726	C
Main St. at 3rd St.	0.490	A	0.641	B
Main St. at 1st St.	0.771	C	0.956	E
Bush St. at Santa Ana Blvd.	0.305	A	0.409	A
Bush St. at 5th St.	0.242	A	0.458	A
Bush St. at 4th St.	0.280	A	0.490	A
French St. at 4th St.	0.308	A	0.488	A
Lacy St. at 4th St.	0.398	A	0.632	B
Santiago St. at Santa Ana Blvd.	0.544	A	0.690	B
Standard St. at 1st St.	0.825	D	0.851	D
Grand Ave. at Santa Ana Blvd.	0.793	C	0.987	E
Grand Ave. at 4th St.	0.664	B	0.767	C
Grand Ave. at 1st St.	0.724	C	0.816	D

Table 7-2
2030 With Project Peak Hour Intersection Conditions
(HCM Method)

Intersection	AM Peak Hour		PM Peak Hour	
	Average/Worst Case Delay	Level of Service	Average/Worst Case Delay	Level of Service
Unsignalized Intersections				
Ross St. at 4th St.	10.9	B	12.4	B
Sycamore St. at Santa Ana Blvd.	24.0	C	22.9	C
Sycamore St. at 5th St.	16.0	C	15.4	C
Sycamore St. at 4th St.	8.1	A	9.7	A
Spurgeon St. at 1st St.	10.5	B	15.4	C
French St. at Santa Ana Blvd.	19.3	C	20.2	C
Lacy St. at Civic Center Dr.	25.4	D	44.8	E
Lacy St. at Santa Ana Blvd.	31.1	D	375.3	F
Lacy St. at 6th St.	7.3	A	8.3	A
Lacy St. at 1st St.	32.5	D	OVRFL	F
Santiago St. at Washington Ave.	16.3	C	34.5	D
Santiago St. at Civic Center Dr.	23.5	C	42.6	E
Santiago St. at Brown St.	12.1	B	13.9	B
Santiago St. at 6th St.	11.3	B	13.0	B
Santiago St. at 4th St.	OVRFL	F	OVRFL	F
Mortimer St. at 5th St.	9.0	A	40.2	E
Mortimer St. at Santa Ana Blvd.	21.8	C	23.5	C
UJ-4 at Santa Ana Blvd.	45.7	E	51.2	F
Signalized Intersections (Caltrans, Using HCM)				
Penn Way at I-5 SB	22.7	C	23.8	C
Santa Ana Blvd. at I-5 SB	28.7	C	31.4	C
I-7c St. at I-5 NB	33.2	C	40.9	D
Grand Ave at I-5 NB	20.6	C	50.5	D

Note 1: Level of Service for unsignalized intersections is for the worst-case approach.

7.2 Anticipated Project Buildout (2030) With Project Roadway Segment Conditions

The roadway segment ADT analysis for the 2030 With Project scenario is presented in Table 7-3. As indicated, a majority of the arterial roadways are operating at acceptable levels. The daily V/C ratio screening analysis indicates that the following locations are potentially experiencing capacity deficiencies under 2030 With Project conditions:

- Civic Center Drive between Lacy Street and Lincoln Avenue
- Main Street between 1st Street and Washington Avenue
- Santa Ana Boulevard between French Street and Lacy Street
- Santa Ana Boulevard west of I-5 SB Ramps
- Civic Center Drive between Santiago Street and Lincoln Avenue
- Grand Avenue South of I-5 NB Ramps

The daily volume-to-capacity ratios provide a screening level analysis of daily traffic flows and potential operational problems within the study area. The peak hour analysis for intersections, presented in the previous section, provides a more definitive analysis of the operation of the arterial roadways in the project area. Although a few roadway segments indicate deficiencies, the proposed mitigation should be based on the intersection analysis recommendations. All roadway segments should operate at acceptable level of services under City's General Plan circulation element designations with spot improvements at intersections proposed based on the intersection analysis.

Table 7-3 2030 With Project Roadway Segment Daily Traffic Conditions

Road	Segment	2030 WP ADT	Number of Lanes	LOSE Capacity	LOS	LOSE OK
Flower Street	Santa Ana Blvd to Civic Center Dr.	20,656	4D	37,500	A	
Flower Street	17th St to Civic Center	19,784	4D	37,500	A	
Civic Center Dr.	West of Flower St.	21,075	4D	37,500	A	
Civic Center Dr.	Flower St. to Ross St.	20,429	4D	37,500	A	
Flower Street	Santa Ana Blvd. to 1st St.	20,983	4D	37,500	A	
Santa Ana Blvd.	West of Flower St.	12,272	4D	37,500	A	
Santa Ana Blvd.	Flower St. to Parton St.	15,193	4D	37,500	A	
Santa Ana Blvd.	Parton St. to Ross St.	15,193	4D	37,500	A	
Civic Center Dr.	Ross St. to Broadway	18,870	4D	37,500	A	
Santa Ana Blvd.	Ross St. to Broadway	15,336	3D	28,150	A	
Broadway	Civic Center Dr. to Santa Ana Blvd.	21,422	4D	37,500	A	
Broadway	Civic Center Dr. to Washington	27,818	4D	37,500	C	
Civic Center Dr.	Broadway to Sycamore St.	18,484	4D	37,500	A	
Broadway	Santa Ana Blvd. To 5th St.	18,467	4D	37,500	A	
Santa Ana Blvd.	Broadway to Sycamore St.	12,455	3D	28,150	A	
Broadway	5th St. to 4th St.	18,547	4D	37,500	A	
5th St	Broadway to Ross St.	9,834	3D	28,150	A	

Road	Segment	2030 WP ADT	Number of Lanes	LOSE Capacity	LOS	LOSE OK
5th St	Broadway to Main St.	9,736	3D	28,150	A	
Broadway	3rd St. to 4th St.	18,409	4U	25,000	C	
Broadway	3rd St. to 1st St.	18,671	4U	25,000	C	
Broadway	South of 1st St.	13,880	4U	25,000	A	
1st St.	Broadway to Ross St.	46,088	6D	56,300	D	
1st St.	Main St. to Broadway	46,962	6D	56,300	D	
Civic Center Dr.	Sycamore St. to Main St.	17,546	4D	37,500	A	
Santa Ana Blvd.	Sycamore St. to Main St.	12,125	3D	28,150	A	
5th St.	Sycamore St. to Broadway	9,762	3D	28,150	A	
5th St.	Sycamore St. to Main St.	10,012	3D	28,150	A	
Main St.	Civic Center Dr. to Santa Ana Blvd.	37,084	4D	37,500	E	E ok
Main St.	Civic Center Dr. to Washington	37,826	4D	37,500	E	E ok
Civic Center Dr.	Main St. to Bush St.	13,976	4D	37,500	A	
Main St.	Santa Ana Blvd. To 5th St.	38,872	4D	37,500	F	
Santa Ana Blvd.	Main St. to Bush St.	12,022	3D	28,150	A	
Main St.	5th St. to 4th St.	38,907	4U	25,000	F	
5th St.	Main St. to Bush St.	7,373	3D	28,150	A	
Main St.	3rd St. to 4th St.	35,539	4U	25,000	F	
Main St.	1st St. to 3rd St.	35,506	4U	25,000	F	
Santa Ana Blvd.	Bush St. to Spurgeon St.	11,816	3D	28,150	A	
5th St.	Bush St. to French St.	7,232	3D	28,150	A	
1st St.	Spurgeon St. to Main St.	44,886	6D	56,300	C	
Santa Ana Blvd.	Lacy St. Standard Ave	16,213	4D	37,500	A	
Civic Center Dr.	French St to Lacy St	15,137	4D	37,500	A	
Santa Ana Blvd.	Lacy St. to French St.	18,215	2D	18,750	E	
4th St.	Lacy St. to French St.	13,486	2D	18,750	C	
1st St.	Lacy St. to Spurgeon St.	44,892	6D	56,300	C	
1st St.	Lacy St. to Standard Ave	44,892	6D	56,300	C	
Santiago St.	Washington Ave. to Civic Center	13,005	4D	37,500	A	
Santiago St.	Washington Ave. to 17 th St	12,193	4D	37,500	A	
Santiago St.	Santa Ana Blvd to Civic Center Dr.	12,970	4D	37,500	A	
Civic Center Dr.	Santiago St. to Lacy St	14,041	2U	12,500	F	
Civic Center Dr.	Lincoln Ave to Santiago St.	13,418	2U	12,500	F	
Santiago St.	Santa Ana Blvd. to Brown St.	9,774	4D	37,500	A	

Road	Segment	2030 WP ADT	Number of Lanes	LOS E Capacity	LOS	LOS E OK
Santa Ana Blvd.	Santiago St. to Lacy St	19,431	4D	37,500	A	
Santa Ana Blvd.	Santiago St. to U-24	24,363	6D	56,300	A	
4th St.	Santiago St. to Lacy St	19,855	4D	37,500	A	
Grand Ave.	4th St. to Santa Ana Blvd	42,417	6D	56,300	C	
Grand Ave.	Santa Ana Blvd to 17th St	40,394	6D	56,300	C	
Santa Ana Blvd.	East of Grand Ave.	8,998	4D	37,500	A	
Grand Ave.	1st St. to 4th St.	37,502	6D	56,300	B	
4th St.	Grand Ave to Santiago St	22,231	4D	37,500	B	
4th St.	East of Grand Ave.	23,792	4D	37,500	B	
Grand Ave.	South of 1st St.	47,852	6D	56,300	D	
1st St.	Standard Ave to Grand Ave	46,427	6D	56,300	D	
1st St.	East of Grand Ave.	41,245	6D	56,300	C	
Penn Way	South of I-5 SB Ramps	10,651	2D	18,750	A	
Penn Way	North of I-5 SB Ramps	16,619	4D	37,500	A	
Santa Ana Blvd.	West of I-5 SB Ramps	46,866	4D	37,500	F	
Santa Ana Blvd.	East of I-5 SB Ramps	30,762	4D	37,500	D	
17th St.	West of I-5 NB Ramps	48,939	6D	56,300	D	
17th St.	East of I-5 NB Ramps	38,865	6D	56,300	C	
Grand Ave.	South of I-5 NB Ramps	54,445	6D	56,300	E	
Grand Ave.	North of I-5 NB Ramps	48,570	6D	56,300	D	

7.3 Anticipated Project Buildout (2030) With Project Peak Hour Freeway Ramp Conditions

Existing peak hour ramp analysis results are presented on Table 7-4. All ramps operate at LOS D or better during the AM and/or PM peak hour time periods except the northbound off ramp at the interchange of I-5 at Santa Ana Boulevard.

Table 7-4 2030 With Project Peak Hour Freeway Ramp Analysis

INTER-CHANGE	RAMP	RAMP TYPE CODE ¹	LANES	PEAK HOUR CAPACITY	AM PEAK HOUR			PM PEAK HOUR		
					VOL	V/C	LOS	VOL	V/C	LOS
I-5 at 17th St.	SB On	4	2	1,800	729	0.41	A	790	0.44	A
	NB Loop On	4	2	1,800	271	0.15	A	387	0.22	A
	SB Off	5	1	1,500	439	0.29	A	451	0.30	A
I-5 at Santa Ana Blvd.	NB Off	5	1	1,500	788	0.53	A	910	0.61	A
	SB Direct On (HOV)	6	2	2,250	246	0.11	A	186	0.08	A
	SB Loop On	4	2	1,800	461	0.26	A	695	0.39	A
I-5 at Santa Ana Blvd.	NB Loop On	4	2	1,800	516	0.29	A	743	0.41	A
	SB Off	5	1	1,500	533	0.36	A	570	0.38	A
	NB Off	5	1	1,500	956	0.64	B	1,550	1.03	F

Note 1: Reference to Freeway Ramp Capacity Assumptions Table

4 - Two-lane Metered On-Ramp, 2 Mixed Flow Lanes at Meter

5 - One-lane Unmetered Ramp

6 - Two-lane Unmetered On-Ramp, tapers to one merge lane at or beyond gore point

8. GENERAL PLAN (2035) TRAFFIC CONDITIONS WITH PROJECT

This section documents the future (2035) traffic conditions with the addition of the Renaissance project-related traffic to the surrounding street system. To forecast the anticipated project buildup traffic conditions for the year 2035, the 2035 Without Project peak hour background traffic volumes shown in Figures 5-2a through Figure 5-2j were increased by adding the project-related traffic volumes shown in Figure 6-2a through Figure 6-2j.

8.1 General Plan (2035) With Project Intersection Conditions

Figure 8-1a through Figure 8-1e illustrate the 2035 With Project AM peak hour traffic volumes while Figure 8-1f through Figure 8-1j illustrate the 2035 With Project PM peak hour traffic volumes for 2035 Without Project conditions. Tables 5 and 6 illustrate the future without project intersection level of service conditions. Tables 8-1 and 8-2 illustrate the 2035 with project intersection level of service conditions. As shown in the tables, all intersections are expected to operate at Level of Service D or better under the 2035 with project condition except the following intersections. Appendix I includes the analysis worksheet for all intersections under 2035 With Project conditions.

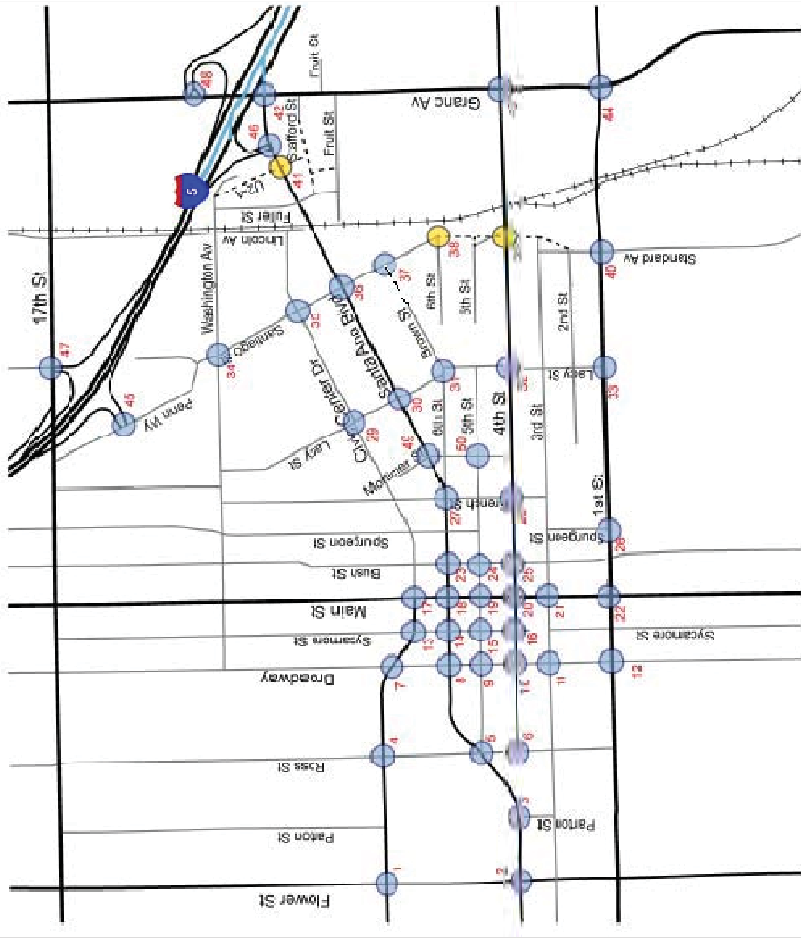
- Flower Street at Civic Center Drive (Signalized)
- Main Street at Civic Center Drive (Signalized)
- Main Street at 1st Street (Signalized)
- Santiago Street at Santa Ana Boulevard (Signalized)
- Standard Street (Santiago Street) at 1st Street (Signalized)
- Grand Avenue at Santa Ana Boulevard (Signalized)
- Grand Avenue at 1st Street (signalized)
- Grand Avenue at I-5 NB Ramp (Signalized)
- 17th Street at I-5 NB Ramp (signalized)
- Lacy Street at Civic Center Drive (Two-way stop control)
- Lacy Street at Santa Ana Boulevard (Two-way stop control)
- Lacy Street at 1st Street (Two-way stop control)
- Santiago Street at Washington Avenue (All-way stop control)
- Santiago Street at Civic Center Drive (All-way stop control)
- Santiago Street at 4th Street (All-way stop control)
- Mortimer Street at 5th Street (All-way stop control)
- Mortimer Street at Santa Ana Boulevard (All-way stop control)
- U2-4 at Santa Ana Boulevard (Two-way stop control)

Compared to 2035 Without Project conditions, the following additional intersections operate at unacceptable level of services under 2035 With Project conditions.

- Main Street at Civic Center Drive (Signalized)
- Santiago Street at Santa Ana Boulevard (Signalized)
- Standard Street (Santiago Street) at 1st Street (Signalized)
- Grand Avenue at 1st Street (Signalized)
- Santiago Street at 4th Street (All-way stop control)
- Mortimer Street at 5th Street (All-way stop control)
- Mortimer Street at Santa Ana Boulevard (All-way stop control)
- U2-4 at Santa Ana Boulevard (Two-way stop control)

In addition to the intersections indicated in the previous scenarios warranting a traffic signal, Santiago Street at Civic Center Drive warrants a traffic signal under 2035 With Project conditions.

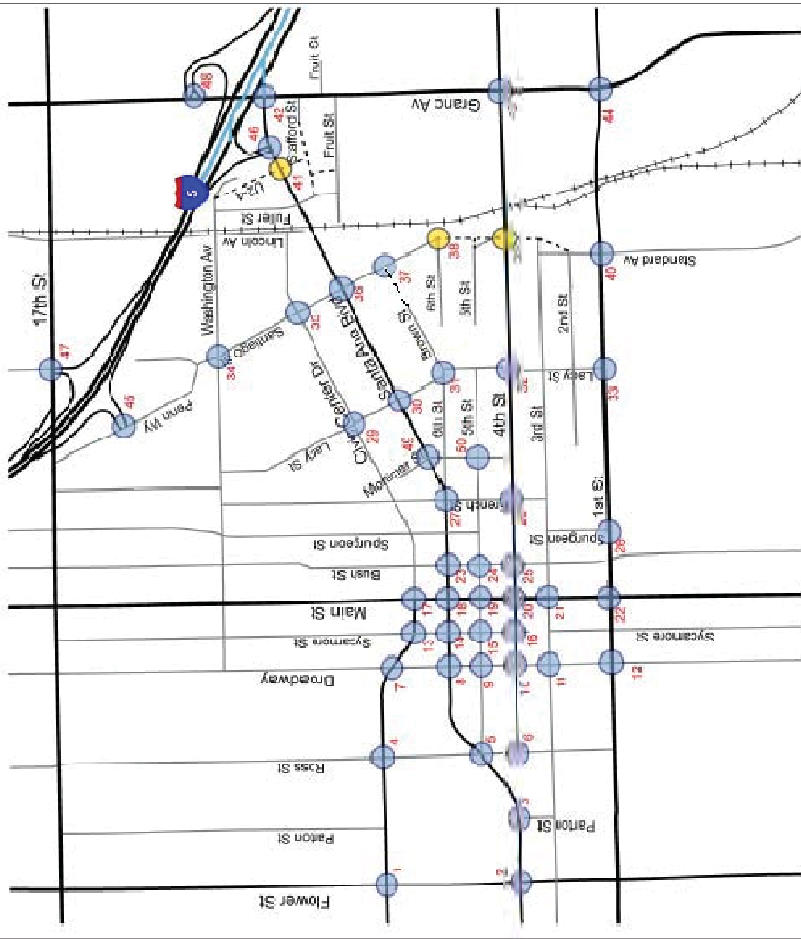
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City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study
 2035 With Project AM Peak Hour
 Figure 8-1a

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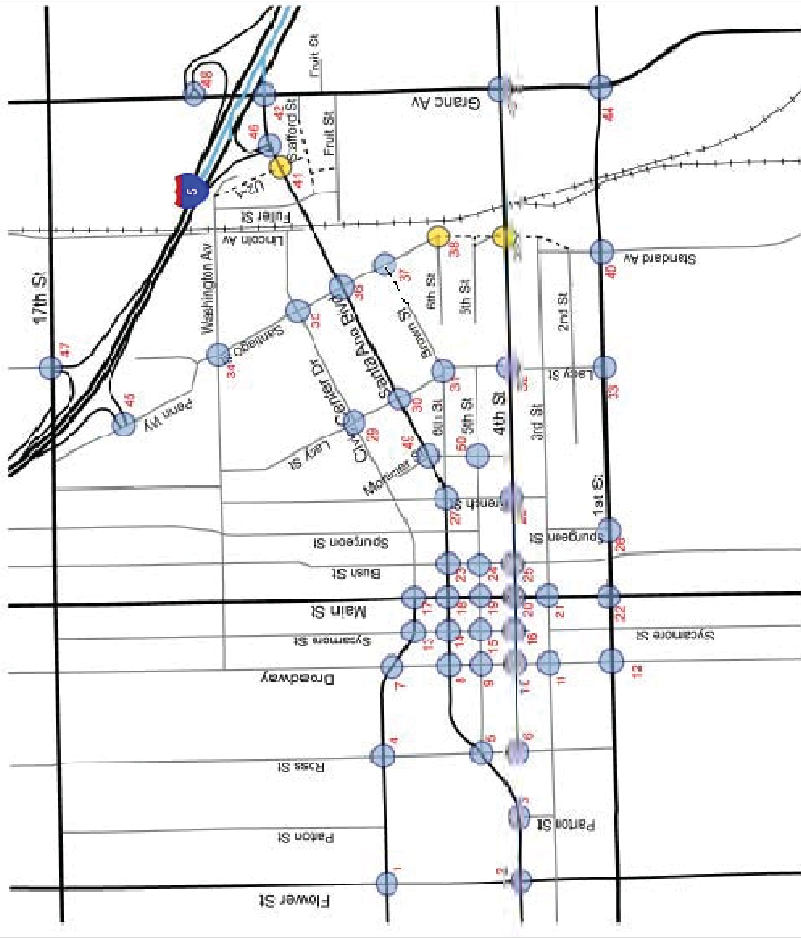


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City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study
 2035 With Project AM Peak Hour
 Figure 8-1b

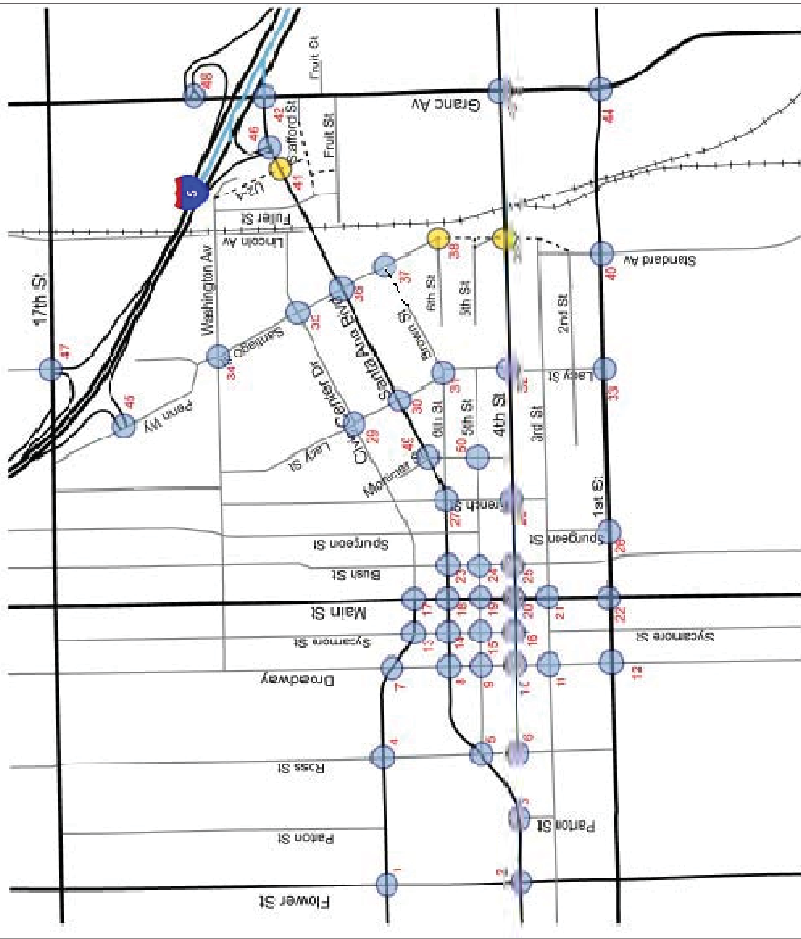


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<table border="1"> <tr><td>WB</td><td>28</td><td>0</td><td>0</td></tr><tr><td>SB</td><td>1088</td><td>0</td><td>0</td></tr><tr><td>EB</td><td>0</td><td>0</td><td>0</td></tr><tr><td>NB</td><td>0</td><td>0</td><td>0</td></tr></table>	WB	28	0	0	SB	1088	0	0	EB	0	0	0	NB	0	0	0	<table border="1"> <tr><td>WB</td><td>34</td><td>113</td><td>27</td></tr><tr><td>SB</td><td>140</td><td>1375</td><td>0</td></tr><tr><td>EB</td><td>0</td><td>0</td><td>0</td></tr><tr><td>NB</td><td>439</td><td>231</td><td>785</td></tr></table>	WB	34	113	27	SB	140	1375	0	EB	0	0	0	NB	439	231	785	<table border="1"> <tr><td>WB</td><td>147</td><td>382</td><td>39</td></tr><tr><td>SB</td><td>152</td><td>508</td><td>0</td></tr><tr><td>EB</td><td>0</td><td>0</td><td>0</td></tr><tr><td>NB</td><td>127</td><td>1300</td><td>181</td></tr></table>	WB	147	382	39	SB	152	508	0	EB	0	0	0	NB	127	1300	181	<table border="1"> <tr><td>WB</td><td>74</td><td>783</td><td>382</td></tr><tr><td>SB</td><td>157</td><td>354</td><td>0</td></tr><tr><td>EB</td><td>0</td><td>0</td><td>0</td></tr><tr><td>NB</td><td>1277</td><td>346</td><td>0</td></tr></table>	WB	74	783	382	SB	157	354	0	EB	0	0	0	NB	1277	346	0	<table border="1"> <tr><td>WB</td><td>252</td><td>0</td><td>0</td></tr><tr><td>SB</td><td>0</td><td>0</td><td>0</td></tr><tr><td>EB</td><td>0</td><td>0</td><td>0</td></tr><tr><td>NB</td><td>133</td><td>273</td><td>274</td></tr></table>	WB	252	0	0	SB	0	0	0	EB	0	0	0	NB	133	273	274
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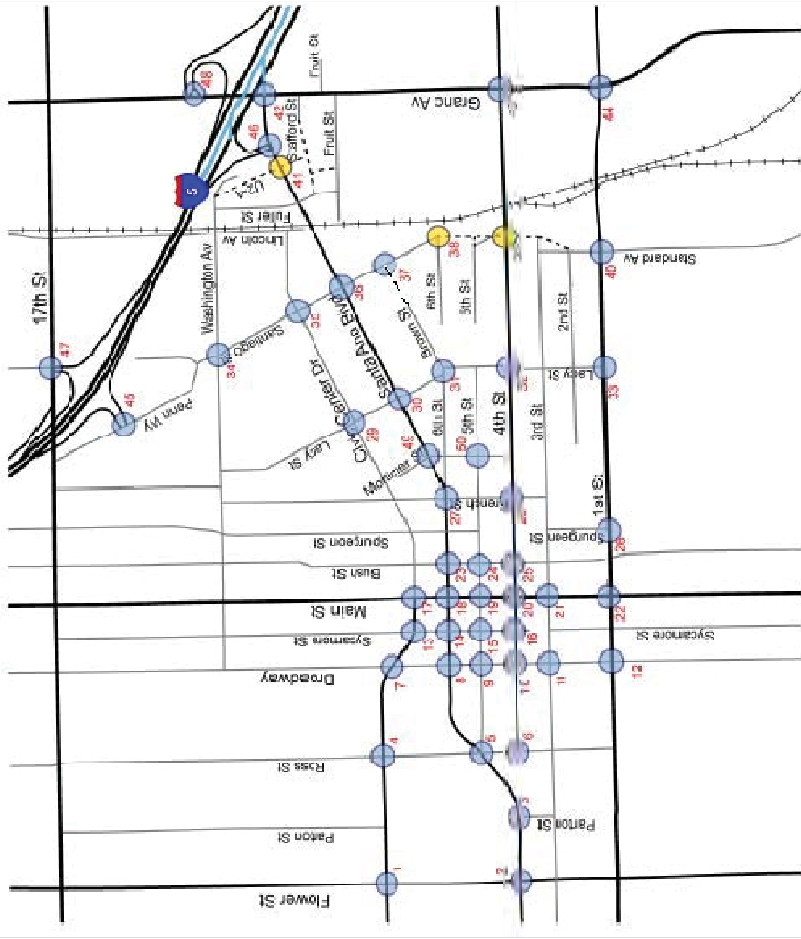
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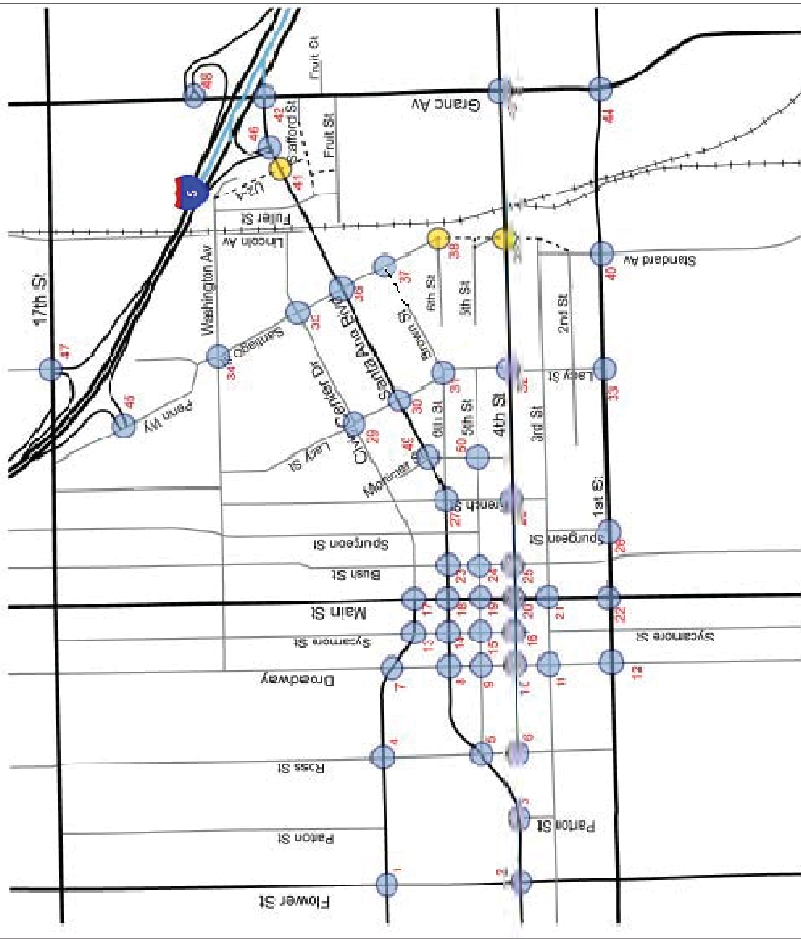
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11		<p>WB 91 128 175 22</p> <p>SB 85 134 26</p> <p>NB 96 125</p> <p>EB 0</p>	<p>WB 1715 153</p> <p>SB 1475 81</p> <p>NB 30 437 88</p> <p>EB 0</p>	<p>WB 39 584 9</p> <p>SB 1097 27</p> <p>NB 23 1088</p> <p>EB 0</p>	<p>WB 31 824 0</p> <p>SB 0 0</p> <p>NB 28 26 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 75 607 18</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>City of Santa Ana Main St./3rd St.</p>
12		<p>WB 83 1715 153</p> <p>SB 1475 81</p> <p>NB 30 437 88</p> <p>EB 0</p>	<p>WB 39 584 9</p> <p>SB 1097 27</p> <p>NB 23 1088</p> <p>EB 0</p>	<p>WB 31 824 0</p> <p>SB 0 0</p> <p>NB 28 26 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 75 607 18</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>City of Santa Ana Broadway/1st St.</p>	
13		<p>WB 111 584 9</p> <p>SB 1097 27</p> <p>NB 23 1088</p> <p>EB 0</p>	<p>WB 39 584 9</p> <p>SB 1097 27</p> <p>NB 23 1088</p> <p>EB 0</p>	<p>WB 31 824 0</p> <p>SB 0 0</p> <p>NB 28 26 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 75 607 18</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>City of Santa Ana Sycamore St./Civic Center Dr.</p>	
14		<p>WB 111 584 9</p> <p>SB 1097 27</p> <p>NB 23 1088</p> <p>EB 0</p>	<p>WB 39 584 9</p> <p>SB 1097 27</p> <p>NB 23 1088</p> <p>EB 0</p>	<p>WB 31 824 0</p> <p>SB 0 0</p> <p>NB 28 26 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 75 607 18</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>City of Santa Ana Sycamore St./Santa Ana Blvd.</p>	
15		<p>WB 111 584 9</p> <p>SB 1097 27</p> <p>NB 23 1088</p> <p>EB 0</p>	<p>WB 39 584 9</p> <p>SB 1097 27</p> <p>NB 23 1088</p> <p>EB 0</p>	<p>WB 31 824 0</p> <p>SB 0 0</p> <p>NB 28 26 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 75 607 18</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>City of Santa Ana Sycamore St./5th St.</p>	



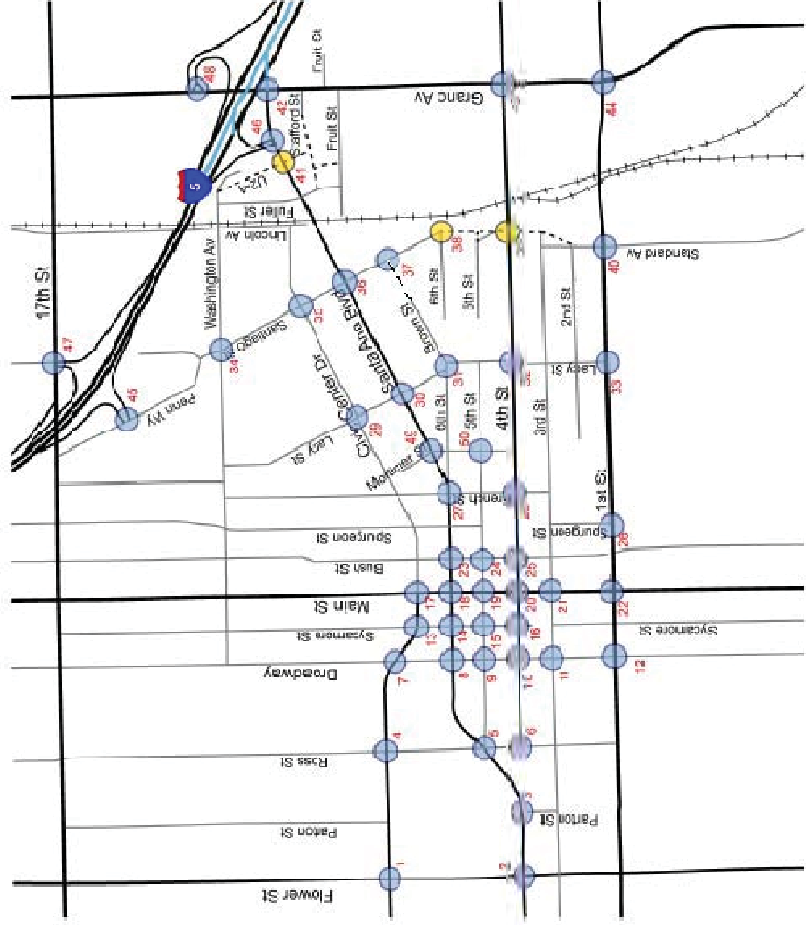
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17		<p>WB 142 123 98</p> <p>SB 151 988 184</p> <p>NB 153 135 78</p> <p>EB 0</p>	<p>WB 125 1081 89</p> <p>SB 1577 0</p> <p>NB 136 112 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 188 1083 131</p> <p>NB 132 0 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 6 288 77</p> <p>EB 0</p>	<p>WB 105 300 34</p> <p>SB 152 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>City of Santa Ana Main St./Civic Center Dr.</p>	
18		<p>WB 142 123 98</p> <p>SB 151 988 184</p> <p>NB 153 135 78</p> <p>EB 0</p>	<p>WB 125 1081 89</p> <p>SB 1577 0</p> <p>NB 136 112 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 188 1083 131</p> <p>NB 132 0 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 6 288 77</p> <p>EB 0</p>	<p>WB 105 300 34</p> <p>SB 152 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>City of Santa Ana Main St./Santa Ana Blvd.</p>	
19		<p>WB 142 123 98</p> <p>SB 151 988 184</p> <p>NB 153 135 78</p> <p>EB 0</p>	<p>WB 125 1081 89</p> <p>SB 1577 0</p> <p>NB 136 112 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 188 1083 131</p> <p>NB 132 0 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 6 288 77</p> <p>EB 0</p>	<p>WB 105 300 34</p> <p>SB 152 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>City of Santa Ana Main St./5th St.</p>	
20		<p>WB 22 219 101</p> <p>SB 40 204 25</p> <p>NB 0 0 0</p> <p>EB 0</p>	<p>WB 142 123 98</p> <p>SB 151 988 184</p> <p>NB 153 135 78</p> <p>EB 0</p>	<p>WB 125 1081 89</p> <p>SB 1577 0</p> <p>NB 136 112 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 188 1083 131</p> <p>NB 132 0 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 6 288 77</p> <p>EB 0</p>	<p>WB 105 300 34</p> <p>SB 152 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>City of Santa Ana Main St./4th St.</p>

21		<p>WB 50 48 226 48</p> <p>SB 54 191 50</p> <p>NB 156 145 48</p> <p>EB 0</p>	<p>WB 275 136 126</p> <p>SB 226 437 112</p> <p>NB 236 112</p> <p>EB 0</p>	<p>WB 190 1529 139</p> <p>SB 115 227 236</p> <p>NB 115 227 236</p> <p>EB 0</p>	<p>WB 73 866 45</p> <p>SB 97 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 100 981 112</p> <p>NB 282 0 0</p> <p>EB 0</p>	<p>WB 49 333 22</p> <p>SB 16 332 32</p> <p>NB 22 892 15</p> <p>EB 0</p>	<p>City of Santa Ana Main St./3rd St.</p>
22		<p>WB 50 48 226 48</p> <p>SB 54 191 50</p> <p>NB 156 145 48</p> <p>EB 0</p>	<p>WB 275 136 126</p> <p>SB 226 437 112</p> <p>NB 236 112</p> <p>EB 0</p>	<p>WB 190 1529 139</p> <p>SB 115 227 236</p> <p>NB 115 227 236</p> <p>EB 0</p>	<p>WB 73 866 45</p> <p>SB 97 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 100 981 112</p> <p>NB 282 0 0</p> <p>EB 0</p>	<p>WB 49 333 22</p> <p>SB 16 332 32</p> <p>NB 22 892 15</p> <p>EB 0</p>	<p>City of Santa Ana Main St./1st St.</p>
23		<p>WB 50 48 226 48</p> <p>SB 54 191 50</p> <p>NB 156 145 48</p> <p>EB 0</p>	<p>WB 275 136 126</p> <p>SB 226 437 112</p> <p>NB 236 112</p> <p>EB 0</p>	<p>WB 190 1529 139</p> <p>SB 115 227 236</p> <p>NB 115 227 236</p> <p>EB 0</p>	<p>WB 73 866 45</p> <p>SB 97 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 100 981 112</p> <p>NB 282 0 0</p> <p>EB 0</p>	<p>WB 49 333 22</p> <p>SB 16 332 32</p> <p>NB 22 892 15</p> <p>EB 0</p>	<p>City of Santa Ana Bush St./Santa Ana Blvd.</p>
24		<p>WB 50 48 226 48</p> <p>SB 54 191 50</p> <p>NB 156 145 48</p> <p>EB 0</p>	<p>WB 275 136 126</p> <p>SB 226 437 112</p> <p>NB 236 112</p> <p>EB 0</p>	<p>WB 190 1529 139</p> <p>SB 115 227 236</p> <p>NB 115 227 236</p> <p>EB 0</p>	<p>WB 73 866 45</p> <p>SB 97 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 100 981 112</p> <p>NB 282 0 0</p> <p>EB 0</p>	<p>WB 49 333 22</p> <p>SB 16 332 32</p> <p>NB 22 892 15</p> <p>EB 0</p>	<p>City of Santa Ana Bush St./5th St.</p>
25		<p>WB 50 48 226 48</p> <p>SB 54 191 50</p> <p>NB 156 145 48</p> <p>EB 0</p>	<p>WB 275 136 126</p> <p>SB 226 437 112</p> <p>NB 236 112</p> <p>EB 0</p>	<p>WB 190 1529 139</p> <p>SB 115 227 236</p> <p>NB 115 227 236</p> <p>EB 0</p>	<p>WB 73 866 45</p> <p>SB 97 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 100 981 112</p> <p>NB 282 0 0</p> <p>EB 0</p>	<p>WB 49 333 22</p> <p>SB 16 332 32</p> <p>NB 22 892 15</p> <p>EB 0</p>	<p>City of Santa Ana Bush St./4th St.</p>



26		<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 1854 0</p> <p>EB 0</p>	<p>WB 288 0 0</p> <p>SB 288 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 9 246 27</p> <p>SB 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 70 387 92</p> <p>SB 61 288 40</p> <p>NB 83 28 15</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 19 742 54</p> <p>NB 12 83 0</p> <p>EB 0</p>	<p>WB 14 847 79</p> <p>SB 3 880 9</p> <p>NB 13 80 82</p> <p>EB 0</p>	<p>City of Santa Ana Spurgeon St./1st St.</p>
27		<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 1854 0</p> <p>EB 0</p>	<p>WB 288 0 0</p> <p>SB 288 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 9 246 27</p> <p>SB 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 70 387 92</p> <p>SB 61 288 40</p> <p>NB 83 28 15</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 19 742 54</p> <p>NB 12 83 0</p> <p>EB 0</p>	<p>WB 14 847 79</p> <p>SB 3 880 9</p> <p>NB 13 80 82</p> <p>EB 0</p>	<p>City of Santa Ana French St./Santa Ana Blvd.</p>
28		<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 1854 0</p> <p>EB 0</p>	<p>WB 288 0 0</p> <p>SB 288 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 9 246 27</p> <p>SB 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 70 387 92</p> <p>SB 61 288 40</p> <p>NB 83 28 15</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 19 742 54</p> <p>NB 12 83 0</p> <p>EB 0</p>	<p>WB 14 847 79</p> <p>SB 3 880 9</p> <p>NB 13 80 82</p> <p>EB 0</p>	<p>City of Santa Ana French St./4th St.</p>
29		<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 1854 0</p> <p>EB 0</p>	<p>WB 288 0 0</p> <p>SB 288 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 9 246 27</p> <p>SB 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 70 387 92</p> <p>SB 61 288 40</p> <p>NB 83 28 15</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 19 742 54</p> <p>NB 12 83 0</p> <p>EB 0</p>	<p>WB 14 847 79</p> <p>SB 3 880 9</p> <p>NB 13 80 82</p> <p>EB 0</p>	<p>City of Santa Ana Lacy St./Civic Center Dr.</p>
30		<p>WB 0 0 0</p> <p>SB 0 0</p> <p>NB 1854 0</p> <p>EB 0</p>	<p>WB 288 0 0</p> <p>SB 288 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 9 246 27</p> <p>SB 0 0</p> <p>NB 0 0</p> <p>EB 0</p>	<p>WB 70 387 92</p> <p>SB 61 288 40</p> <p>NB 83 28 15</p> <p>EB 0</p>	<p>WB 0 0 0</p> <p>SB 19 742 54</p> <p>NB 12 83 0</p> <p>EB 0</p>	<p>WB 14 847 79</p> <p>SB 3 880 9</p> <p>NB 13 80 82</p> <p>EB 0</p>	<p>City of Santa Ana Lacy St./Santa Ana Blvd.</p>

31		Lacy St/4th St.	EB
32		Lacy St/4th St.	EB
33		Lacy St/1st St.	EB
34		Santiago St/Washington Ave.	SB
35		Santiago St/Civic Center Dr.	EB



36		Santiago St/Santa Ana Blvd.	EB
37		Santiago St/Brown St.	EB
38		Santiago St/6th St.	EB
39		Santiago St/4th St.	EB
40		Standard St/1st St.	EB

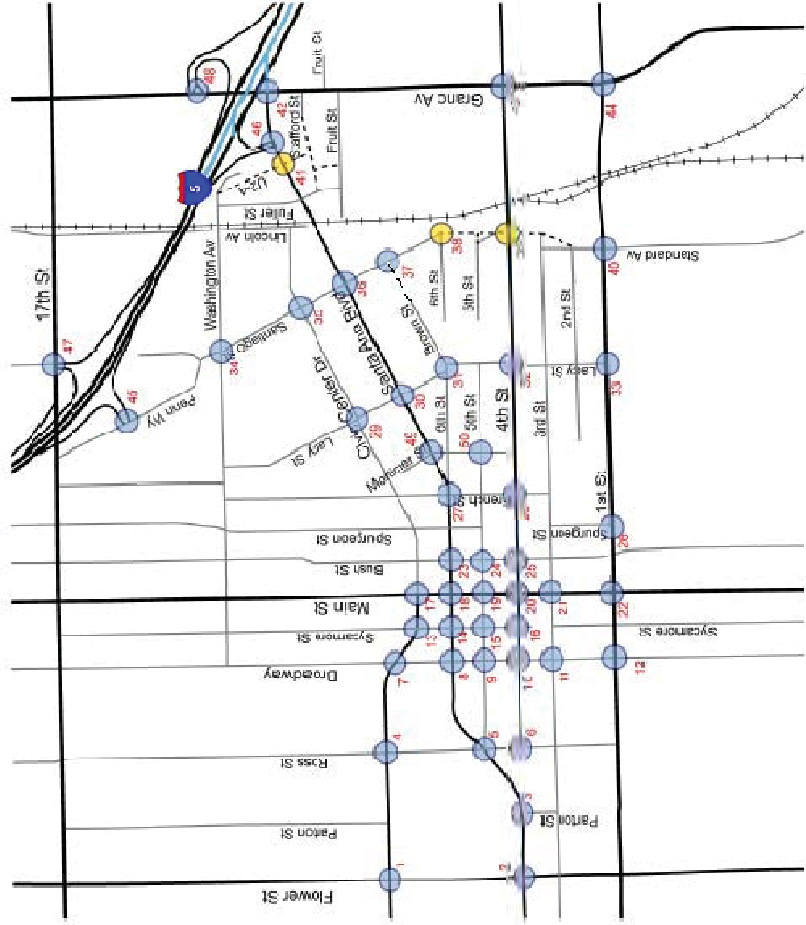
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Figure 8-11
2035 With Project PM Peak Hour

41		U2-4/Santa Ana Blvd.	EB
42		Grand Ave/Santa Ana Blvd.	EB
43		Grand Ave/4th St.	EB
44		Grand Ave/1st St.	EB
45		Penn Way/I-5 SB Ramp	EB



46		I-5 SB Ramp/Santa Ana Blvd.	EB
47		I-5 NB Ramp/17th St.	EB
48		I-5 NB Ramp/Grand Ave.	EB
49		Mortimer St/Santa Ana Blvd.	EB
50		Mortimer St/5th St.	EB

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Figure 8-11
2035 With Project PM Peak Hour

Table 8-1
2035 With Project Peak Hour Intersection Conditions
(ICU Method)

Intersection	AM Peak Hour		PM Peak Hour	
	ICU	Level of Service	ICU	Level of Service
Signalized Intersections (Using ICU Method)				
Flower St. at Civic Center Dr.	0.784	C	1.146	F
Flower St. at Santa Ana Blvd.	0.695	B	0.703	C
Parlton St. at Santa Ana Blvd.	0.313	A	0.434	A
Ross St. at Civic Center Dr.	0.652	B	0.594	A
Ross St. at Santa Ana Blvd.	0.582	A	0.693	B
Broadway at Civic Center Dr.	0.740	C	0.754	C
Broadway at Santa Ana Blvd.	0.618	B	0.624	B
Broadway at 5th St.	0.404	A	0.645	B
Broadway at 4th St.	0.477	A	0.659	B
Broadway at 3rd St.	0.409	A	0.833	D
Broadway at 1st St.	0.778	C	0.868	D
Sycamore St. at Civic Center Dr.	0.502	A	0.603	B
Main St. at Civic Center Dr.	0.899	D	0.938	E
Main St. at Santa Ana Blvd.	0.810	D	0.869	D
Main St. at 5th St.	0.623	B	0.843	D
Main St. at 4th St.	0.654	B	0.847	D
Main St. at 3rd St.	0.559	A	0.730	C
Main St. at 1st St.	0.927	E	1.097	F
Bush St. at Santa Ana Blvd.	0.346	A	0.467	A
Bush St. at 5th St.	0.296	A	0.577	A
Bush St. at 4th St.	0.357	A	0.602	B
French St. at 4th St.	0.359	A	0.568	A
Lacy St. at 4th St.	0.465	A	0.814	D
Santiago St. at Santa Ana Blvd.	0.865	D	1.011	F
Standard St. at 1st St.	0.957	E	0.988	E
Grand Ave. at Santa Ana Blvd.	0.977	E	1.239	F
Grand Ave. at 4th St.	0.754	C	0.875	D
Grand Ave. at 1st St.	0.918	E	0.998	E

Table 8-2
2035 With Project Peak Hour Intersection Conditions
(HCM Method)

Intersection	AM Peak Hour		PM Peak Hour	
	Average/Worst Case Delay	Level of Service	Average/Worst Case Delay	Level of Service
Unsignalized Intersections				
Ross St. at 4th St.	11.9	B	13.8	B
Sycamore St. at Santa Ana Blvd.	32.4	D	34.5	D
Sycamore St. at 5th St.	19.7	C	18.1	C
Sycamore St. at 4th St.	8.6	A	10.5	B
Spurgeon St. at 1st St.	11.3	B	20.0	C
French St. at Santa Ana Blvd.	26.1	D	29.6	D
Lacy St. at Civic Center Dr.	37.9	E	113.5	F
Lacy St. at Santa Ana Blvd.	55.7	F	OVRFL	F
Lacy St. at 6th St.	7.4	A	8.6	A
Lacy St. at 1st St.	97.4	F	OVRFL	F
Santiago St. at Washington Ave.	112.3	F	164.9	F
Santiago St. at Civic Center Dr.	263.9	F	266.2	F
Santiago St. at Brown St.	16.7	C	19.7	C
Santiago St. at 6th St.	13.7	B	20.9	C
Santiago St. at 4th St.	OVRFL	F	OVRFL	F
Mortimer St. at 5th St.	9.5	A	64.4	F
Mortimer St. at Santa Ana Blvd.	324.2	F	35.8	E
UJ-4 at Santa Ana Blvd.	79.4	F	130.8	F
Signalized Intersections (Caltrans, Using HCM)				
Penn Way at I-5 SB	25.0	C	29.0	C
Santa Ana Blvd. at I-5 SB	30.5	C	33.8	C
I7c St. at I-5 NB	39.7	D	73.3	E
Grand Ave at I-5 NB	79.9	E	182.8	F

Note 1: Level of Service for unsignalized intersections is for the worst-case approach.

8.2 General Plan (2035) With Project Roadway Segment Conditions

The roadway segment ADT analysis for 2035 is presented in Table 8-3. As indicated, a majority of the arterial roadways are operating at acceptable levels. The daily V/C ratio screening analysis indicates that the following locations are potentially experiencing capacity deficiencies under 2035 With Project conditions:

- 1st Street from Main Street to Spurgeon Street
- 1st Street from Lacy Street to Standard Avenue
- 1st Street from Standard Avenue to Grand Avenue
- Main Street from Washington Avenue to 1st Street
- Civic Center Drive from Lacy Street to Lincoln Avenue
- Santa Ana Boulevard West of I-5 SB Ramps
- Santa Ana Boulevard East of I-5 SB Ramps
- Grand Avenue between Santa Ana Boulevard and 17th Street
- Grand Avenue South of 1st Street
- Grand Avenue South of I-5 NB Ramps
- Grand Avenue at North of I-5 NB Ramps
- 17th Street West of I-5 NB Ramps

The daily volume-to-capacity ratios provide a screening level analysis of daily traffic flows and potential operational problems within the study area. The peak hour analysis for intersections, presented in the previous section, provides a more definitive analysis of the operation of the arterial roadways in the project area. Although a few roadway segments indicate deficiencies, the proposed mitigation should be based on the intersection analysis recommendations. All roadway segments should operate at acceptable level of services under City's General Plan circulation element designations with spot improvements at intersections proposed based on the intersection analysis.

Table 8-3 2035 With Project Roadway Segment Daily Traffic Condition

Road	Segment	2035 WP ADT	Number of Lanes	LOSE Capacity	LOS	LOSE OK
Flower Street	Santa Ana Blvd to Civic Center Dr.	23,949	4D	37,500	B	
Flower Street	17th St to Civic Center	22,834	4D	37,500	B	
Civic Center Dr.	West of Flower St.	23,875	4D	37,500	B	
Civic Center Dr.	Flower St. to Ross St.	23,064	4D	37,500	B	
Flower Street	Santa Ana Blvd. to 1st St.	26,046	4D	37,500	C	
Santa Ana Blvd.	West of Flower St.	14,268	6D	56,300	A	
Santa Ana Blvd.	Flower St. to Parton St.	17,312	6D	56,300	A	
Santa Ana Blvd.	Parton St. to Ross St.	19,406	6D	56,300	A	
Civic Center Dr.	Ross St. to Broadway	21,259	4D	37,500	A	
Santa Ana Blvd.	Ross St. to Broadway	17,455	3D	28,150	B	
Broadway	Civic Center Dr. to Santa Ana Blvd.	23,962	4D	37,500	B	
Broadway	Civic Center Dr. to Washington Ave	30,429	4D	37,500	D	

Road	Segment	2035 WP ADT	Number of Lanes	LOSE Capacity	LOS	LOSE OK
Civic Center Dr.	Broadway to Sycamore St.	21,337	4D	37,500	A	
Broadway	Santa Ana Blvd. To 5th St.	20,854	4D	37,500	A	
Santa Ana Blvd.	Broadway to Sycamore St.	14,508	3D	28,150	A	
Broadway	5th St. to 4th St.	21,002	4D	37,500	A	
5th St	Broadway to Ross St.	11,241	3D	28,150	A	
5th St	Broadway to Sycamore St.	14,583	3D	28,150	A	
Broadway	3rd St. to 4th St.	20,983	4D	37,500	A	
Broadway	3rd St. to 1st St.	26,728	4D	37,500	C	
Broadway	South of 1st St.	14,429	4D	37,500	A	
1st St.	Broadway to Ross St.	50,535	6D	56,300	D	
1st St.	Main St. to Broadway	50,187	6D	56,300	D	
Civic Center Dr.	Sycamore St. to Main St.	20,043	4D	37,500	A	
Santa Ana Blvd.	Sycamore St. to Main St.	13,618	3D	28,150	A	
5th St.	Sycamore St. to Broadway	11,163	3D	28,150	A	
5th St.	Sycamore St. to Main St.	11,207	3D	28,150	A	
Main St.	Civic Center Dr. to Santa Ana Blvd.	41,909	4D	37,500	F	
Main St.	Civic Center Dr. to Washington Ave	42,761	4D	37,500	F	
Civic Center Dr.	Main St. to Bush St.	15,878	4D	37,500	A	
Main St.	Santa Ana Blvd. To 5th St.	43,981	4D	37,500	F	
Santa Ana Blvd.	Main St. to Bush St.	14,503	3D	28,150	A	
Main St.	5th St. to 4th St.	44,041	4U	25,000	F	
5th St.	Main St. to Bush St.	10,266	3D	28,150	A	
Main St.	3rd St. to 4th St.	39,921	4D	37,500	F	
Main St.	1st St. to 3rd St.	39,888	4D	37,500	F	
Santa Ana Blvd.	Bush St. to Spurgeon St.	13,579	3D	28,150	A	
5th St.	Bush St. to French St.	8,201	3D	28,150	A	
1st St.	Spurgeon St. to Main St.	51,695	6D	56,300	E	E ok
Santa Ana Blvd.	Lacy St. Standard Ave	18,810	4D	37,500	A	
Civic Center Dr.	French St to Lacy St	16,469	4D	37,500	A	
Santa Ana Blvd.	Lacy St. to French St.	20,814	4D	37,500	A	
4th St.	Lacy St. to French St.	15,600	4D	37,500	A	
1st St.	Lacy St. to Spurgeon St.	51,789	6D	56,300	E	
1st St.	Lacy St. to Standard Ave	51,789	6D	56,300	E	
Santiago St.	Washington Ave to Civic Center Dr.	21,381	4D	37,500	A	
Santiago St.	Washington Ave. to 17th St.	18,366	4D	37,500	A	
Santiago St.	Santa Ana Blvd to Civic Center Dr.	22,615	4D	37,500	B	

Road	Segment	2035 WP ADT	Number of Lanes	LOSE Capacity	LOS	LOSE OK
Civic Center Dr.	Santiago St. to Lacy St	16,027	2U	12,500	F	
Civic Center Dr.	Lincoln Ave to Santiago St.	14,756	2U	12,500	F	
Santiago St.	Santa Ana Blvd. to Brown St.	10,966	4D	37,500	A	
Santa Ana Blvd.	Santiago St. to Lacy St	27,854	4D	37,500	C	
Santa Ana Blvd.	Santiago St. to U-24	30,916	6D	56,300	A	
4th St.	Lacy St. to Santiago St.	22,966	4D	37,500	B	
Grand Ave.	4th St. to Santa Ana Blvd	49,112	6D	56,300	D	
Grand Ave.	Santa Ana Blvd to 17th St.	51,315	6D	56,300	E	
Santa Ana Blvd.	East of Grand Ave.	9,869	4D	37,500	A	
Grand Ave.	1st St. to 4th St.	42,283	6D	56,300	C	
4th St.	Grand Ave to Santiago St.	24,962	4D	37,500	B	
4th St.	East of Grand Ave.	26,560	4D	37,500	C	
Grand Ave.	South of 1st St.	55,519	6D	56,300	E	
1st St.	Standard Ave to Grand Ave	53,605	6D	56,300	E	
1st St.	East of Grand Ave.	47,625	6D	56,300	D	
Penn Way	South of I-5 SB Ramps	16,671	2D	18,750	D	
Penn Way	North of I-5 SB Ramps	19,038	4D	37,500	A	
Santa Ana Blvd.	West of I-5 SB Ramps	53,014	6D	56,300	E	
Santa Ana Blvd.	East of I-5 SB Ramps	34,964	4D	37,500	E	
17th St.	West of I-5 NB Ramps	56,794	6D	56,300	F	
17th St.	East of I-5 NB Ramps	45,103	6D	56,300	D	
Grand Ave.	South of I-5 NB Ramps	65,250	6D	56,300	F	
Grand Ave.	North of I-5 NB Ramps	59,734	6D	56,300	F	

8.3 General Plan (2035) With Project Peak Hour Freeway Ramp Conditions

The 2035 With Project peak hour ramp analysis results are presented on Table 8-4 All ramps operate at LOS D or better during the AM and/or PM peak hour time periods except the northbound off ramp at the interchange of I-5 at Santa Ana Boulevard.

Table 8-4 2035 With Project Peak Hour Freeway Ramp Analysis

INTER-CHANGE	RAMP	RAMP TYPE CODE ¹	LANES	PEAK HOUR CAPACITY	AM PEAK HOUR		PM PEAK HOUR			
					VOL	V/C	VOL	V/C	LOS	LOS
I-5 at 17th St.	SB On	4	2	1,800	869	0.48	A	1,005	0.56	A
	NB Loop On	4	2	1,800	310	0.17	A	447	0.25	A
	SB Off	5	1	1,500	526	0.35	A	600	0.40	A
I-5 at Santa Ana Blvd.	NB Off	5	1	1,500	910	0.61	A	1,054	0.70	B
	SB Direct On (HOV)	6	2	2,250	402	0.18	A	487	0.22	A
	SB Loop On	4	2	1,800	559	0.31	A	800	0.44	A
	NB Loop On	4	2	1,800	673	0.37	A	857	0.48	A
	SB Off	5	1	1,500	630	0.42	A	656	0.44	A
	NB Off	5	1	1,500	1,312	0.87	D	1,789	1.19	F

Note 1: Reference to Freeway Ramp Capacity Assumptions Table
 4 - Two-lane Metered On-Ramp, 2 Mixed Flow Lanes at Meter
 5 - One-lane Unmetered Ramp
 6 - Two-lane Unmetered On-Ramp, tapers to one merge lane at or beyond gore point

9. DETERMINATION OF SIGNIFICANT IMPACT

Traffic impacts are identified if the proposed project will result in a significant change in traffic conditions on a roadway or at an intersection. A significant impact is normally defined when project related traffic would cause level of service to deteriorate to below the minimum acceptable level by a measurable amount. A cumulative impact may also be significant if the location is already below the minimum acceptable level or forecast without the project to be below the minimum acceptable level and project related traffic causes a further decline.

The City of Santa Ana considers LOS D as the threshold for an acceptable service level for intersections located outside of Major Development Areas (MDA). The City considers LOS E as the maximum threshold for acceptable service levels for intersections located within an MDA. If the project contribution to the volume/capacity ratio at the intersection is greater than .01 and if the location is at Level of Service D or poorer outside of an MDA or Level of Service E or poorer within an MDA, the impact is considered significant.

For those signalized intersections which may not contribute to 0.01 or greater ICU or V/C increases, the City may require a fair share contribution toward the expected cost of improvements at the subject intersection. The fair share is based upon the project's relative contribution toward the total future added traffic, which consists of traffic from the project, other cumulative project traffic, and growth of ambient background traffic.

Unsignalized intersection analysis follows the City's criteria to use the HCM unsignalized analysis methodology. HCM indicates that level of service for unsignalized intersection is based upon the control delay for the poorest movement of the intersection, which is assessed for those traffic movements that are stopped or must yield to through traffic. Some movements, including cross traffic on the minor street or left turns onto the major street, can be subject to long delays, however through traffic and right turns from the major street will not experience any delays at stopped intersections. When delay for cross traffic is severe (Level of Service E or F), the intersection should be evaluated further for possible improvement with traffic signals. In some cases, this analysis determines that the delay is being experienced by a very low number of vehicles and traffic signals are not warranted. In other cases, the number of stopped vehicles is substantial and traffic signals may be justified as a mitigation measure.

Table 9-1 through Table 9-5 indicate the comparison of With and Without Project conditions in order to determine the project impact. As indicated, the signalized intersections which may have unacceptable level of service and project impacts under 2030 conditions per ICU (V/C) calculations include the following (ICU difference > 0.01):

- Grand Avenue at Santa Ana Boulevard

For 2035 conditions, the following additional signalized intersections have potential project impacts (ICU difference > 0.01):

- Main Street at 1st Street
- Santiago Street at Santa Ana Boulevard
- Standard Street (Santiago Street) at 1st Street
- Grand Avenue at Santa Ana boulevard
- Grand Avenue at 1st Street

The intersection of Grand Avenue at I-5 NB Ramps and 17th Street at I-5 NB Ramps will operate at LOS E or F under future conditions but the project does not impose a 0.01 V/C increase for the With Project scenario. However, it may contribute to cumulative future conditions.

For unsignalized intersections, the following two intersections warrant traffic signals under existing conditions and therefore traffic signals are assumed for future improvement scenarios:

- Santiago Street at Washington Avenue
- Santiago Street at Civic Center Drive

In addition, the following unsignalized intersections warrant signals under 2030 conditions. It is considered a cumulative impact.

- Lacy Street at 1st Street
- Lacy Street at Santa Ana Boulevard
- Santiago Street at 4th Street

The following unsignalized intersections do not warrant traffic signals but operate at LOS F for the worst movement, which is due to cross traffic on the minor street or left turns onto the major street subject to long delays. Through traffic and right turns from the major street will not experience any delays at stopped intersections, however.

- Lacy Street at Civic Center Drive
- Mortimer Street at 5th Street
- U2-4 at Santa Ana Boulevard (Future Intersection)

For the intersection of U2-4 at Santa Ana Boulevard, since it is a new intersection and closely spaced with the I-5 interchange, it is suggested to be designed as right-in and right-out access only.

**Table 9-1
Determination of Impacts
for 2030 Peak Hour (ICU)**

Intersection	AM Peak Hour			PM Peak Hour		
	2030 NP (ICU) / Level of Service)	2030 WP (ICU) / Level of Service)	Increase / Decrease	2030 NP (ICU) / Level of Service)	2030 WP (ICU) / Level of Service)	Increase / Decrease
Signalized Intersections (Using ICU Method)						
Flower St. at Civic Center Dr.	0.683 / B	0.678 / B	-0.005	NO	0.734 / C	0.758 / C
Flower St. at Santa Ana Blvd.	0.572 / A	0.587 / A	0.015	NO	0.587 / A	0.596 / A
Parson St. at Santa Ana Blvd.	0.278 / A	0.274 / A	-0.004	NO	0.372 / A	0.377 / A
Ross St. at Civic Center Dr.	0.517 / A	0.538 / A	0.021	NO	0.474 / A	0.504 / A
Ross St. at Santa Ana Blvd.	0.475 / A	0.476 / A	0.001	NO	0.395 / A	0.429 / A
Broadway at Civic Center Dr.	0.614 / B	0.634 / B	0.020	NO	0.643 / B	0.654 / B
Broadway at Santa Ana Blvd.	0.468 / A	0.491 / A	0.023	NO	0.522 / A	0.534 / A
Broadway at 5th St.	0.349 / A	0.354 / A	0.005	NO	0.462 / A	0.486 / A
Broadway at 4th St.	0.298 / A	0.354 / A	0.056	NO	0.409 / A	0.437 / A
Broadway at 3rd St.	0.336 / A	0.338 / A	0.002	NO	0.613 / B	0.643 / B
Broadway at 1st St.	0.651 / B	0.654 / B	0.003	NO	0.729 / C	0.753 / C
Sycamore St. at Civic Center Dr.	0.420 / A	0.439 / A	0.019	NO	0.495 / A	0.525 / A
Main St. at Civic Center Dr.	0.751 / C	0.774 / C	0.023	NO	0.750 / C	0.804 / D
Main St. at Santa Ana Blvd.	0.654 / B	0.666 / B	0.012	NO	0.693 / B	0.726 / C
Main St. at 5th St.	0.499 / A	0.511 / A	0.012	NO	0.633 / B	0.664 / B
Main St. at 4th St.	0.508 / A	0.555 / A	0.047	NO	0.654 / B	0.726 / C
Main St. at 3rd St.	0.464 / A	0.490 / A	0.026	NO	0.603 / B	0.641 / B
Main St. at 1st St.	0.773 / C	0.771 / C	-0.002	NO	0.872 / D	0.956 / E
Bush St. at Santa Ana Blvd.	0.295 / A	0.305 / A	0.010	NO	0.403 / A	0.409 / A
Bush St. at 5th St.	0.242 / A	0.242 / A	0.000	NO	0.442 / A	0.458 / A
Bush St. at 4th St.	0.270 / A	0.280 / A	0.010	NO	0.464 / A	0.490 / A
French St. at 4th St.	0.291 / A	0.308 / A	0.017	NO	0.462 / A	0.488 / A
Lacy St. at 4th St.	0.407 / A	0.398 / A	-0.009	NO	0.567 / A	0.632 / B

Intersection	AM Peak Hour			PM Peak Hour		
	2030 NP (ICU) / Level of Service)	2030 WP (ICU) / Level of Service)	Increase / Decrease	2030 NP (ICU) / Level of Service)	2030 WP (ICU) / Level of Service)	Increase / Decrease
Signalized Intersections (Using ICU Method)						
Santiago St. at Santa Ana Blvd.	0.541 / A	0.544 / A	0.003	NO	0.677 / B	0.690 / B
Standard St. at 1st St.	0.808 / D	0.825 / D	0.017	NO	0.833 / D	0.851 / D
Grand Ave. at Santa Ana Blvd.	0.866 / D	0.877 / D	0.011	NO	0.972 / E	0.987 / E
Grand Ave. at 4th St.	0.646 / B	0.664 / B	0.018	NO	0.728 / C	0.767 / C
Grand Ave. at 1st St.	0.700 / C	0.724 / C	0.024	NO	0.777 / C	0.816 / D

Note 1: ICU=Intersection Capacity Utilization

Table 9-2
Determination of Impacts
for 2030 Peak Hour (HCM)

Intersection	AM Peak Hour			PM Peak Hour		
	2030 NP (Average/Worst Case Delay) / LOS ²	2030 WP (Average/Worst Case Delay) / LOS ²	Significant Impact	2030 NP (Average/Worst Case Delay) / LOS ²	2030 WP (Average/Worst Case Delay) / LOS ²	Significant Impact
Unsignalized Intersections						
Ross St. at 4th St.	10.8 / B	10.9 / B	NO	12.3 / B	12.4 / B	NO
Sycamore St. at Santa Ana Blvd.	21.8 / C	24.0 / C	NO	20.8 / B	22.9 / C	NO
Sycamore St. at 5th St.	15.7 / C	16.0 / C	NO	13.7 / B	15.4 / C	NO
Sycamore St. at 4th St.	7.9 / A	8.1 / A	NO	9.1 / A	9.7 / A	NO
Spurgeon St. at 1st St.	10.5 / B	10.5 / B	NO	14.6 / B	15.4 / C	NO
French St. at Santa Ana Blvd.	19.7 / C	19.3 / C	NO	17.7 / C	20.2 / C	NO
Lacy St. at Civic Center Dr.	20.3 / C	25.4 / D	NO	33.2 / D	44.8 / E	NEED EVAL
Lacy St. at Santa Ana Blvd.	34.2 / D	31.1 / D	NO	51.6 / F	375.3 / F	NEED EVAL
Lacy St. at 6th St.	7.2 / A	7.3 / A	NO	7.9 / A	8.3 / A	NO
Lacy St. at 1st St.	23.3 / C	32.5 / D	NO	57.2 / F	OVREL / F	NEED EVAL
Santiago St. at Washington Ave.	17.1 / B	16.3 / C	NO	26.9 / D	34.5 / D	N
Santiago St. at Civic Center Dr.	26.2 / D	23.5 / C	NO	26.3 / D	42.6 / E	NEED EVAL
Santiago St. at Brown St.	N/A	12.1 / B	NO	N/A	13.9 / B	N
Santiago St. at 6th St.	N/A	11.3 / B	NO	N/A	13.0 / B	N
Santiago St. at 4th St.	N/A	OVREL / F	NEED EVAL	N/A	OVREL / F	NEED EVAL
Mortimer St. at 5th St.	20.3 / C	9.0 / A	N	17.8 / C	40.2 / E	NEED EVAL
Mortimer St. at Santa Ana Blvd.	9.0 / A	21.8 / C	N	21.4 / C	23.5 / C	N
U2.4 at Santa Ana Blvd.	N/A	45.7 / E	NEED EVAL	N/A	51.2 / F	NEED EVAL
Signalized Intersections (Caltrans, Using HCM)						
Penn Way at I-5 SB	0.462 / C	0.439 / C	NO	0.458 / C	0.473 / C	NO
Santa Ana Blvd. at I-5 SB	0.499 / C	0.524 / C	NO	0.520 / C	0.685 / C	NO
I77-St. at I-5 NB	0.782 / C	0.780 / C	NO	0.958 / D	0.960 / D	NO
Grand Ave at I-5 NB	0.648 / C	0.625 / C	NO	1.042 / D	1.050 / D	NO

Note 1: Delay = Seconds per vehicle average, poorest movement

Note 2: LOS=Level of Service

Need Eval = Need evaluation to see if the intersection warrants a traffic signal

Table 9-3
Determination of Impacts
for 2035 Peak Hour (ICU)

Intersection	AM Peak Hour			PM Peak Hour			
	2035 NP (ICU) / Level of Service)	2035 WP (ICU) / Level of Service)	Increase / Decrease	2035 NP (ICU) / Level of Service)	2035 WP (ICU) / Level of Service)	Increase / Decrease	Significant Impact
Signalized Intersections (Using ICU Method)							
Flower St. at Civic Center Dr.	0.789 / C	0.784 / C	-0.005	1.138 / F	1.146 / F	0.008	NO
Flower St. at Santa Ana Blvd.	0.685 / B	0.695 / B	0.010	0.694 / B	0.703 / C	0.009	NO
Parson St. at Santa Ana Blvd.	0.316 / A	0.313 / A	-0.003	0.428 / A	0.434 / A	0.006	NO
Ross St. at Civic Center Dr.	0.634 / B	0.652 / B	0.018	0.564 / A	0.594 / A	0.030	NO
Ross St. at Santa Ana Blvd.	0.581 / A	0.582 / A	0.001	0.668 / B	0.693 / B	0.025	NO
Broadway at Civic Center Dr.	0.721 / C	0.740 / C	0.019	0.743 / C	0.754 / C	0.011	NO
Broadway at Santa Ana Blvd.	0.595 / A	0.618 / B	0.023	0.612 / B	0.624 / B	0.012	NO
Broadway at 5th St.	0.399 / A	0.404 / A	0.005	0.620 / B	0.645 / B	0.025	NO
Broadway at 4th St.	0.449 / A	0.477 / A	0.028	0.610 / B	0.659 / B	0.049	NO
Broadway at 3rd St.	0.406 / A	0.409 / A	0.003	0.803 / D	0.833 / D	0.030	NO
Broadway at 1st St.	0.779 / C	0.778 / C	-0.001	0.844 / D	0.868 / D	0.024	NO
Sycamore St. at Civic Center Dr.	0.484 / A	0.502 / A	0.018	0.573 / A	0.603 / B	0.030	NO
Main St. at Civic Center Dr.	0.875 / D	0.899 / D	0.024	0.883 / D	0.938 / E	0.055	NO
Main St. at Santa Ana Blvd.	0.799 / C	0.81 / D	0.011	0.836 / D	0.869 / D	0.033	NO
Main St. at 5th St.	0.611 / B	0.623 / B	0.012	0.812 / D	0.843 / D	0.031	NO
Main St. at 4th St.	0.613 / B	0.654 / B	0.041	0.776 / C	0.847 / D	0.071	NO
Main St. at 3rd St.	0.533 / A	0.559 / A	0.026	0.694 / B	0.730 / C	0.036	NO
Main St. at 1st St.	0.918 / E	0.927 / E	0.009	1.013 / F	1.097 / F	0.084	YES
Bush St. at Santa Ana Blvd.	0.335 / A	0.346 / A	0.011	0.462 / A	0.467 / A	0.005	NO
Bush St. at 5th St.	0.297 / A	0.296 / A	-0.001	0.560 / A	0.577 / A	0.017	NO
Bush St. at 4th St.	0.347 / A	0.357 / A	0.010	0.576 / A	0.602 / B	0.026	NO
French St. at 4th St.	0.342 / A	0.359 / A	0.017	0.543 / A	0.568 / A	0.025	NO
Lacy St. at 4th St.	0.508 / A	0.465 / A	-0.043	0.751 / C	0.814 / D	0.063	NO

Intersection	AM Peak Hour			PM Peak Hour		
	2035 NP (ICU) / Level of Service)	2035 WP (ICU) / Level of Service)	Significant Impact	2035 NP (ICU) / Level of Service)	2035 WP (ICU) / Level of Service)	Significant Impact
Santiago St. at Santa Ana Blvd.	0.904 / E	0.865 / D	-0.039	0.993 / E	1.011 / F	0.018
Standard St. at 1st St.	0.940 / E	0.957 / E	0.017	0.970 / E	0.988 / E	0.018
Grand Ave. at Santa Ana Blvd.	1.178 / F	1.188 / F	0.010	1.312 / F	1.314 / F	0.002
Grand Ave. at 4th St.	0.747 / C	0.754 / C	0.007	0.841 / D	0.875 / D	0.034
Grand Ave. at 1st St.	0.894 / D	0.918 / E	0.024	0.960 / E	0.998 / E	0.038

Note 1: ICU=Intersection Capacity Utilization

Table 9-4
Determination of Impacts
for 2035 Peak Hour (HCM)

Intersection	AM Peak Hour			PM Peak Hour		
	2035 NP (Average/Worst Case Delay) / LOS ²	2035 WP (Average/Worst Case Delay) / LOS ²	Significant Impact	2035 NP (Average/Worst Case Delay) / LOS ²	2035 WP (Average/Worst Case Delay) / LOS ²	Significant Impact
Unsignalized Intersections						
Ross St. at 4th St.	11.7 / B	11.9 / B	NO	13.6 / B	13.8 / B	NO
Sycamore St. at Santa Ana Blvd.	28.7 / D	32.4 / D	NO	29.8 / D	34.5 / D	NO
Sycamore St. at 5th St.	19.2 / C	19.7 / C	NO	15.7 / C	18.1 / C	NO
Sycamore St. at 4th St.	8.4 / A	8.6 / A	NO	9.8 / A	10.5 / B	NO
Spurgeon St. at 1st St.	11.3 / B	11.3 / B	NO	18.7 / C	20.0 / C	NO
French St. at Santa Ana Blvd.	24.5 / C	26.1 / D	NO	24.0 / C	29.6 / D	NO
Lacy St. at Civic Center Dr.	28.6 / D	37.9 / E	NEED EVAL	69.9 / F	113.5 / F	NEED EVAL
Lacy St. at Santa Ana Blvd.	122.1 / F	55.7 / F	NEED EVAL	179.1 / F	OVREL / F	NEED EVAL
Lacy St. at 6th St.	7.3 / A	7.4 / A	NO	8.1 / A	8.6 / A	NO
Lacy St. at 1st St.	45.3 / E	97.4 / F	NEED EVAL	410.8 / F	OVREL / F	NEED EVAL
Santiago St. at Washington Ave.	126.8 / F	112.3 / F	NEED EVAL	143.1 / F	164.9 / F	NEED EVAL
Santiago St. at Civic Center Dr.	280.0 / F	263.9 / F	NEED EVAL	221.7 / F	266.2 / F	NEED EVAL
Santiago St. at Brown St.	N/A	16.7 / C	NO	N/A	19.7 / C	NO
Santiago St. at 6th St.	N/A	13.7 / B	NO	N/A	20.9 / C	NO
Santiago St. at 4th St.	N/A	OVREL / F	NEED EVAL	N/A	OVREL / F	NEED EVAL
Mortimer St. at 5th St.	9.5 / A	9.5 / A	NO	33.5 / D	64.4 / F	NEED EVAL
Mortimer St. at Santa Ana Blvd.	23.1 / A	324.2 / F	NEED EVAL	23.0 / C	35.8 / E	NEED EVAL
U2-4 at Santa Ana Blvd.	N/A	79.4 / F	NEED EVAL	N/A	130.8 / F	NEED EVAL
Signalized Intersections (Caltrans, Using HCM)						
Penn Way at I-5 SB	0.569 / C	0.546 / C	NO	0.658 / C	0.672 / C	NO
Santa Ana Blvd. at I-5 SB	0.643 / C	0.668 / C	NO	0.615 / C	0.780 / C	NO
17c St. at I-5 NB	0.903 / D	0.901 / D	NO	1.108 / E	1.110 / E	NEED EVAL
Grand Ave at I-5 NB	0.934 / C	1.143 / E	NEED EVAL	1.316 / F	1.669 / F	NEED EVAL

Note 1: Delay = Seconds per vehicle average, poorest movement

Note 2: LOS=Level of Service

Need Eval = Need evaluation to see if the intersection warrants a traffic signal

Determination of Significant Impact

The intersection of Grand Avenue at I-5 NB Ramps and 17th Street at I-5 NB Ramps do not have a project impact with 0.01 ICU or more increase for the With Project scenario. However, they may contribute cumulative impact. Fair share should be considered for the improvement of these intersections.

For freeway ramp conditions, the analysis indicates that the I-5 Freeway Northbound Off Ramp at Santa Ana Boulevard will operate at an unacceptable level of service under Year 2030 and Year 2035 conditions. Table 9-5 indicates the comparison of With and Without Project conditions to determine the project impact. As indicated, this ramp will be significantly impacted by the project.

Table 9-5
Determination of Impacts
for I-5 NB Off Ramp at Santa Ana Blvd

Existing (PM)	2030 Without Project (PM)	2030 With Project (PM)	Increase / Decrease	Significant Impact
0.85 / D	0.94 / E	1.03 / F	0.09	YES
Existing (PM)	2035 Without Project (PM)	2035 With Project (PM)	Increase / Decrease	Significant Impact
0.85 / D	1.10 / F	1.19 / F	0.09	YES

Note 1: ICU=Intersection Capacity Utilization

10. SPECIAL ISSUES

Per the City's request, special issues including neighborhood traffic impacts, traffic calming measures, and parking requirements have been discussed and evaluated in the following sections.

10.1 Neighborhood Traffic Impact

Neighborhood traffic impacts may occur when traffic related to new developments uses inappropriate streets and/or drives in an inappropriate manner on sensitive streets. Streets susceptible to traffic impacts are primarily local residential streets, often with single family homes fronting on the street. The intended use for this type of street is to provide access to adjacent properties or properties in very close proximity to the street. They are not intended for through traffic. Excessive traffic, cut through traffic, and speeding are generally unwelcome on this type of street. These problems are often found to be directly related to the traffic volume on the street and prevailing speeds on the street.

Cut-through or inappropriate traffic can sometimes occur on residential streets due to congested traffic conditions on the arterial highway system that causes motorists to seek alternate routes by cutting through neighborhoods. In some cases, the through vehicles may drive through the neighborhood at speeds that are higher than average, higher than the posted speed limit, or higher than the speeds that residents may drive at. At other times, local residential streets may be found to be the shortest or most direct route between a driver's origin and destination due to the physical layout of the street system. In either case, unwelcome traffic can be found to be highly objectionable to residents. If this type of traffic is expected to increase significantly due to new developments, a significant impact may occur.

Some streets can become very controversial when they serve a dual function of providing access to local residences and being an important part of the City's arterial highway system. Streets within the study area, such as Santa Ana Boulevard or Civic Center Drive east of the downtown area can have these characteristics.

Evaluation of the neighborhood traffic impacts and the traffic calming measures that are implemented for this project follow the *City of Santa Ana Procedure for Neighborhood Traffic Management Plans* and other similar type of studies within City of Santa Ana. In the following sections, three existing neighborhoods traffic conditions and the existing diversion measures throughout the neighborhood are discussed. The characteristics of the project traffic, as it passes through the neighborhood are described. The recommendations to mitigate project traffic diversion are described.

Existing Neighborhood Traffic Conditions

Neighborhood traffic problems have been diagnosed, studied, and treated in three neighborhoods that are located near the study area. These are:

- French Court Neighborhood, bounded approximately by Washington Avenue, Bush Street, 17th Street, I-5, and Lincoln Street
- French Park Neighborhood, located generally south of French Court and north of Civic Center Drive
- Logan Neighborhood, located generally along Washington Avenue and Lincoln Street

Other street within the project area are not known to have significant existing neighborhood traffic issues, as represented by significant or regular indications to the City that local traffic conditions are unacceptable. However traffic levels on some streets in the area are approaching the range where residents may express concern if asked about local traffic conditions. Figure 10-1 shows the existing roadway network within the 3 neighborhoods. As indicated, the current local residential roadways include Spurgeon Street, French Street, Minter Street, Lacy Street, Garfield Street, Poinsettia Street, Logan Street, Lincoln Street, and Washington Avenue.

Figure 10-2 and Figure 10-3 show the existing AM and PM peak hour traffic volume (conducted in 2006) for the neighborhood intersections, respectively. The existing traffic volumes within the neighborhoods are relatively low, compared with traffic levels on the arterial road system, however traffic volumes on many of these streets are at levels that residents would consider undesirable. The highest volume occurs along Washington Avenue with a maximum of 321 westbound through vehicles during the AM peak hour and 393 eastbound through vehicles during PM peak hour. Other roadways carry less than 100 vehicles during peak hours. The roadways which carry significant through traffic volumes are Main Street, Santiago Street, 17th Street, Civic Center Drive and Santa Ana Boulevard.

Historically, the residents' concerns are in regard to the through traffic along Spurgeon Street and French Street within the neighborhood. Concerns also include speeding along Lacy Street.

The existing diversion measures throughout the French Court neighborhood include:

- Raised median on Seventeenth Street across Bush Street and French Street
- Cul-de-sac on Fifteenth Street at Penn Way

The most viable bypass route through the French Park neighborhood is Tenth Street/Minter Street. There are three all-way stop controlled intersections along the Tenth Street/Minter Street route, but there are no other existing diversion measures in the French Park neighborhood and Logan neighborhood.

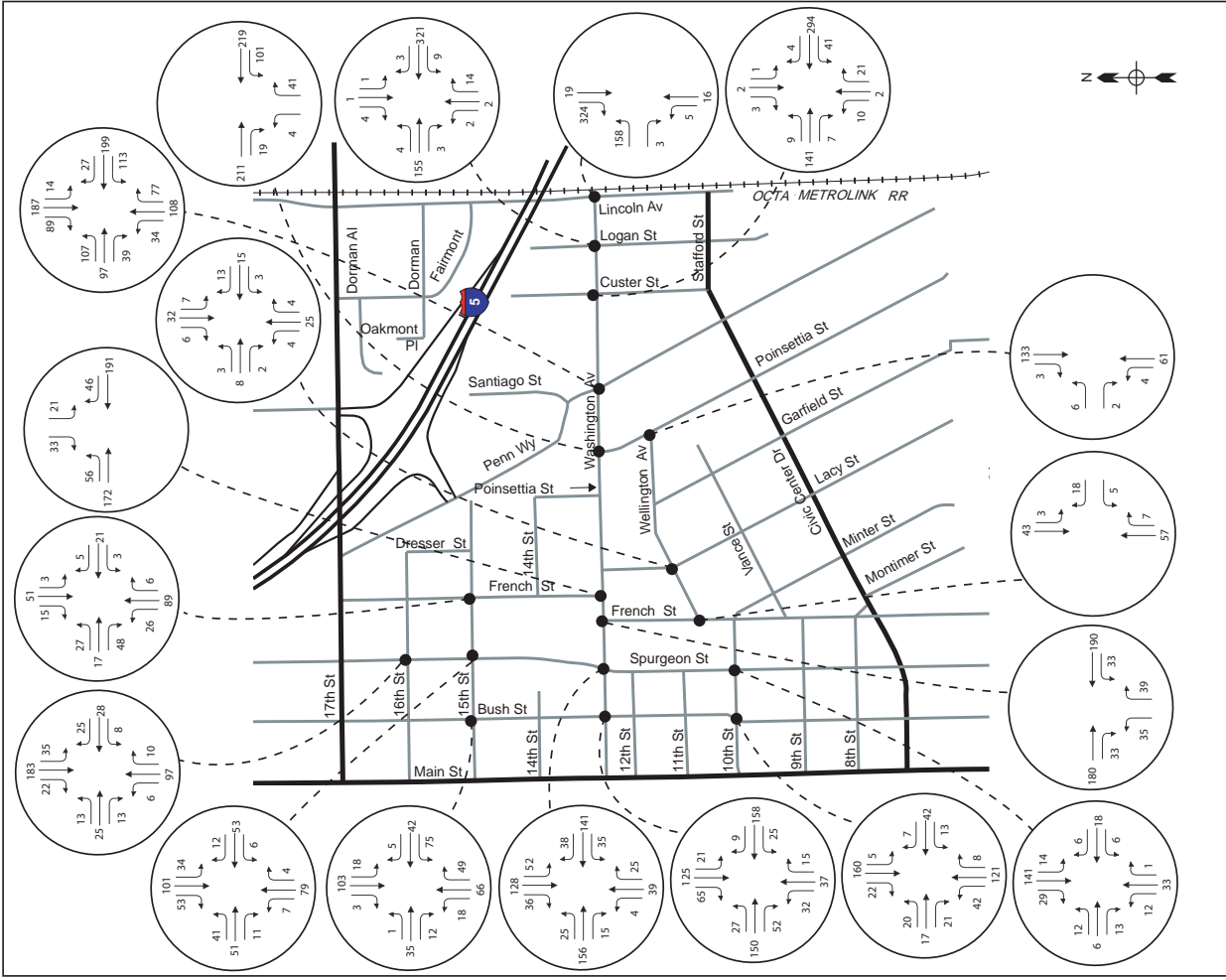
Potential Project Impacts

The project area is currently urban and developed with a wide range of civic, commercial, industrial and residential land uses. The proposed changes for the existing neighborhoods or districts include replacing most of the industrial and commercial uses with residential and some mixed-use developments.

Table 6-3 presented previously in Chapter 6 indicates the trip generation by each TAZ. As indicated, minimum trip generation increases are projected for most of the neighborhood area. In fact, TAZ 8, TAZ 9, and TAZ13 show negative ADT increase for the project trips due to the removal of existing industrial and commercial uses.



City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study
 Existing Neighborhood Roadway Network
 Figure 10-1



City of Santa Ana
 Santa Ana Renaissance Specific Plan Traffic Study
 Existing Neighborhood Int. AM Turning Volume
 Figure 10-2



Generally the traffic analysis forecasts minimal traffic increases on the local residential streets listed above. The distribution of land uses and their principle access routes is not conducive to through traffic use of the streets indicated above. Also, the amount of employment in the larger city center area is reduced slightly by the plan, which should result in an incremental decrease in traffic pressure upon the arterial street system, thus reducing the inducement to cut into neighborhoods.

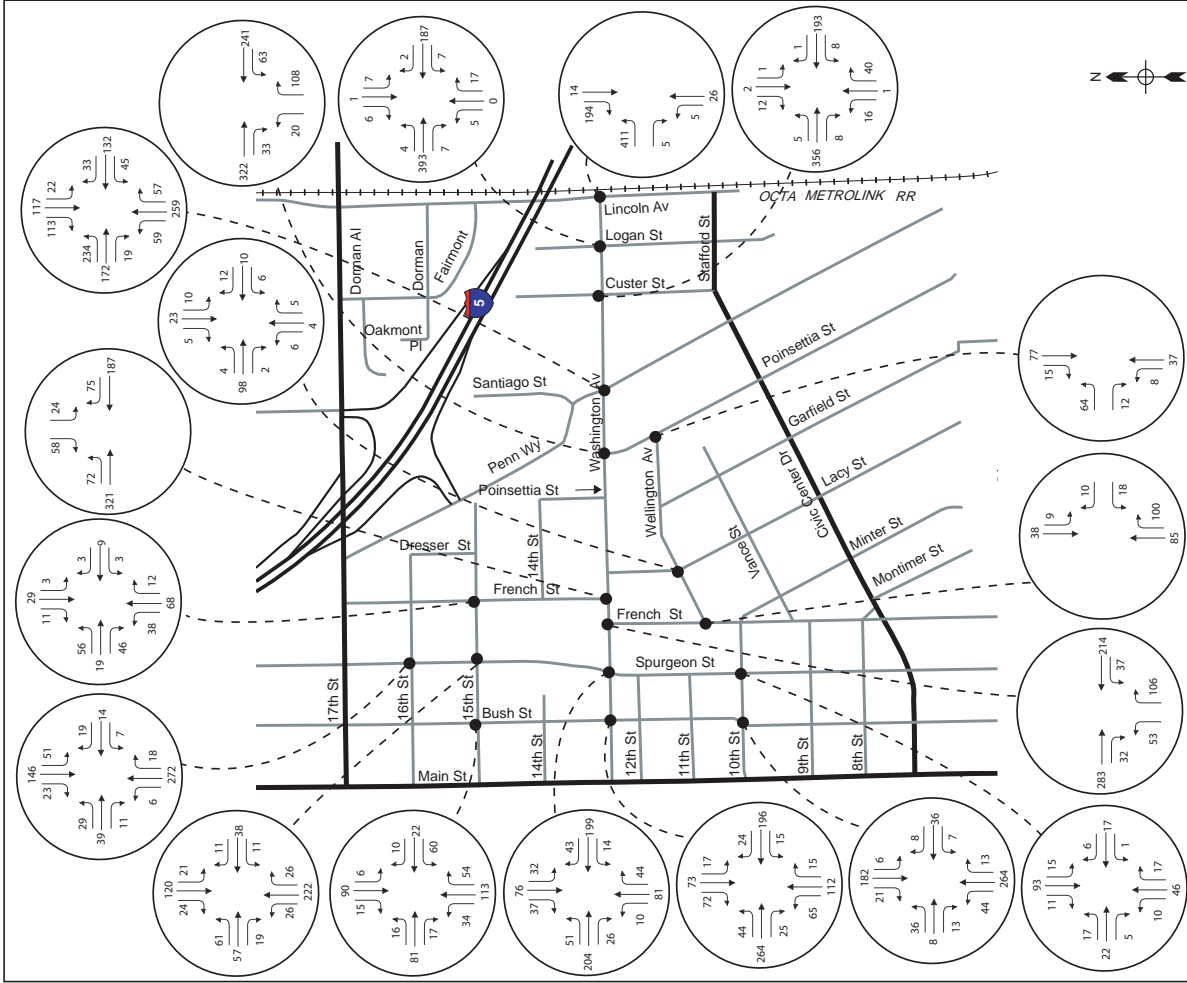
Due to the nature and location of the project, no significant negative impact is expected. However the science of forecasting neighborhood traffic is not precise. For example, a diversion level of say 0.5% cannot be reliably predicted, yet a new project could result in 1-2 additional vehicles use of an undesirable route. This level of increase may be very difficult to measure or confirm however, since normal daily variation in use by residents can greatly exceed the volume of through traffic increase that may occur due to a project. For this reason, there is a potential for an incremental impact resulting from trace increases in usage of impacted streets.

Positive neighborhood impact can be expected from the project due to roadway improvements proposed by the project. As part of this project and the City's General Plan Circulation Element, Santiago Street will be improved as a secondary Arterial and connect with Standard Avenue. This will increase the traffic connectivity between north and south and ease the traffic along Main Street and north-south local residential roadways. The industrial uses along Santiago Street will be replaced by residential development. Brown Street, 6th Street and 5th Street will connect to Santiago Street as local roadways. New residential roadways are also proposed east of Lincoln Street to serve the proposed residential development in the area.

Potential Mitigation Measures

The project is expected to increase traffic volumes on some of the internal roadways within the project area. Although the increase may not be significant there may be opportunities to mitigate the negative effects of increased traffic through incorporation of measures into the design of the local street system. Features that are regularly incorporated in the neighborhood traffic calming programs may be appropriate for systematic inclusion into the proposed project. This could include systematic uses of traffic calming treatments such as curb extensions at local intersections, short medians at entries to wide streets, or traffic circles at oversized intersections. These measures can be further enhanced with landscaping, monuments, neighborhood identity features or other elements. When used properly these features can reduce traffic speeds to acceptable ranges and can discourage some of the cut through traffic due to convenience and speed reduction.

Many of the streets in the study area appear to have severely distressed pavement, potentially requiring complete reconstruction of the pavement. The cost of implementing traffic calming measures as noted above can be quite nominal when done in conjunction with needed street reconstruction.



City of Santa Ana
Santa Ana Renaissance Specific Plan Traffic Study
Existing Neighborhood Int. PM Turning Volume
Figure 10-3



Special Issues

It is suggested that systematic application of traffic calming features be considered particularly in conjunction with street reconstruction, improvements adjacent to properties that change use, or at locations where traffic problems become evident in the future.

It is also suggested that funds need to be reserved for implementing traffic calming for the neighborhood roadways. If residents find concern over traffic increase that are related to the project, the city process of developing and implementing neighborhood traffic management plans can be applied.

10.2 Parking Issues

Parking usage varies from light to heavy throughout the existing specific area. While some residential areas show heavy on-street parking, most areas with heavy parking demand appear to have commercial uses with inadequate off street parking nearby.

With the proposed project, conversion from industrial to residential uses should reduce the source of existing on-street parking demand. Residential parking demand for new uses can be managed by maintaining parking development standards such as those found in the city's municipal code. Shared parking for the mixed-use development should also be applied based on *Shared Parking*, second edition, published by the Urban Land Institute (ULI).

In general, the provision for on-street parking and off-street parking will be consistent with the City's general policy, goal and plan. It is suggested that on street parking will be reduced by application of appropriate off street parking supplies for new developments.

11. MITIGATION AND COST ESTIMATES

Based upon intersection level of service analysis, several study intersections will be significantly impacted by project related traffic in Anticipated Project Buildout Year (2030) and Long Range Horizon Year (2035). The following are the recommended mitigation measures:

Main Street at 1st Street

The recommended improvement for this intersection is to construct second northbound and southbound left-turn lanes and a dedicated northbound right turn lane for 2030 and 2035 conditions.

Lacy Street at Santa Ana Boulevard

The recommended improvement for this intersection is to install a traffic signal and provide exclusive left turn lane for both northbound and southbound directions for both 2030 and 2035 conditions.

Lacy Street at 1st Street

The recommended improvement for this intersection is to install a traffic signal for both 2030 and 2035 conditions.

Santiago Street at Washington Avenue

The recommended improvement for this intersection is to install a traffic signal and provide one exclusive left turn lane for both eastbound and westbound traffic for 2035 conditions only.

Santiago Street at Civic Center Drive

The recommended improvement for this intersection is to install a traffic signal and provide: one exclusive left turn lane, one through lane, and one shared through and right turn lane on northbound and southbound approaches; and one exclusive left turn lane and one shared through and right lane on eastbound and westbound approaches. The improvement is only needed for 2035 conditions.

Santiago Street at Santa Ana Boulevard

The recommended improvement for this intersection is to construct a second southbound left turn lane for 2035 conditions. The improvement is only needed for 2035 conditions.

Santiago Street at 4th Street

The recommended improvement for this intersection is to install a traffic signal. The lane configuration for the signal is recommended as 1 Left, 1 Through, 1 Through+Right for all approaches.

Standard Street at 1st Street

The recommended improvement for this intersection is to construct third eastbound and westbound shared through-right lanes for 2035 conditions. The improvement is only needed for 2035 conditions.

Mitigation and Cost Estimates

Grand Avenue at Santa Ana Boulevard

The recommended improvement for this intersection is to construct a third southbound through lane and eastbound right-turn overlap signal phasing.

Grand Avenue at 1st Street

The recommended improvement for this intersection is to construct a third eastbound shared through/right turn lane, a third westbound shared through/right turn lane, and a third northbound through lane with dedicated northbound right-turn lane for 2035 conditions. The improvement is only needed for 2035 conditions.

Grand Avenue at I-5 Northbound Ramps

The recommended improvement for this intersection is to construct a second westbound right turn lane and for the I-5 northbound off ramp under both 2030 and 2035 conditions.

The following 3 unsignalized intersections do not warrant traffic signals and will operate at LOS F for the worst movement due to cross traffic on the minor street or left turns onto the major street subject to long delays. For the intersection of U2-4 at Santa Ana Boulevard, since it is a new intersection for the project access, closely spaced with the I-5 interchange, it is suggested to be designed as right-in and right-out only access, which will operate at LOS B or better for all scenarios. For the other two unsignalized intersections, KOA Corporation recommends providing roundabout traffic controls or monitoring the traffic volumes and installing a traffic signal when it is warranted.

- Lacy Street at Civic Center Drive
- Mortimer Street at 5th Street
- U2-4 at Santa Ana Boulevard

The intersection improvements described above are illustrated on Figure 11-1. The ICU and Level of Service calculation for the mitigation improvements for summarized in Table 11-1 through Table 11-4. The analysis worksheets for mitigations are included in Appendix J.

For freeway ramps, the I-5 at Santa Ana Boulevard Northbound Off ramp is recommended to add the second ramp lane in order to mitigate the project impact. With two ramp lanes, the ramp will operate at LOS C or better for all scenarios.

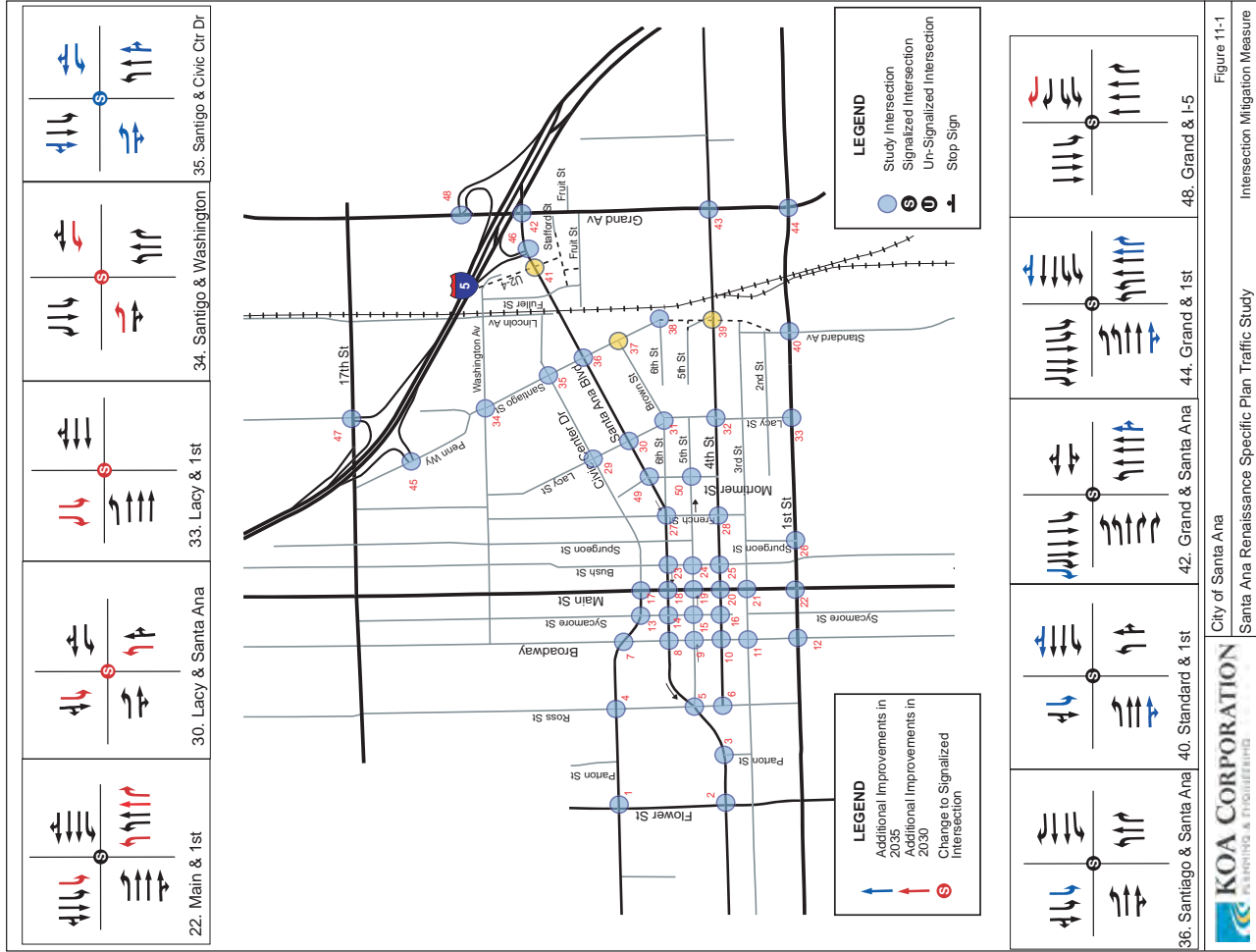


Table 11-1 - Level of Service Analysis of Mitigation for 2030 AM Peak Hour Conditions

Intersection	Existing	2030 without Project	2030 with Project	Mitigation with Project	Significant Impact?
	ICU (Delay)/LOS	ICU (Delay)/LOS	ICU (Delay)/LOS	ICU (Delay)/LOS	
Main Street at 1st Street	0.693/B	0.773/C	0.771/C	0.782/C	No
Grand Avenue at Santa Ana Boulevard	0.792/C	0.807/D	0.793/C	0.832/D	No

Note: Delay shown in seconds (**) for unsignalized intersections and Caltrans' intersections;

Table 11-2 - Level of Service Analysis of Mitigation for 2030 PM Peak Hour Conditions

Intersection	Existing	2030 without Project	2030 with Project	Mitigation with Project	Significant Impact?
	ICU (Delay)/LOS	ICU (Delay)/LOS	ICU (Delay)/LOS	ICU (Delay)/LOS	
Main Street at 1st Street	0.765/C	0.872/D	0.956/E	0.886/D	No
Grand Avenue at Santa Ana Boulevard	0.888/D	0.902/E	0.987/E	0.887/D	No

Note: Delay shown in seconds (**) for unsignalized intersections and Caltrans' intersections;

Table 11-3 - Level of Service Analysis of Mitigation for 2035 AM Peak Hour Conditions

Intersection	Existing	2035 without Project	2035 with Project	Mitigation with Project	Significant Impact?
	ICU (Delay)/LOS	ICU (Delay)/LOS	ICU (Delay)/LOS	ICU (Delay)/LOS	
Main Street at 1st Street	0.693/B	0.918/E	0.927/E	0.856/D	No
Santiago Street at Santa Ana Boulevard	0.481/A	0.904/E	0.865/D	0.831/D	No
Grand Avenue at 1st Street	0.764/C	0.894/D	0.918/E	0.851/D	No
Standard Street (Santiago Street) at 1st Street	0.723/C	0.940/E	0.957/E	0.764/C	No
Grand Avenue at I-5 NB Ramps	(19.8)/B	(30.2)/C	(79.9)/E	(27.1)/C	No
Unsignalized Intersections, to be Signalized					
Santiago Street at Washington Avenue	(12.7)/B	(126.8)/F	(112.3)/F	0.813/D	No
Santiago Street at Civic Center Drive	(14.5)/B	(280.0)/F	(263.9)/F	0.820/D	No
Santiago St at 4th St	N/A	N/A	OVREL/F	0.538/A	No
Lacy Street at Santa Ana Boulevard	(25.3)/D	(122.1)/F	(55.7)/F	0.753/C	No
Lacy St at 1st St	(16.6)/C	(45.3)/E	(97.4)/F	0.482/A	No

Note: Delay shown in seconds (**) for unsignalized intersections and Caltrans' intersections;

Table 11-4 - Level of Service Analysis of Mitigation for 2035 PM Peak Hour Conditions

Intersection	Existing (Delay)/LOS	2035 without Project (Delay)/LOS	2035 with Project (Delay)/LOS	Mitigation with Project ICU (Delay)/LOS	Significant Impact?
Main Street at 1st Street	0.765/C	1.013/F	1.097/F	0.977/E	No
Santiago Street at Santa Ana Boulevard	0.579/A	0.993/E	1.011/F	0.867/D	No
Grand Avenue at 1st Street	0.808/D	0.960/E	0.998/E	0.866/D	No
Standard Street (Santiago Street) at 1st Street	0.719/C	0.970/E	0.988/E	0.818/D	No
Grand Avenue at I-5 NB Ramps	(62.3)/E	(119.9)/F	(182.8)/F	(35.7)/D	No
Unsignalized Intersections, to be Signalized					
Santiago Street at Washington Avenue	(18.1)/C	(143.1)/F	(164.9)/F	0.843/D	No
Santiago Street at Civic Center Drive	(17.4)/C	(221.7)/F	(266.2)/F	0.835/D	No
Santiago St. at 4 th St	N/A	N/A	Overflow/F	0.662/B	No
Lacy Street at Santa Ana Boulevard	(33.4)/D	(179.1)/F	Overflow/F	0.706/C	No
Lacy St. at 1 st St	(23.2)/C	(410.8)/F	Overflow/F	0.647/B	No

Note 2: Delay shown in seconds (*) for unsignalized intersections;

Improvements which will eliminate all anticipated roadway operational deficiencies throughout the study area have been identified for 2030 and 2035 traffic conditions. The approximate costs for the improvements have been estimated to provide a rough order of magnitude of the cost for the improvements. As indicated on Table 11-5, the total cost for the ultimate improvements is \$6,150,000.

Table 11-5 – Mitigation Cost Estimates

INTERSECTION	2030 With Project With Improvements	2035 With Project With Improvements	Total Costs
Main St. at First St.	Add 2nd SB Left Turn Lane Add 2nd NB Left Turn Lane Add NB Right Turn Lane		\$1,700,000
Lacy St. at Santa Ana Bl.	Add 2nd SB Left Turn Lane Add 2nd NB Left Turn Lane Signalize Intersection	None	\$250,000
Lacy St. at 1st St.	Add 1st SB Left Turn Lane Signalize Intersection	None	\$250,000
Santiago St. at Washington St.	Add 2nd EB Left Turn Lane Add 2nd WB Left Turn Lane Signalize Intersection	None	\$250,000
Santiago St. at Civic Center Dr.	None	Signalize Intersection Add 1 st WB Left Turn Lane Add 1 st EB Left Turn Lane Add Through+Right NB & SB Add 2nd SB Left Turn Lane	\$250,000 \$100,000 \$100,000 \$200,000 \$100,000
Santiago St. at Santa Ana Bl.	None	None	\$100,000
Standard Ave at First St.	None	Add 1 st SB Left Turn Lane Add EB & WB Shared Through+Rt	\$700,000 \$500,000
Grand Ave at Santa Ana Bl.	None	Add 4th NB Shared Through+Rt Add 2 nd SB Right Turn Lane	\$500,000* \$100,000*
Grand Ave at First St.	None	Add 3rd WB and EB Shared Through + Right Lanes Add 3 rd NB Through Lane & Rt Ln	\$500,000* \$250,000
Grand Ave at Interstate 5	Add 2nd WB Right Turn Lane	None	\$400,000*
Total			\$6,150,000

* Cost for improvements on excess of City's Grand Avenue Improvement Project

APPENDIX A

Existing Intersection Counts

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Flower St. DATE: 9/14/2004 LOCATION: City of Santa Ana
 E-W STREET: Civic Center Dr. DAY: TUESDAY PROJECT# 04-1551-001

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	0	SL	ST	SR	0	EL	ET	ER	0	WL	WT	WR	0
6:00 AM	29	115	23	0	14	108	26	0	17	76	29	0	23	46	5	0
6:15 AM	32	153	27	0	22	118	32	0	32	84	31	0	28	90	5	0
6:30 AM	24	180	36	0	32	176	47	0	37	106	30	0	37	106	2	0
6:45 AM	40	162	43	0	22	165	48	0	28	129	43	0	40	114	9	0
7:00 AM	44	125	43	0	31	112	35	0	38	151	39	0	21	98	21	0
7:15 AM	20	94	44	0	38	112	24	0	20	109	19	0	32	77	16	0
7:30 AM	12	74	39	0	20	86	27	0	24	102	31	0	38	90	9	0
7:45 AM	10	68	33	0	15	91	26	0	23	86	26	0	21	94	7	0
8:00 AM																
8:15 AM																
8:30 AM																
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10:00 AM																
10:15 AM																
10:30 AM																
10:45 AM																
11:00 AM																
11:15 AM																
11:30 AM																
11:45 AM																
TOTAL	211	971	288	0	194	968	265	0	204	843	248	0	240	715	74	0
VOLUMES =																

TOTAL VOLUMES =	NL	NT	NR	0	SL	ST	SR	0	EL	ET	ER	0	WL	WT	WR	0
		211	971	288	0	194	968	265	0	204	843	248	0	240	715	74	0

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES = 140 620 149 107 571 162 120 470 143 126 408 37 3053

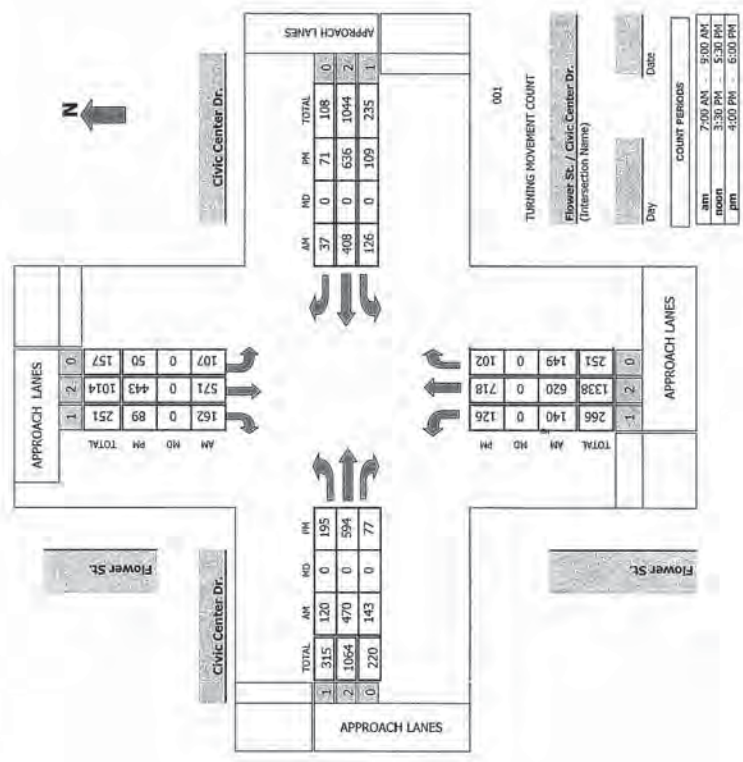
PEAK HR. FACTOR: 0.928 0.824 0.804 0.876 0.905

CONTROL: SIGNALIZED

01

TMC Summary of Flower St./Civic Center Dr.

Project #: 04-1551-001



Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Flower St. DATE: 9/14/2004 LOCATION: City of Santa Ana
 E-W STREET: Civic Center Dr. DAY: TUESDAY PROJECT# 04-1551-001

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR
1:00 PM	32	171	30	17	88	19	32	118	23	16	73	10	629			
1:15 PM	25	144	25	9	99	19	26	102	21	23	92	14	599			
1:30 PM	18	151	26	16	108	16	23	111	20	23	104	13	629			
1:45 PM	28	156	29	7	100	23	28	109	10	21	100	13	624			
2:00 PM	26	175	24	15	104	19	48	141	19	19	120	24	734			
2:15 PM	30	153	31	17	123	20	61	200	33	32	152	12	864			
2:30 PM	32	177	32	8	116	23	36	130	9	29	164	15	771			
2:45 PM	38	213	15	10	100	27	50	123	16	29	200	20	841			
3:00 PM																
3:15 PM																
3:30 PM																
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4:45 PM																
5:00 PM																
5:15 PM																
5:30 PM																
5:45 PM																
6:00 PM																
6:15 PM																
6:30 PM																
6:45 PM																

TOTAL VOLUMES =	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR	TOTAL
	229	1340	212	212	99	838	166	166	304	1034	151	151	192	1005	121	121	5691

PM Peak hr Begins at: 4:30 PM

PEAK VOLUMES =	126	718	102	50	443	89	195	594	77	109	636	71	3210
PEAK HR. FACTOR:													0.889
CONTROL:													SIGNALIZED

0.819

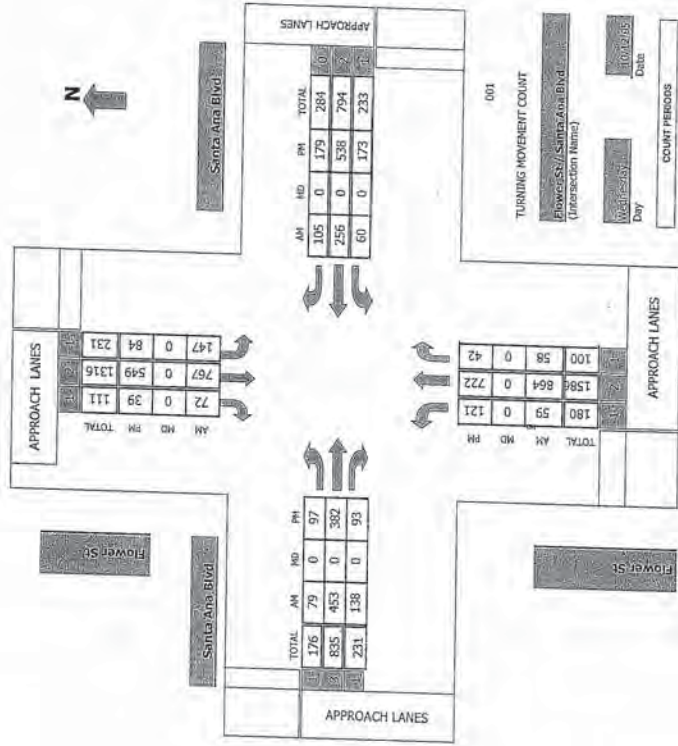
0.736

0.909

2

TMC Summary of Flower St/Santa Ana Blvd

Project #: 05-1230-003



TURNING MOVEMENT COUNT

Flower St/Santa Ana Blvd (Intersection Name)

Day: 10/12/05

Count Periods	AM	PM
7:00 AM - 9:00 AM	0	0
4:00 PM - 6:00 PM	0	0

AM PEAK HOUR: 7:15 AM
 NOON PEAK HOUR: 0 AM
 PM PEAK HOUR: 4:45 PM

APPROACH LANES

AM	MD	PM	TOTAL
72	0	39	111
767	0	549	1316
147	0	84	231

APPROACH LANES

AM	MD	PM	TOTAL
105	0	179	284
256	0	538	794
60	0	173	233

APPROACH LANES

TOTAL	AM	MD	PM
180	59	0	121
1586	864	0	722
100	58	0	42

APPROACH LANES

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Flower St DATE: 10/12/2005 LOCATION: City of Santa Ana
 E-W STREET: Santa Ana Blvd DAY: WEDNESDAY PROJECT# 05-1230-003

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR
6:00 AM	113	1448	114	114	27	169	10	15	82	40	11	48	21	48	21	623
6:15 AM																
6:30 AM																
6:45 AM																
7:00 AM	12	175	13	12	24	174	12	17	86	45	10	59	24	59	24	654
7:15 AM	10	181	12	17	47	191	18	19	108	27	10	72	30	72	30	772
7:30 AM	13	225	12	12	22	218	22	22	134	36	24	71	25	71	25	857
7:45 AM	17	233	13	12	42	218	22	22	134	36	24	71	25	71	25	857
8:00 AM	19	225	21	34	184	20	21	125	30	16	54	26	75	26	75	775
8:15 AM	23	209	15	24	102	18	20	82	17	21	79	25	635	25	635	635
8:30 AM	9	113	18	31	81	12	16	63	9	17	56	54	479	54	479	479
8:45 AM	10	87	10	26	81	8	11	60	15	8	53	33	402	33	402	402
9:00 AM																
9:15 AM																
9:30 AM																
9:45 AM																
10:00 AM																
10:15 AM																
10:30 AM																
10:45 AM																
11:00 AM																
11:15 AM																
11:30 AM																
11:45 AM																
TOTAL VOLUMES =	113	1448	114	114	255	1200	120	141	740	219	117	492	238	492	238	5197

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES =	59	864	58	147	767	72	79	453	138	60	256	105	3058
PEAK HR. FACTOR:	0.925												
CONTROL:	Signalized												

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Flower St DATE: 10/12/2005 LOCATION: City of Santa Ana
 E-W STREET: Santa Ana Blvd DAY: WEDNESDAY PROJECT# 05-1230-003

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR
1:00 PM	21	140	11	21	114	9	18	86	15	31	88	24	578	24	578	578
1:15 PM																
1:30 PM																
1:45 PM																
2:00 PM																
2:15 PM																
2:30 PM																
2:45 PM																
3:00 PM																
3:15 PM																
3:30 PM																
3:45 PM																
4:00 PM	21	140	11	21	114	9	18	86	15	31	88	24	578	24	578	578
4:15 PM																
4:30 PM																
4:45 PM																
5:00 PM																
5:15 PM																
5:30 PM																
5:45 PM																
6:00 PM																
6:15 PM																
6:30 PM																
6:45 PM																
TOTAL VOLUMES =	226	1353	86	160	1024	85	172	664	162	301	899	259	5391	259	5391	5391

PM Peak Hr Begins at: 4:45 PM

PEAK VOLUMES =	121	722	42	84	549	39	97	382	93	173	538	179	3019
PEAK HR. FACTOR:	0.926												
CONTROL:	Signalized												

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Parton St. DATE: 9/14/2004 LOCATION: City of Santa Ana
 E-W STREET: Santa Ana Blvd. DAY: TUESDAY PROJECT# 04-1551-003

LANES:	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND								
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	WL	WT	WR	WL	WT	WR	TOTAL					
6:00 AM	0	.5	.5	1	1	1	3	91	16	16	72	9	3	0	1	1	3	91	16	16	72	9	215	
6:15 AM	0	1	3	0	0	2	0	111	9	16	93	12	2	1	3	0	7	132	21	18	119	10	249	
6:30 AM	4	2	12	5	0	4	7	132	21	18	119	10	3	0	8	2	10	177	29	13	112	26	334	
6:45 AM	3	0	8	2	2	2	8	107	29	13	112	26	5	1	5	10	2	6	131	28	18	106	17	331
7:00 AM	5	1	5	10	2	2	6	95	26	19	107	23	8	15	4	2	3	1	82	20	21	114	28	284
7:15 AM	3	1	5	4	2	3	1	82	20	21	114	28	2	3	3	8	2	6	13	81	15	23	83	32
7:30 AM	2	3	3	8	2	2	3	81	15	23	83	32	2	3	3	3	3	3	3	3	3	3	3	271
7:45 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	3	0	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	23	9	43	31	11	32	45	900	164	144	806	157	2365

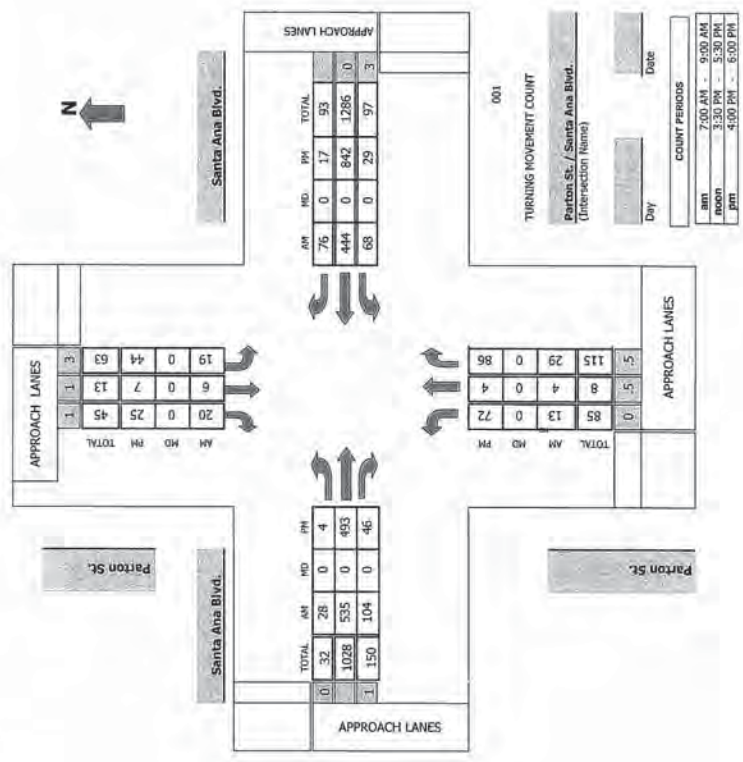
AM Peak Hr Begins at: 7:30 AM

PEAK VOLUMES =	13	4	29	19	6	20	28	535	104	68	444	76	1346
PEAK HR FACTOR:	0.804												
CONTROL:	SIGNALIZED, 0, 1												

3

TMC Summary of Parton St./Santa Ana Blvd.

Project #: 04-1551-003



Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Pariton St. DATE: 9/14/2004 LOCATION: City of Santa Ana
 E-W STREET: Santa Ana Blvd. DAY: TUESDAY PROJECT# 04-1551-003

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR
1:00 PM	3	1	5	5	20	1	13	5	57	2	6	88	9	210		
1:15 PM	4	3	12	13	13	1	12	6	92	13	9	114	16	295		
1:30 PM	10	1	12	15	3	12	8	110	17	10	150	14	362			
1:45 PM	8	2	13	16	2	8	2	95	17	6	150	4	323			
2:00 PM	12	1	20	20	2	9	1	112	5	6	174	10	372			
2:15 PM	12	1	24	9	2	3	3	123	15	11	167	3	373			
2:30 PM	25	1	25	6	1	8	0	146	15	7	208	2	444			
2:45 PM	23	1	17	9	2	5	0	112	11	5	293	2	480			
3:00 PM																
3:15 PM																
3:30 PM																
3:45 PM																
4:00 PM																
4:15 PM																
4:30 PM																
4:45 PM																
5:00 PM																
5:15 PM																
5:30 PM																
5:45 PM																
6:00 PM																
6:15 PM																
6:30 PM																
6:45 PM																

TOTAL VOLUMES =	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR	TOTAL
	97	11	128	128	108	14	70	70	25	847	95	60	1344	60	2859		

PM Peak Hr Begins at: 4:30 PM

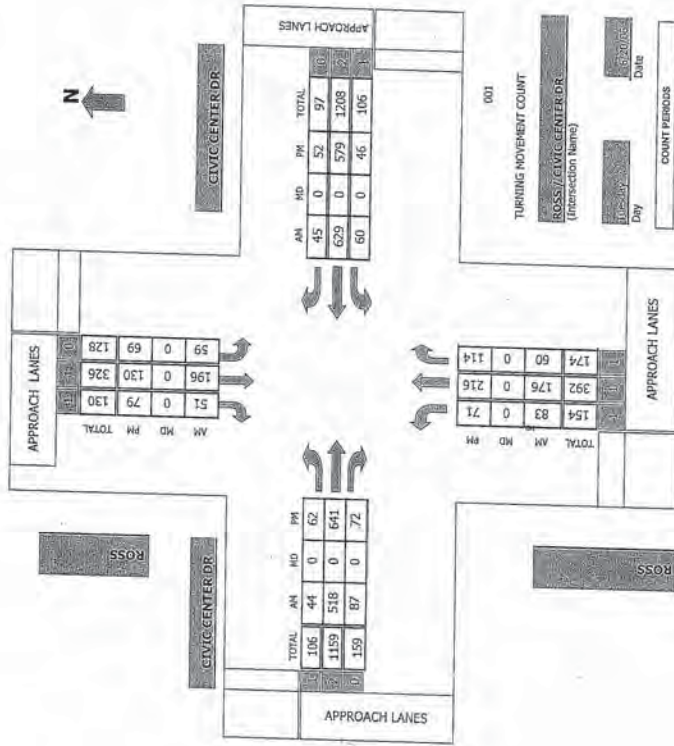
PEAK VOLUMES =	72	4	86	44	7	25	4	493	46	29	842	17	1669
PEAK HR. FACTOR:	0.794			0.613				0.843			0.740		0.869

CONTROL: SIGNALIZED, 0, 1

4

TMC Summary of ROSS/CIVIC CENTER DR

Project #: 06-1192-024



TURNING MOVEMENT COUNT
 ROSS/CIVIC CENTER DR
 (Intersection Name)

Day	Date	Count Periods
am	7:00 AM - 9:00 AM	
noon	11:00 AM - 1:00 PM	
pm	4:00 PM - 6:00 PM	

AM PEAK HOUR: 7:15 AM
 NOON PEAK HOUR: 0 AM
 PM PEAK HOUR: 4:30 PM

AM	MD	PM	TOTAL
51	0	79	130
196	0	130	326
59	0	69	128

AM	MD	PM	TOTAL
45	0	52	97
629	0	579	1208
60	0	46	106

TOTAL	AM	MD	PM
154	83	0	71
392	176	0	216
174	60	0	114

TOTAL	AM	MD	PM
106	44	0	62
1159	518	0	641
159	87	0	72

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: ROSS DATE: 6/20/2006 LOCATION: City of Santa Ana
 E-W STREET: CIVIC CENTER DR DAY: TUESDAY PROJECT# 06-1192-024

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SL	ST	SR	SR	SL	EL	ET	ER	WL	WT	WR	WT	WR
6:00 AM	35	13	11	36	16	9	92	11	9	125	11	9	125	11	383	
6:15 AM	48	15	14	57	10	7	145	12	14	152	13	14	152	13	503	
6:30 AM	19	49	9	13	49	17	113	128	23	16	141	11	488			
6:45 AM	21	37	17	16	55	11	113	139	25	13	159	9	513			
7:00 AM	27	42	19	16	35	13	106	27	17	177	12	504				
7:15 AM	25	31	14	17	30	14	15	96	14	18	161	10	445			
7:30 AM	16	29	16	19	27	10	9	81	11	15	159	13	405			
7:45 AM	11	19	7	11	23	9	7	95	19	8	145	4	358			
8:00 AM	9	36	22	11	21	17	13	91	7	11	94	16	348			
8:15 AM	8	40	31	14	19	10	16	106	11	8	101	8	372			
8:30 AM	17	48	31	16	24	29	178	15	14	145	22	558				
8:45 AM	17	46	25	12	32	15	12	176	22	5	112	6	480			
9:00 AM	20	71	30	21	41	16	16	159	21	20	163	15	593			
9:15 AM	17	51	28	20	33	19	15	128	14	7	159	9	500			
9:30 AM	37	43	25	7	37	14	9	103	15	12	153	14	469			
9:45 AM	41	37	17	9	20	13	13	107	15	10	161	8	451			
10:00 AM	166	372	209	110	227	133	113	1048	120	87	1088	98	3771			
TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	SR	SL	EL	ET	ER	WL	WT	WR	WT	WR

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES = 83 176 60 59 196 51 44 518 87 60 629 45 2008
 PEAK HR. FACTOR: 0.906 0.933 0.927 0.891 0.979
 CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: ROSS DATE: 6/20/2006 LOCATION: City of Santa Ana
 E-W STREET: CIVIC CENTER DR DAY: TUESDAY PROJECT# 06-1192-024

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SL	ST	SR	SR	SL	EL	ET	ER	WL	WT <td>WR</td> <td>WT</td> <td>WR</td>	WR	WT	WR
1:00 PM	9	36	22	11	21	17	13	91	7	11	94	16	348			
1:15 PM	8	40	31	14	19	10	16	106	11	8	101	8	372			
1:30 PM	17	48	31	16	24	29	178	15	14	145	22	558				
1:45 PM	17	46	25	12	32	15	12	176	22	5	112	6	480			
2:00 PM	20	71	30	21	41	16	16	159	21	20	163	15	593			
2:15 PM	17	51	28	20	33	19	15	128	14	7	159	9	500			
2:30 PM	37	43	25	7	37	14	9	103	15	12	153	14	469			
2:45 PM	41	37	17	9	20	13	13	107	15	10	161	8	451			
3:00 PM	166	372	209	110	227	133	113	1048	120	87	1088	98	3771			
3:15 PM	NL	NT	NR	SL	ST	SR	SR	SL	EL	ET	ER	WL	WT	WR	WT	WR

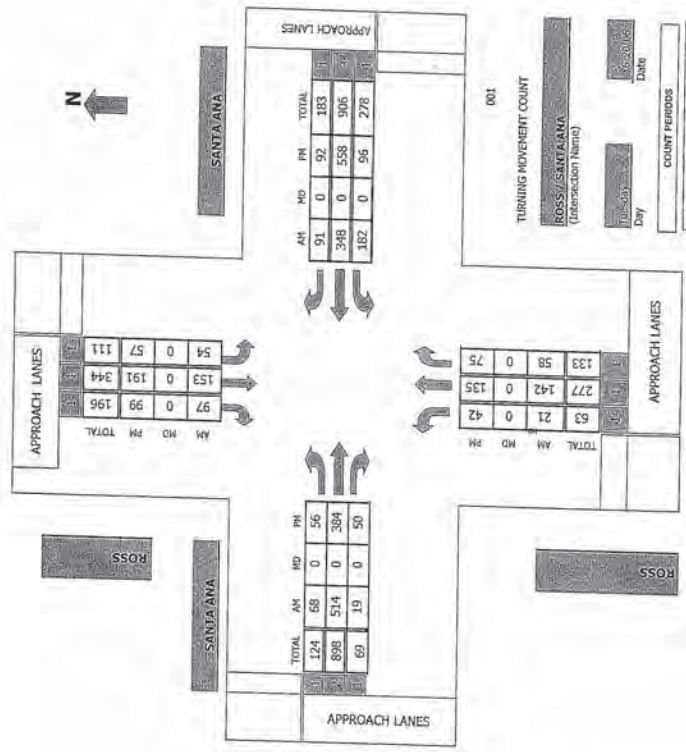
PM Peak Hr Begins at: 4:30 PM

PEAK VOLUMES = 71 216 114 69 130 79 62 641 72 46 579 52 2131
 PEAK HR. FACTOR: 0.829 0.891 0.914 0.855 0.898
 CONTROL: Signalized

(5) 36

TMC Summary of ROSS/SANTA ANA

Project #: 06-1192-026



Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: ROSS DATE: 6/20/2006 LOCATION: City of Santa Ana
 E-W STREET: SANTA ANA DAY: TUESDAY PROJECT# 06-1192-026

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:00 AM	1	1	1	1	1	1	1	2	1	1	1	1	
6:15 AM	2	38	11	9	29	12	9	119	1	41	79	19	
6:30 AM	4	34	15	8	31	25	17	121	4	59	81	15	
6:45 AM	6	31	11	17	38	23	18	131	6	41	83	23	
7:15 AM	4	35	13	10	41	25	16	137	5	45	91	24	
7:30 AM	4	42	19	19	43	24	17	125	4	37	93	29	
7:45 AM	8	29	14	17	35	19	18	121	3	35	79	18	
8:00 AM	7	25	7	8	24	17	21	119	2	33	74	19	
8:15 AM	5	17	9	7	19	11	20	107	2	41	86	17	
8:30 AM													
8:45 AM													
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	43	251	99	95	260	156	136	980	27	332	666	164	3209

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES = 21 142 58 54 153 97 68 514 19 182 348 91 1747

PEAK HR. FACTOR: 0.813 0.864 0.951 0.970

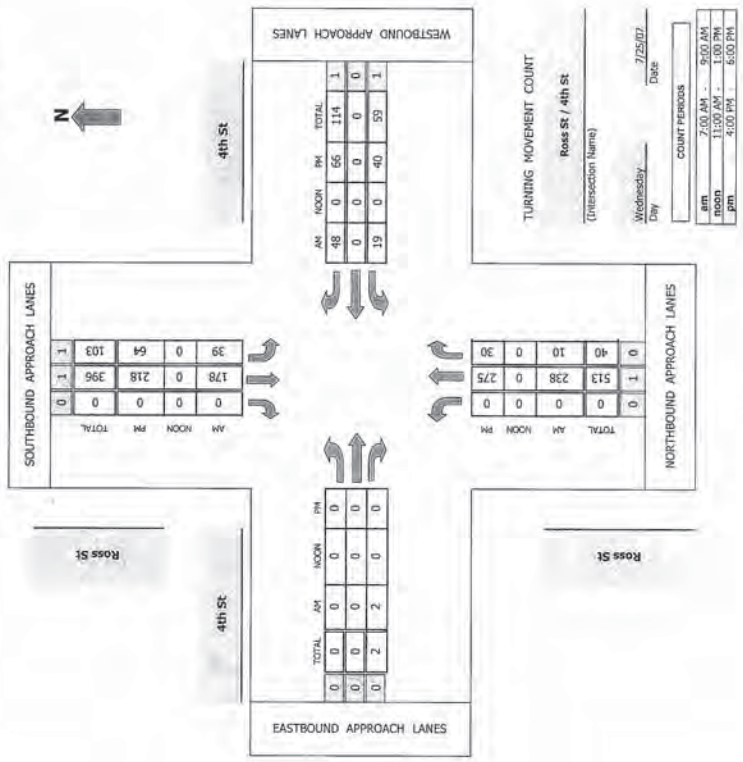
CONTROL: Signalized

76

Intersection Turning Movement
Prepared by:
National Data & Surveying Services

Project #: 07-1213-001

TMC Summary of Ross St/4th St



Intersection Turning Movement
Prepared by: Southland Car Counters

N-S STREET: ROSS DATE: 6/20/2006 LOCATION: City of Santa Ana
E-W STREET: SANTA ANA DAY: TUESDAY PROJECT# 06-1192-026

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
1:00 PM	8	28	18	12	41	19	14	87	9	26	137	11	410
1:15 PM	11	31	19	14	44	25	15	91	13	22	141	12	438
1:30 PM	15	33	16	15	47	24	13	92	13	24	146	17	455
1:45 PM	11	34	18	18	52	28	11	97	14	23	133	28	467
2:00 PM	5	37	22	10	48	22	17	104	10	27	138	35	475
2:15 PM	6	32	23	8	35	18	16	91	8	25	127	28	417
2:30 PM	7	29	20	3	16	12	3	86	6	11	123	12	328
2:45 PM	4	24	17	4	22	7	9	76	4	9	112	13	301
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													
5:00 PM													
5:15 PM													
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	67	248	153	84	305	155	98	724	77	167	1057	156	3291

PM Peak Hr Begins at: 4:15 PM

PEAK VOLUMES =	42	135	75	57	191	99	56	384	50	96	558	92	1835
PEAK HR. FACTOR:	0.984												
CONTROL:	Signalized												
	0.935												
	0.933												

Intersection Turning Movement

Prepared by:
National Data & Surveying Services

N-S STREET: Ross St DATE: 7/25/2007 LOCATION: City of Santa Ana
E-W STREET: 4th St DAY: WEDNESDAY PROJECT# 07-1213-001

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

6:00 AM	0	1	0	1	1	1	0	0	0	0	0	1	0	0	0	1
6:15 AM	49	2	7	41	0	0	0	4	0	0	0	4	0	0	0	8
6:30 AM	57	2	8	48	0	0	0	10	0	0	0	10	0	0	0	17
6:45 AM	68	5	15	50	0	0	0	2	0	0	0	2	0	0	0	8
7:00 AM	55	1	12	46	0	0	0	4	0	0	0	4	0	0	0	8
7:15 AM	58	2	4	34	0	0	0	3	0	0	0	3	0	0	0	15
7:30 AM	66	5	11	36	0	0	0	4	0	0	0	4	0	0	0	11
7:45 AM	50	2	7	29	0	0	0	2	0	0	0	2	0	0	0	10
8:00 AM	43	0	11	26	0	0	0	2	0	0	0	2	0	0	0	7
8:15 AM																
8:30 AM																
8:45 AM																
9:00 AM																
9:15 AM																
9:30 AM																
9:45 AM																
10:00 AM																
10:15 AM																
10:30 AM																
10:45 AM																
11:00 AM																
11:15 AM																
11:30 AM																
11:45 AM																

TOTAL VOLUMES =	0	446	19	75	310	0	0	0	0	0	2	31	0	84	0	967
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AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES = 0 238 10 39 178 0 0 0 2 19 0 48 534

PEAK HR. FACTOR: 0.849 0.835 0.250 0.620

CONTROL: 1-Way Stop W

Intersection Turning Movement

Prepared by:
National Data & Surveying Services

N-S STREET: Ross St DATE: 7/25/2007 LOCATION: City of Santa Ana
E-W STREET: 4th St DAY: WEDNESDAY PROJECT# 07-1213-001

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

1:00 PM	0	1	0	1	1	1	0	0	0	0	0	1	0	0	0	1
1:15 PM	53	9	15	52	9	11	46	11	11	11	16	16	140	16	140	
1:30 PM	61	9	15	52	11	11	46	11	11	11	13	13	161	13	161	
1:45 PM	74	7	19	56	10	10	46	10	10	10	19	19	185	19	185	
2:00 PM	68	9	18	52	13	13	46	13	13	13	21	21	181	21	181	
2:15 PM	72	5	12	58	6	6	46	6	6	6	13	13	166	13	166	
2:30 PM	52	7	7	50	4	4	46	4	4	4	15	15	135	15	135	
2:45 PM	47	8	15	43	7	7	46	7	7	7	14	14	134	14	134	
3:00 PM	48	9	16	25	18	18	46	18	18	18	8	8	124	8	124	
3:15 PM																
3:30 PM																
3:45 PM																
4:00 PM																
4:15 PM																
4:30 PM																
4:45 PM																
5:00 PM																
5:15 PM																
5:30 PM																
5:45 PM																
6:00 PM																
6:15 PM																
6:30 PM																
6:45 PM																

TOTAL VOLUMES =	0	475	59	113	382	0	0	0	0	0	0	78	0	119	0	1226
-----------------	---	-----	----	-----	-----	---	---	---	---	---	---	----	---	-----	---	------

PM Peak Hr Begins at: 4:15 PM

PEAK VOLUMES = 0 275 30 64 218 0 0 0 0 40 0 66 693

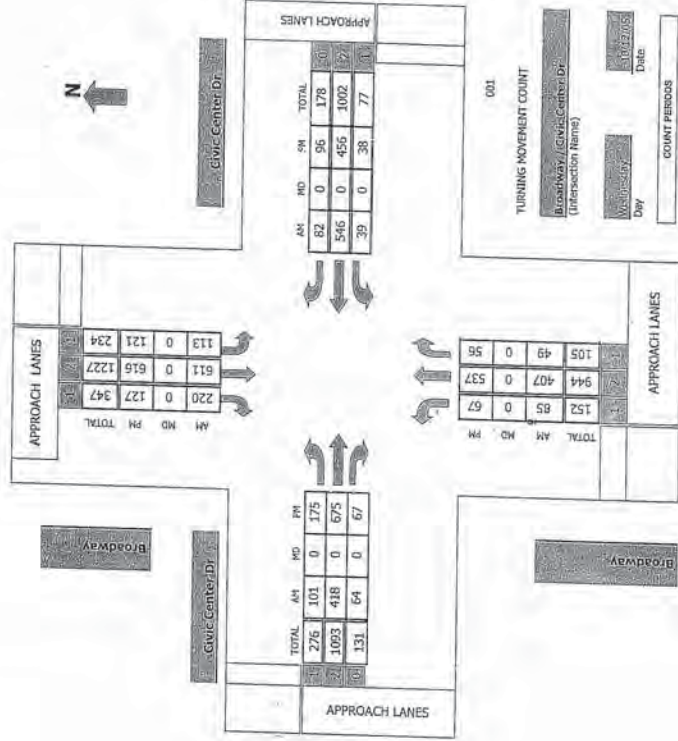
PEAK HR. FACTOR: 0.941 0.940 0.000 0.779

CONTROL: 1-Way Stop W

⑦ 6

TMC Summary of Broadway/Civic Center Dr

Project #: 05-1230-008



Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Broadway DATE: 10/12/2005 LOCATION: City of Santa Ana
 E-W STREET: Civic Center Dr DAY: WEDNESDAY PROJECT# 05-1230-008

LANES:	SOUTHBOUND					EASTBOUND					WESTBOUND									
	NL	NT	NR	SL	ST	SR	SR	ST	ST	SL	EL	ET	ER	ER	ET	EL	WL	WT	WR	TOTAL
6:00 AM	8	57	10	19	109	55	55	5	72	9	72	9	3	80	5	3	80	5	432	
6:15 AM	14	58	10	16	144	74	74	12	77	8	77	8	7	115	2	7	115	2	537	
6:30 AM	16	82	12	26	122	56	56	15	134	14	134	14	8	97	3	8	97	3	585	
6:45 AM	20	113	15	30	167	51	51	34	132	16	132	16	15	145	10	15	145	10	748	
7:00 AM	18	125	12	28	157	52	52	25	109	16	109	16	11	127	34	11	127	34	714	
7:15 AM	16	92	14	27	144	61	61	23	89	13	89	13	8	144	25	8	144	25	656	
7:30 AM	31	77	8	28	143	56	56	19	88	19	88	19	5	130	13	5	130	13	617	
7:45 AM	26	72	18	18	123	66	66	12	81	10	81	10	10	114	8	10	114	8	558	
8:00 AM																				
8:15 AM																				
8:30 AM																				
8:45 AM																				
9:00 AM																				
9:15 AM																				
9:30 AM																				
9:45 AM																				
10:00 AM																				
10:15 AM																				
10:30 AM																				
10:45 AM																				
11:00 AM																				
11:15 AM																				
11:30 AM																				
11:45 AM																				

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	149	676	99	192	1109	471	145	782	105	67	952	100	4847

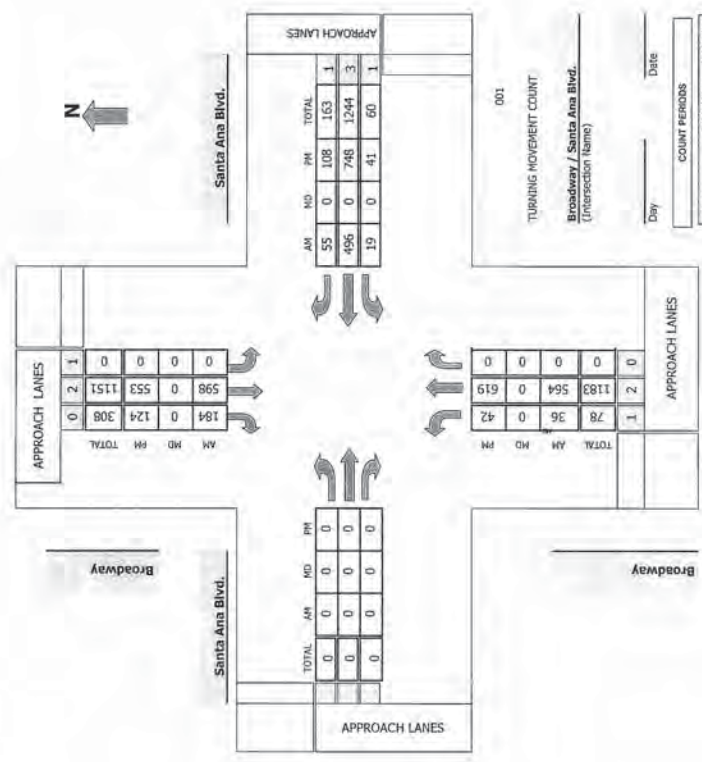
AM Peak Hr Begins at: 7:45 AM

PEAK VOLUMES =	85	407	49	113	611	220	101	418	64	39	546	82	2735
PEAK HR. FACTOR:	0.952												
CONTROL:	Signalized												

8

TMC Summary of Broadway/Santa Ana Blvd.

Project #: 04-1551-007



TURNING MOVEMENT COUNT
Broadway / Santa Ana Blvd.
(Intersection Name)

Day	Date	AM	MD	PM	TOTAL
		55	0	108	163
		496	0	748	1244
		19	0	41	60
					1

COUNT PERIODS:
am 7:00 AM - 9:00 AM
noon 3:30 PM - 5:30 PM
pm 4:00 PM - 6:00 PM

AM PEAK HOUR: 7:00 AM
NOON PEAK HOUR: 0 AM
PM PEAK HOUR: 4:30 PM

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Broadway DATE: 10/12/2005 LOCATION: City of Santa Ana
E-W STREET: Civic Center Dr DAY: WEDNESDAY PROJECT# 05-12-30-008

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR	
1:00 PM	21	136	9	22	139	28	41	135	31	9	80	17	668				
1:15 PM	17	126	15	12	140	32	35	124	10	14	115	8	648				
1:30 PM	15	127	12	18	126	37	44	176	17	12	81	16	681				
1:45 PM	14	123	13	27	154	23	34	171	21	9	111	20	720				
2:00 PM	15	124	15	45	189	33	36	172	20	9	150	37	845				
2:15 PM	23	163	16	31	147	34	61	156	9	8	114	23	785				
2:30 PM	14	141	10	27	130	25	46	141	16	6	106	8	670				
2:45 PM	22	166	15	20	135	25	35	104	11	11	121	13	678				
3:00 PM																	
3:15 PM																	
3:30 PM																	
3:45 PM																	
4:00 PM																	
4:15 PM																	
4:30 PM																	
4:45 PM																	
5:00 PM																	
5:15 PM																	
5:30 PM																	
5:45 PM																	
6:00 PM																	
6:15 PM																	
6:30 PM																	
6:45 PM																	

TOTAL VOLUMES =	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR	TOTAL
	141	1106	105	202	1160	237	332	1179	135	78	878	142	5695				

PM Peak Hr Begins at: 4:30 PM

PEAK VOLUMES = 67 537 56 121 616 127 175 675 67 38 456 96 3031

PEAK HR. FACTOR: 0.817 0.809 0.967 0.753 0.887

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Broadway DATE: 9/14/2004 LOCATION: City of Santa Ana
 E-W STREET: Santa Ana Blvd. DAY: TUESDAY PROJECT# 04-1551-007

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL		
6:00 AM	101	949	0	0	0	0	2	1	0	0	0	0	0	0		
6:15 AM																
6:30 AM																
6:45 AM																
7:00 AM	10	142	7	147	158	42	5	124	9	490						
7:15 AM																
7:30 AM	4	148	4	153	153	45	6	125	10	493						
7:45 AM	15	127	4	148	171	54	4	132	10	523						
8:00 AM	12	104	15	127	116	43	4	115	26	446						
8:15 AM	17	87	20	104	112	64	9	124	20	445						
8:30 AM	20	94	16	100	86	44	12	139	18	403						
8:45 AM					104	44	9	112	15	398						
9:00 AM					101	36	10	118	14	395						
9:15 AM																
9:30 AM																
9:45 AM																
10:00 AM																
10:15 AM																
10:30 AM																
10:45 AM																
11:00 AM																
11:15 AM																
11:30 AM																
11:45 AM																
TOTAL VOLUMES =	101	949	0	0	0	1001	372	0	0	0	59	989	122	3593		

AM Peak Hr Begins at: 7:00 AM

PEAK VOLUMES =	36	564	0	0	598	184	0	0	0	0	19	496	55	1952
PEAK HR. FACTOR:					0.869					0.000		0.976		0.933
CONTROL:	Signalized													

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Broadway DATE: 9/14/2004 LOCATION: City of Santa Ana
 E-W STREET: Santa Ana Blvd. DAY: TUESDAY PROJECT# 04-1551-007

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL		
1:00 PM	15	122	19	128	129	25	12	155	18	476						
1:15 PM																
1:30 PM																
1:45 PM																
2:00 PM																
2:15 PM																
2:30 PM																
2:45 PM																
3:00 PM																
3:15 PM																
3:30 PM	15	122	19	128	129	25	12	155	18	476						
3:45 PM																
4:00 PM	20	115	7	159	134	12	7	150	19	477						
4:15 PM																
4:30 PM	13	165	13	148	148	20	15	169	27	557						
4:45 PM																
5:00 PM	10	150	10	144	118	43	10	175	15	521						
5:15 PM																
5:30 PM	9	160	9	160	138	24	5	197	33	566						
5:45 PM																
6:00 PM																
6:15 PM																
6:30 PM																
6:45 PM																
TOTAL VOLUMES =	103	1163	0	0	0	1087	223	0	0	0	87	1341	193	4197		

PM Peak Hr Begins at: 4:30 PM

PEAK VOLUMES =	42	619	0	0	553	124	0	0	0	0	41	748	108	2235
PEAK HR. FACTOR:					0.928					0.000		0.893		0.945
CONTROL:	Signalized													

Per flow conservation

Transportation Studies, Inc
1350 Reynolds Avenue, Suite 115
Irvine, CA, 92614

File Name: H0505109
Site Code: 00000924
Start Date: 5/24/2005
Page No: 1
City: SANTA ANA
N-S Direction: BROADWAY
E-W Direction: 5TH STREET

Transportation Studies, Inc
1350 Reynolds Avenue, Suite 115
Irvine, CA, 92614

File Name: H0505109
Site Code: 00000924
Start Date: 5/24/2005
Page No: 2

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 07:15 AM

Start Time	BROADWAY Southbound			5TH STREET Westbound			BROADWAY Northbound			5TH STREET Eastbound			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
7:00 AM	0	106	13	0	0	0	8	79	0	0	0	0	305
7:15 AM	0	117	13	0	0	0	6	114	0	0	0	0	380
7:30 AM	0	117	13	0	0	0	9	128	0	0	0	0	421
7:45 AM	0	138	25	0	0	0	11	101	0	0	0	0	534
Total	0	465	68	0	0	0	34	422	0	0	0	0	1420
% App. Total	0	87.6	12.4	0	0	0	7.5	82.5	0	0	0	0	0.832
PHF	0	0.855	0.65	0.825	0	0	0	0.773	0.824	0	0	0	0.845

Groups Printed - Turning Movements

Start Time	BROADWAY Southbound			5TH STREET Westbound			BROADWAY Northbound			5TH STREET Eastbound			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
7:00 AM	0	93	7	0	0	0	5	47	0	0	0	17	220
7:15 AM	0	105	13	0	0	0	6	79	0	0	0	25	305
7:30 AM	0	117	13	0	0	0	6	114	0	0	0	4	415
7:45 AM	0	138	25	0	0	0	9	128	0	0	0	53	490
Total	0	452	58	0	0	0	28	358	0	0	0	7	1366
8:00 AM	0	106	15	0	0	0	11	101	0	0	1	72	334
8:15 AM	0	85	17	0	0	0	5	110	0	0	3	61	291
8:30 AM	0	85	22	0	0	0	15	98	0	0	2	76	293
8:45 AM	0	113	22	0	0	0	2	78	0	0	2	42	279
Total	0	398	69	0	0	0	31	357	0	0	8	251	1187
*** BREAK ***													
4:00 PM	0	122	12	0	0	0	17	116	0	0	3	114	333
4:15 PM	0	100	9	0	0	0	18	124	0	0	8	108	455
4:30 PM	0	150	11	0	0	0	21	138	0	0	4	136	492
4:45 PM	0	139	17	0	0	0	17	114	0	0	6	138	469
Total	0	511	49	0	0	0	73	484	0	0	21	496	1802
5:00 PM	0	159	20	0	0	0	24	131	0	0	4	166	565
5:15 PM	0	146	21	0	0	0	16	110	0	0	6	116	341
5:30 PM	0	159	19	0	0	0	13	152	0	0	2	126	441
5:45 PM	0	144	20	0	0	0	28	137	0	0	6	138	459
Total	0	618	60	0	0	0	76	524	0	0	18	505	1985
Grand Total	0	1977	266	0	0	0	210	1743	0	0	64	1556	4941
Approach %	0	86.5	11.5	0	0	0	10.8	89.2	0	0	2.6	74	23.5
Total %	0	31.4	4.1	0	0	0	3.3	27.7	0	0	0.9	24.7	7.9

10

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Broadway DATE: 9/26/2005 LOCATION: City of Santa Ana
 E-W STREET: 4th St DAY: MONDAY PROJECT# H0509044

LANES:	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TL	TL	TL	TL	TL	TL		
6:00 AM	3	56	6	3	67	11	7	4	2	7	13	1	180							
6:15 AM	4	82	8	4	82	11	2	5	6	5	11	1	221							
6:30 AM	2	108	2	1	112	14	1	17	3	4	11	1	276							
6:45 AM	3	123	8	4	104	12	5	11	4	5	16	7	302							
7:00 AM	3	105	5	6	102	20	5	11	5	7	26	3	298							
7:15 AM	1	87	7	4	89	22	4	12	3	4	31	0	264							
7:30 AM	9	83	5	2	76	19	2	10	1	10	20	2	239							
7:45 AM	5	58	7	3	87	14	2	14	2	5	19	7	223							
8:00 AM																				
8:15 AM																				
8:30 AM																				
8:45 AM																				
9:00 AM																				
9:15 AM																				
9:30 AM																				
9:45 AM																				
10:00 AM																				
10:15 AM																				
10:30 AM																				
10:45 AM																				
11:00 AM																				
11:15 AM																				
11:30 AM																				
11:45 AM																				

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	30	702	48	27	719	123	28	84	26	47	147	22	2003
AM Peak Hr Begins at:	7:30 AM												
PEAK VOLUMES =	9	423	22	15	407	68	15	51	15	20	84	11	1140
PEAK HR. FACTOR:	0.847												
CONTROL:	0.957												
	0.964												
	0.799												
	0.944												

Transportation Studies, Inc

1350 Reynolds Avenue, Suite 115
 Irvine, CA, 92614

File Name: H0505109
 Site Code: 010000924
 Start Date: 5/24/2005
 Page No: 3

Start Time	BROADWAY Southbound			5TH STREET Westbound			BROADWAY Northbound			5TH STREET Eastbound		
	Right	Left	App. Total	Right	Left	App. Total	Right	Left	App. Total	Right	Left	App. Total
4:45 PM	0	168	168	0	0	0	17	114	0	131	6	138
5:00 PM	0	168	168	0	0	0	21	131	0	152	4	166
5:15 PM	0	148	148	0	0	0	10	110	0	128	6	118
5:30 PM	0	159	159	0	0	0	13	152	0	165	2	128
Total Volume	0	613	613	0	0	0	67	507	0	574	16	548
% App. Total	0	89.8	112	0	0	0	11.7	83.3	0	2.5	74.4	23.2
PHF	0	0.937	0.973	0	0	0	0.798	0.834	0	0.67	0.75	0.822

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Control Intersection Begins at 04:45 PM

Start Time	BROADWAY Southbound			5TH STREET Westbound			BROADWAY Northbound			5TH STREET Eastbound		
	Right	Left	App. Total	Right	Left	App. Total	Right	Left	App. Total	Right	Left	App. Total
4:45 PM	0	168	168	0	0	0	17	114	0	131	6	138
5:00 PM	0	168	168	0	0	0	21	131	0	152	4	166
5:15 PM	0	148	148	0	0	0	10	110	0	128	6	118
5:30 PM	0	159	159	0	0	0	13	152	0	165	2	128
Total Volume	0	613	613	0	0	0	67	507	0	574	16	548
% App. Total	0	89.8	112	0	0	0	11.7	83.3	0	2.5	74.4	23.2
PHF	0	0.937	0.973	0	0	0	0.798	0.834	0	0.67	0.75	0.822

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Broadway DATE: 9/26/2005 LOCATION: City of Santa Ana
 E-W STREET: 4th St DAY: MONDAY PROJECT#: H0509044

LAVES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	WT	WR	WT		
1:00 PM	4	92	10	6	118	6	10	20	12	9	29	9	325				
1:15 PM	3	100	13	7	124	2	12	25	8	13	25	7	329				
1:30 PM	3	116	16	8	117	4	14	25	8	6	30	5	352				
1:45 PM	4	116	18	5	111	7	8	23	5	14	32	5	348				
2:00 PM	1	105	23	1	142	9	11	24	4	12	31	5	368				
2:15 PM	5	110	18	6	124	5	14	20	9	10	31	9	361				
2:30 PM	4	119	15	9	119	4	11	27	7	15	35	9	374				
2:45 PM	8	126	31	8	98	3	9	26	8	9	21	14	361				
3:00 PM																	
3:15 PM																	
3:30 PM																	
3:45 PM																	
4:00 PM																	
4:15 PM																	
4:30 PM																	
4:45 PM																	
5:00 PM																	
5:15 PM																	
5:30 PM																	
5:45 PM																	
6:00 PM																	
6:15 PM																	
6:30 PM																	
6:45 PM																	

PM Peak Hr Begins at: 5:00 PM

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	32	884	144	50	953	40	89	190	61	88	234	63	2828

PEAK VOLUMES = 18 460 87 24 483 21 45 97 28 46 118 37 1464

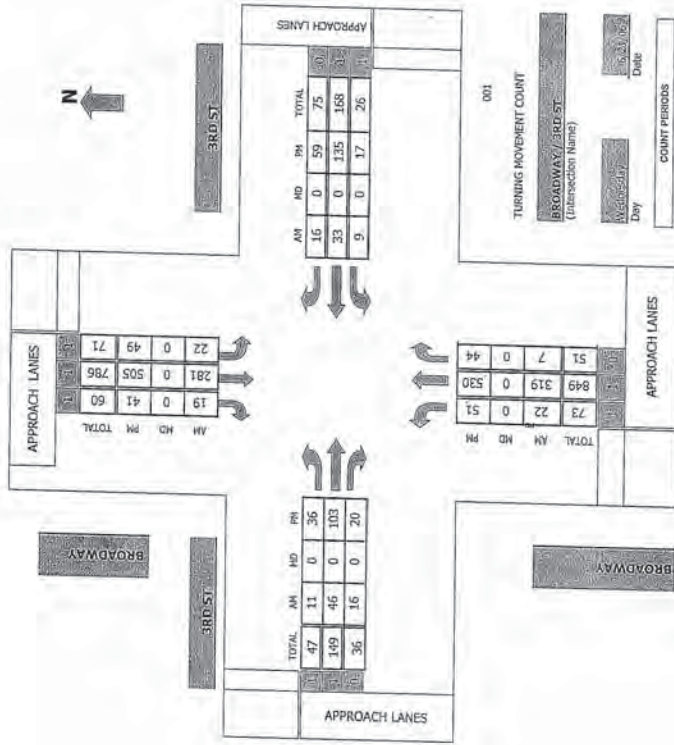
PEAK HR FACTOR: 0.856 0.868 0.944 0.852 0.979

CONTROL: +50 flow conservation

11

TMC Summary of BROADWAY/3RD ST

Project #: 06-1192-003



TURNING MOVEMENT COUNT

BROADWAY/3RD ST
(Intersection Name)

By: [Signature] Date: 09/26/05

COUNT PERIODS	
AM	7:00 AM - 9:00 AM
NOON	11:00 AM - 1:00 PM
PM	4:00 PM - 6:00 PM

AM PEAK HOUR	7:00 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	5:00 PM

APPROACH LANES			
AM	MD	PM	TOTAL
19	0	41	60
281	0	505	786
22	0	49	71

APPROACH LANES			
TOTAL	AM	MD	PM
47	11	0	36
149	46	0	103
36	16	0	20

APPROACH LANES			
TOTAL	AM	MD	PM
73	22	0	51
849	319	0	530
51	7	0	44

APPROACH LANES			
AM	MD	PM	TOTAL
16	0	59	75
33	0	135	168
9	0	17	26

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: BROADWAY DATE: 6/21/2006 LOCATION: City of Santa Ana
 E-W STREET: 3RD ST DAY: WEDNESDAY PROJECT# 06-1192-003

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
6:00 AM	3	44	4	2	47	4	0	6	4	2	8	1	125
6:15 AM	9	74	2	5	62	4	0	11	4	0	6	4	181
6:30 AM	7	75	0	8	63	1	1	11	4	2	4	5	181
6:45 AM	4	97	2	2	76	3	5	15	4	4	11	6	229
7:00 AM	5	68	3	6	66	8	1	15	2	2	9	3	188
7:15 AM	6	79	2	6	76	7	4	5	6	1	9	2	203
7:30 AM	3	56	1	5	58	4	4	7	6	1	10	4	159
7:45 AM	8	69	6	5	67	7	9	11	3	2	12	7	206
8:00 AM													
8:15 AM													
8:30 AM													
8:45 AM													
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	45	562	20	39	515	38	24	81	33	14	69	32	1472

AM Peak Hr Begins at: 7:30 AM

PEAK VOLUMES =	22	319	7	22	281	19	11	46	16	9	33	16	801
PEAK HR. FACTOR:	0.845												
CONTROL:	Signalized												

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: BROADWAY DATE: 6/21/2006 LOCATION: City of Santa Ana
 E-W STREET: 3RD ST DAY: WEDNESDAY PROJECT# 06-1192-003

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
1:00 PM	7	100	6	5	105	10	6	22	5	7	11	13	297
1:15 PM	12	97	10	9	118	14	8	17	5	1	28	13	332
1:30 PM	7	116	13	18	142	11	9	26	5	6	28	16	397
1:45 PM	8	111	14	10	118	5	10	23	5	4	28	15	351
2:00 PM	9	126	13	9	135	11	10	44	7	5	30	15	414
2:15 PM	15	124	8	12	130	10	8	27	7	1	37	8	387
2:30 PM	14	145	10	15	134	11	10	16	2	9	38	23	427
2:45 PM	13	135	13	13	106	9	8	16	4	2	30	13	362
3:00 PM													
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
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4:45 PM													
5:00 PM													
5:15 PM													
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													
TOTAL VOLUMES =	85	954	87	91	988	81	69	191	40	35	230	116	2967

PM Peak Hr Begins at: 5:00 PM

PEAK VOLUMES =	51	530	44	49	505	41	36	103	20	17	135	59	1590
PEAK HR. FACTOR:	0.925												
CONTROL:	Signalized												

13

Transportation Studies, Inc

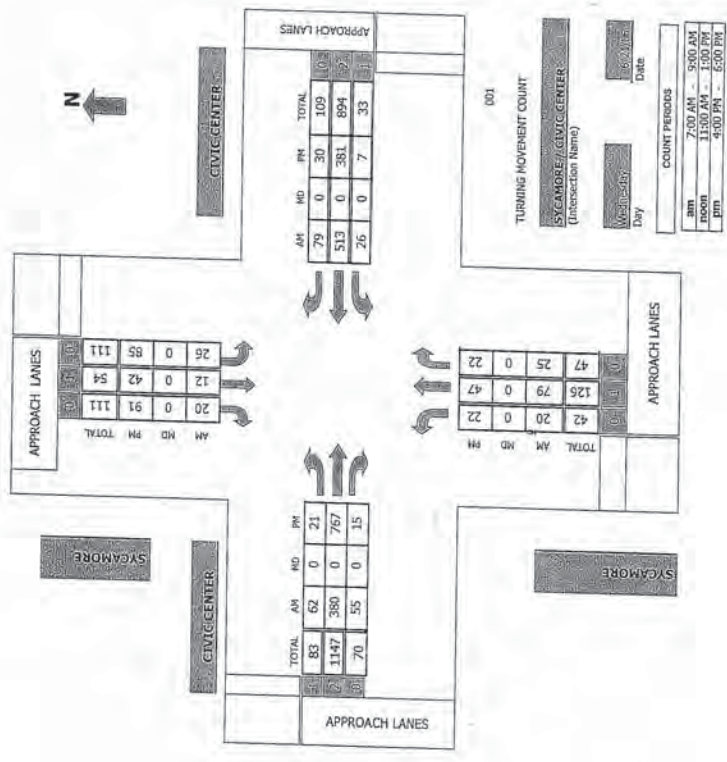
1350 Reynolds Avenue, Suite 115
Irvine, CA, 92614

File Name: H0505110
Site Code: 00000977
Start Date: 5/24/2005
Page No: 3

TMC Summary of SYCAMORE/CIVIC CENTER

Project #: 06-1192-011

Start Time	BROADWAY Southbound			1ST STREET Westbound			BROADWAY Northbound			1ST STREET Eastbound			Int. Total				
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total					
4:30 AM	28	37	17	133	14	321	15	350	9	89	27	125	16	286	30	305	943
4:45 PM	20	14	12	133	18	318	19	335	10	79	18	108	14	238	26	278	864
5:00 PM	27	33	16	133	16	283	19	328	9	67	12	89	15	243	29	287	839
5:15 PM	30	101	19	144	16	236	13	325	15	95	25	135	18	233	37	294	888
Total Volume	116	360	60	536	64	1228	68	1358	43	330	83	456	63	1008	122	1194	3544
% App. Total	21.6	67.2	11.2	4.9	4.7	90.4	4.9	8.4	72.4	18.2	5.3	84.5	10.2	0.875	0.673	0.824	0.891
PHF	0.297	0.851	0.802	0.931	0.889	0.958	0.885	0.956	0.717	0.868	0.768	0.844	0.875	0.673	0.824	0.891	0.84



Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SYCAMORE DATE: 6/21/2006 LOCATION: City of Santa Ana
 E-W STREET: CIVIC CENTER DAY: WEDNESDAY PROJECT# 06-1192-011

LANES:	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND																
	NL	NT	NR	SL	ST	SR	ST	SL	NR	NT	ER	ET	EL	SR	ST	SL	NR	NT	ER	ET	EL	SR	ST	SL	NR	NT	WR	WT	WR	WT	TOTAL	
6:00 AM																																
6:15 AM																																
6:30 AM																																
6:45 AM																																
7:00 AM																																
7:15 AM																																
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10:30 AM																																
10:45 AM																																
11:00 AM																																
11:15 AM																																
11:30 AM																																
11:45 AM																																
TOTAL VOLUMES =	44	137	47	38	25	41	112	673	90	46	957	119	2329																			

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES = 20 79 25 26 12 20 62 380 55 26 513 79 1297
 PEAK HR. FACTOR: 0.738 0.690 0.888 0.960 0.932

CONTROL: SIGNALIZED

per-flow conservation & comparison w/ old counts

per-flow conservation and comparison w/ old counts.

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: SYCAMORE DATE: 6/21/2006 LOCATION: City of Santa Ana
 E-W STREET: CIVIC CENTER DAY: WEDNESDAY PROJECT# 06-1192-011

LANES:	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND																
	NL	NT	NR	SL	ST	SR	ST	SL	NR	NT	ER	ET	EL	SR	ST	SL	NR	NT	ER	ET	EL	SR	ST	SL	NR	NT	WR	WT	WR	WT	TOTAL	
1:00 PM																																
1:15 PM																																
1:30 PM																																
1:45 PM																																
2:00 PM																																
2:15 PM																																
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5:30 PM																																
5:45 PM																																
6:00 PM																																
6:15 PM																																
6:30 PM																																
6:45 PM																																
TOTAL VOLUMES =	42	66	44	145	67	153	42	1366	25	11	661	50	2672																			

PM Peak Hr Begins at: 4:30 PM

PEAK VOLUMES = 22 47 22 85 42 91 21 767 15 7 381 30 1530
 PEAK HR. FACTOR: 0.784 0.826 0.956 0.901 0.963

CONTROL: SIGNALIZED

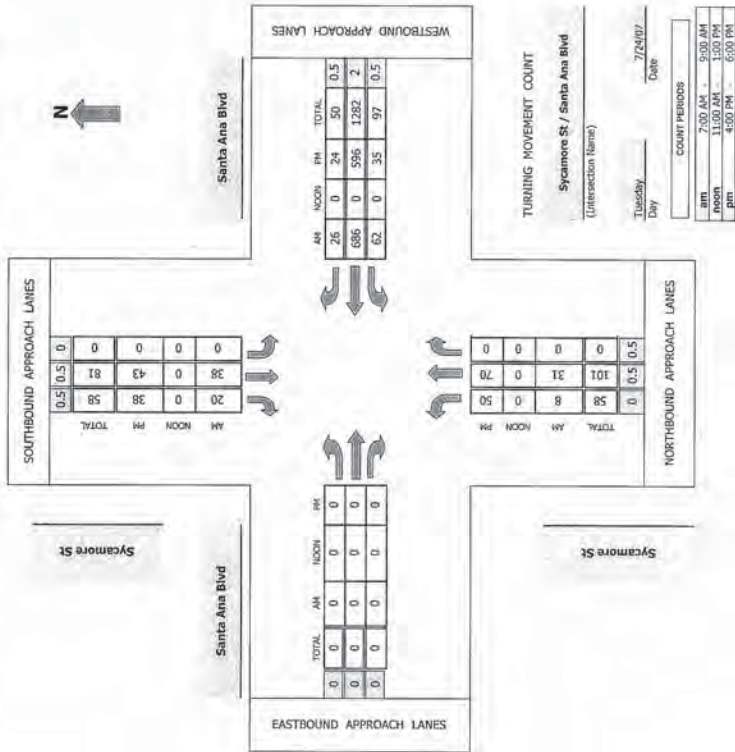
per-flow conservation check

Intersection Turning Movement
Prepared by:
National Data & Surveying Services

14

TMC Summary of Sycamore St/Santa Ana Blvd

Project #: 07-1213-002



Intersection Turning Movement
Prepared by:
National Data & Surveying Services

N-S STREET: Sycamore St LOCATION: City of Santa Ana
E-W STREET: Santa Ana Blvd PROJECT#: 07-1213-002
DATE: 7/24/2007 DAY: TUESDAY

LAMES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
6:00 AM	0	1	8	0	12	0	0	0	0	7	139	1	160
6:15 AM	0	1	8	1	14	1	1	1	1	13	130	7	174
6:30 AM	0	1	8	2	16	2	2	2	2	15	140	10	197
6:45 AM	0	1	8	3	19	3	3	3	3	18	172	10	222
7:00 AM	0	1	8	4	22	4	4	4	4	19	191	10	249
7:15 AM	0	1	8	5	25	5	5	5	5	22	216	10	283
7:30 AM	0	1	8	6	28	6	6	6	6	25	241	10	316
7:45 AM	0	1	8	7	31	7	7	7	7	28	266	10	344
8:00 AM	0	1	8	8	34	8	8	8	8	31	291	10	372
8:15 AM	0	1	8	9	37	9	9	9	9	34	316	10	400
8:30 AM	0	1	8	10	40	10	10	10	10	37	341	10	428
8:45 AM	0	1	8	11	43	11	11	11	11	40	366	10	456
9:00 AM	0	1	8	12	46	12	12	12	12	43	391	10	484
9:15 AM	0	1	8	13	49	13	13	13	13	46	416	10	512
9:30 AM	0	1	8	14	52	14	14	14	14	49	441	10	540
9:45 AM	0	1	8	15	55	15	15	15	15	52	466	10	568
10:00 AM	0	1	8	16	58	16	16	16	16	55	491	10	596
10:15 AM	0	1	8	17	61	17	17	17	17	58	516	10	624
10:30 AM	0	1	8	18	64	18	18	18	18	61	541	10	652
10:45 AM	0	1	8	19	67	19	19	19	19	64	566	10	680
11:00 AM	0	1	8	20	70	20	20	20	20	67	591	10	708
11:15 AM	0	1	8	21	73	21	21	21	21	70	616	10	736
11:30 AM	0	1	8	22	76	22	22	22	22	73	641	10	764
11:45 AM	0	1	8	23	79	23	23	23	23	76	666	10	792
TOTAL	13	53	0	0	87	32	0	0	0	105	1268	44	1602

AM Peak Hr Begins at: 7:30 AM

PEAK VOLUMES =	8	31	0	0	38	20	0	0	0	62	686	26	871
PEAK HR. FACTOR:	0.574												
CONTROL:	2-Way stop N/S												

Intersection Turning Movement

National Data & Surveying Services

Prepared by:

N-S STREET: Sycamore St DATE: 7/24/2007 LOCATION: City of Santa Ana
 E-W STREET: 5TH ST DAY: TUESDAY PROJECT# 07-1213-003

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR
6:00 AM	4	4	4	4	13	4	4	3	3	113	3	3				144
6:15 AM	3	8	10	9	10	9	9	5	5	112	3	3				150
6:30 AM	11	10	11	5	4	155	3	4	4	155	3	3				189
6:45 AM	5	6	18	15	2	173	4	2	2	173	4	4				223
7:00 AM	6	2	34	6	5	213	6	5	4	154	2	2				272
7:15 AM	5	3	18	6	4	154	2	4	3	120	3	3				192
7:30 AM	2	4	17	6	3	120	3	2	2	128	6	6				155
7:45 AM	4	8	12	6	2	128	6	2	2	128	6	6				166
8:00 AM																
8:15 AM																
8:30 AM																
8:45 AM																
9:00 AM																
9:15 AM																
9:30 AM																
9:45 AM																
10:00 AM																
10:15 AM																
10:30 AM																
10:45 AM																
11:00 AM																
11:15 AM																
11:30 AM																
11:45 AM																
TOTAL VOLUMES =	0	40	45	0	133	57	0	28	28	1168	30	30	0	0	0	1501

AM Peak Hr Begins at: 7:30 AM

PEAK VOLUMES = 0 27 21 81 32 0 15 695 15 0 0 0 886

PEAK HR. FACTOR: 0.571 0.706 0.809 0.000 0.814

CONTROL: 2-Way Stop N & S

Intersection Turning Movement

National Data & Surveying Services

Prepared by:

N-S STREET: Sycamore St DATE: 7/24/2007 LOCATION: City of Santa Ana
 E-W STREET: 5TH ST DAY: TUESDAY PROJECT# 07-1213-003

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR
1:00 PM	0	5	9	7	4	64	3	3	4	64	3	3				92
1:15 PM	0	4	9	10	9	86	3	3	9	86	3	3				121
1:30 PM	1	7	12	8	20	97	4	4	20	97	4	4				149
1:45 PM	3	4	8	5	14	115	6	6	14	115	6	6				155
2:00 PM	1	7	12	7	16	95	1	1	16	95	1	1				139
2:15 PM	2	6	7	7	9	61	3	3	9	61	3	3				92
2:30 PM	2	5	8	6	9	77	3	3	9	77	3	3				95
2:45 PM																110
3:00 PM																
3:15 PM																
3:30 PM																
3:45 PM																
4:00 PM																
4:15 PM																
4:30 PM																
4:45 PM																
5:00 PM																
5:15 PM																
5:30 PM																
5:45 PM																
6:00 PM																
6:15 PM																
6:30 PM																
6:45 PM																
TOTAL VOLUMES =	0	10	45	0	69	60	0	91	91	653	25	25	0	0	0	953

PM Peak Hr Begins at: 4:15 PM

PEAK VOLUMES = 0 5 22 41 30 0 59 393 14 0 0 0 564

PEAK HR. FACTOR: 0.844 0.888 0.863 0.000 0.910

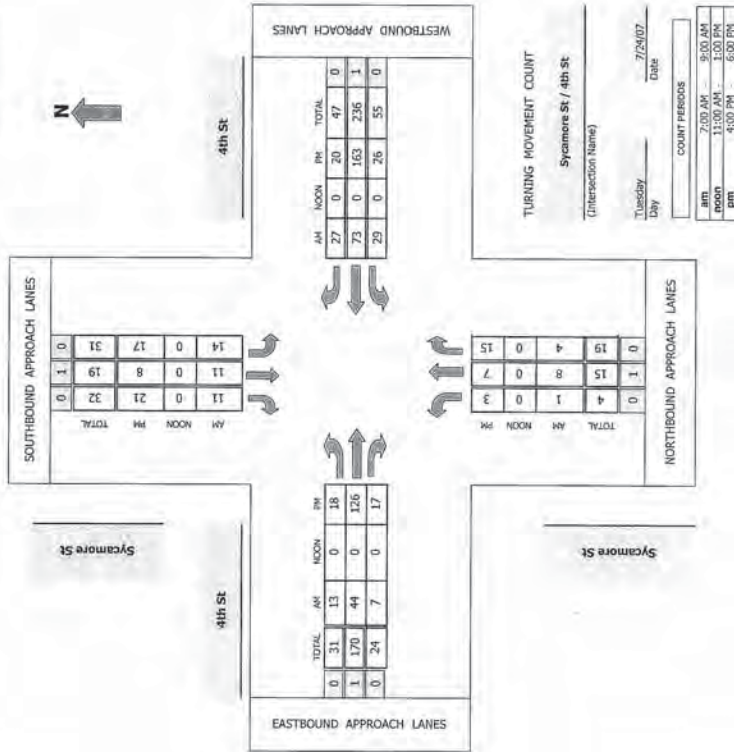
CONTROL: 2-Way Stop N & S

Intersection Turning Movement
Prepared by:
National Data & Surveying Services

16

TMC Summary of Sycamore St/4th St

Project #: 07-1213-004



Intersection Turning Movement
Prepared by:
National Data & Surveying Services

N-S STREET: Sycamore St LOCATION: City of Santa Ana
E-W STREET: 4th St DATE: 7/24/2007
DAY: TUESDAY PROJECT#: 07-1213-004

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:00 AM	0	1	0	0	2	3	1	8	0	2	16	3	38
6:15 AM	0	1	1	1	2	6	1	6	0	3	17	6	45
6:30 AM	0	2	1	4	2	4	1	13	1	1	10	6	45
6:45 AM	0	0	2	2	1	4	3	6	2	4	23	5	52
7:00 AM	0	2	0	5	2	4	3	7	0	2	23	5	54
7:15 AM	0	1	2	4	2	3	10	1	4	23	7	59	
7:30 AM	0	1	0	1	3	3	4	13	3	14	18	8	68
7:45 AM	0	4	2	4	4	2	3	14	3	9	9	7	61
8:00 AM	0	1	1	1	1	1	1	6	0	0	0	1	0
8:15 AM	0	2	1	1	2	6	1	6	0	0	0	0	0
8:30 AM	0	1	1	1	2	4	1	10	1	1	10	6	45
8:45 AM	0	0	2	2	1	4	3	6	2	4	23	5	52
9:00 AM	0	1	2	4	2	4	3	7	0	2	23	5	54
9:15 AM	0	1	0	1	3	3	4	13	3	14	18	8	68
9:30 AM	0	4	2	4	4	2	3	14	3	9	9	7	61
9:45 AM	0	1	1	1	2	6	1	6	0	0	0	0	0
10:00 AM	0	2	1	4	2	4	1	13	1	1	10	6	45
10:15 AM	0	0	2	2	1	4	3	6	2	4	23	5	52
10:30 AM	0	2	0	5	2	4	3	7	0	2	23	5	54
10:45 AM	0	1	2	4	2	3	10	1	4	23	7	59	
11:00 AM	0	1	0	1	3	3	4	13	3	14	18	8	68
11:15 AM	0	4	2	4	4	2	3	14	3	9	9	7	61
11:30 AM	0	1	1	1	2	6	1	6	0	0	0	0	0
11:45 AM	0	2	1	4	2	4	1	13	1	1	10	6	45

AM Peak Hr Begins at: 8:00 AM

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	2	12	8	23	19	27	19	77	10	39	139	47	422
PEAK VOLUMES =	1	8	4	14	11	11	13	44	7	29	73	27	242
PEAK HR. FACTOR:				0.542			0.818			0.806			0.890
CONTROL:	4-Way Stop												

Intersection Turning Movement

Prepared by:
National Data & Surveying Services

N-S STREET: Sycamore St DATE: 7/24/2007 LOCATION: City of Santa Ana
 E-W STREET: 4th St DAY: TUESDAY PROJECT# 07-1213-004

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SR	SL	ST	SR	EL	EL	ET	ER	WL	WT	WR	WT	TOTAL
1:00 PM	1	3	3	3	2	1	5	3	32	4	4	5	43	4	106	
1:15 PM	1	1	4	6	3	6	7	30	5	1	42	2	108			
1:30 PM	0	1	4	3	1	7	4	36	5	11	37	8	117			
1:45 PM	1	2	4	6	3	3	4	28	3	9	41	6	110			
2:00 PM	0	1	3	2	2	5	2	22	0	6	31	6	81			
2:15 PM	0	1	3	4	1	7	5	27	1	3	37	4	93			
2:30 PM	0	1	3	3	4	1	8	2	37	3	40	6	111			
2:45 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			
3:00 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			
3:15 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			
3:30 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			
3:45 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			
4:00 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			
4:15 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			
4:30 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			
4:45 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			
5:00 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			
5:15 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			
5:30 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			
5:45 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			
6:00 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			
6:15 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			
6:30 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			
6:45 PM	1	3	3	3	4	1	8	2	37	3	40	6	111			

TOTAL VOLUMES =	NL	NT	NR	SR	SL	ST	SR	EL	EL	ET	ER	WL	WT	WR	TOTAL
	5	12	26	46	32	13	46	29	240	24	24	40	313	41	821

PM Peak Hr Begins at: 4:00 PM

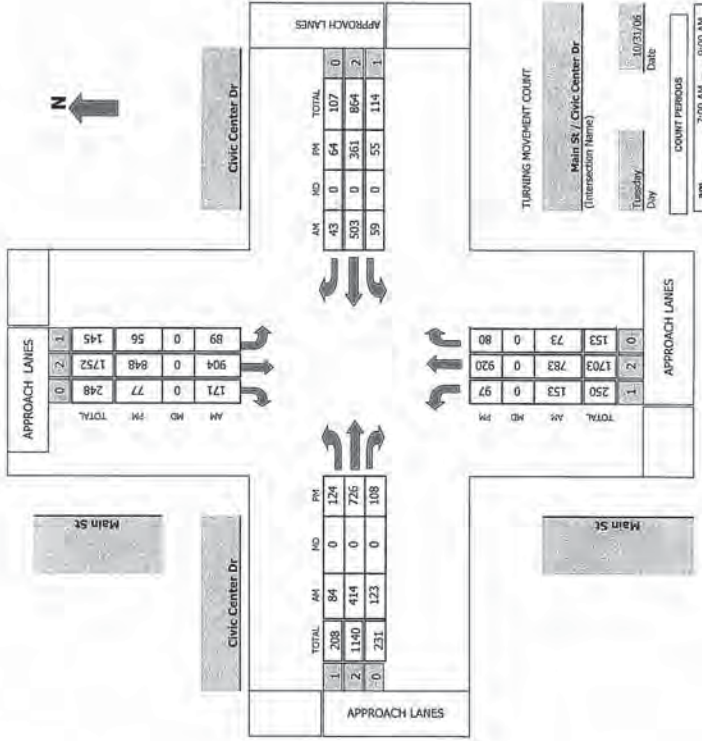
PEAK VOLUMES =	3	7	15	17	18	126	17	26	163	20	441
PEAK HR. FACTOR:	0.893		0.767		0.894		0.933		0.942		

CONTROL: 4-Way Stop

17

TMC Summary of Main St/Civic Center Dr

Project #: 06-1313-022



Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Main St DATE: 10/31/2006 LOCATION: City of Santa Ana
 E-W STREET: Civic Center Dr DAY: TUESDAY PROJECT# 06-1313-022

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

6:00 AM																				
6:15 AM																				
6:30 AM																				
6:45 AM																				
7:00 AM	31	171	14	14	6	213	29	11	76	15	12	78	5	661						
7:15 AM	40	183	19	19	227	36	14	106	22	15	109	7	797							
7:30 AM	43	199	17	19	218	37	19	117	34	16	117	12	848							
7:45 AM	36	212	21	23	240	43	23	102	36	16	136	11	899							
8:00 AM	34	189	16	28	219	55	28	89	31	12	141	13	855							
8:15 AM	29	174	11	20	231	71	20	77	28	11	105	9	786							
8:30 AM	30	163	9	16	198	58	24	69	21	8	89	7	692							
8:45 AM	23	168	7	10	180	43	18	63	18	9	77	6	622							
9:00 AM																				
9:15 AM																				
9:30 AM																				
9:45 AM																				
10:00 AM																				
10:15 AM																				
10:30 AM																				
10:45 AM																				
11:00 AM																				
11:15 AM																				
11:30 AM																				
11:45 AM																				

TOTAL VOLUMES =	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR	TOTAL
	266	1459	114	114	141	1726	372	157	157	699	205	99	852	70	43	3399	6160

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES =	153	783	73	89	904	171	84	414	123	59	503	43	3399
PEAK HR. FACTOR:	0.938												0.911
CONTROL:	Signalized												0.945

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Main St DATE: 10/31/2006 LOCATION: City of Santa Ana
 E-W STREET: Civic Center Dr DAY: TUESDAY PROJECT# 06-1313-022

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

1:00 PM																				
1:15 PM																				
1:30 PM																				
1:45 PM																				
2:00 PM																				
2:15 PM																				
2:30 PM																				
2:45 PM																				
3:00 PM																				
3:15 PM																				
3:30 PM																				
3:45 PM																				
4:00 PM	19	243	21	9	176	12	28	112	21	7	58	4	710							
4:15 PM	23	277	19	8	184	17	31	123	29	10	61	7	789							
4:30 PM	21	299	23	7	186	23	40	139	32	8	70	6	854							
4:45 PM	29	228	29	5	167	18	48	153	21	5	75	9	787							
5:00 PM	20	231	16	27	216	33	30	212	39	14	112	20	970							
5:15 PM	20	225	18	14	226	12	24	188	27	22	91	21	888							
5:30 PM	28	236	17	10	239	14	22	173	21	14	83	14	871							
5:45 PM	26	219	14	8	218	15	19	149	23	10	76	9	786							
6:00 PM																				
6:15 PM																				
6:30 PM																				
6:45 PM																				

TOTAL VOLUMES =	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR	TOTAL
	186	1958	157	88	88	1612	144	242	242	1249	213	90	626	90	64	6655	6655

PM Peak Hr Begins at: 4:45 PM

PEAK VOLUMES =	97	920	80	56	848	77	124	726	108	55	361	64	3516
PEAK HR. FACTOR:	0.959												0.852
CONTROL:	Signalized												0.906

Intersection Turning Movement

Prepared by: Southland Car Counters

18

N-S STREET: Main St
 E-W STREET: Santa Ana Blvd
 DATE: 10/11/2005
 DAY: TUESDAY
 LOCATION: City of Santa Ana
 PROJECT#: H0509073

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	WL	WT	WR	TOTAL
6:00 AM																
6:15 AM																
6:30 AM																
6:45 AM																
7:00 AM	18	200		199	17					14	155	23			626	
7:15 AM	13	204		215	20					16	166	12			646	
7:30 AM	14	189		265	17					15	170	9			679	
7:45 AM	14	243		265	22					11	184	15			754	
8:00 AM	17	212		238	19					12	213	30			741	
8:15 AM	12	187		246	21					19	201	13			699	
8:30 AM	25	163		190	20					10	192	12			612	
8:45 AM	21	193		191	18					9	129	18			579	
9:00 AM																
9:15 AM																
9:30 AM																
9:45 AM																
10:00 AM																
10:15 AM																
10:30 AM																
10:45 AM																
11:00 AM																
11:15 AM																
11:30 AM																
11:45 AM																
TOTAL VOLUMES =	134	1591	0	0	1809	154	0	0	0	106	1410	132			5336	

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	57	831	0	0	1014	79	0	0	0	57	768	67			2873
PEAK HR. FACTOR:	0.864														
CONTROL:	0.952														
	0.000														
	0.875														
	0.953														

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Main St
 E-W STREET: Santa Ana Blvd
 DATE: 10/11/2005
 DAY: TUESDAY
 LOCATION: City of Santa Ana
 PROJECT#: H0509073

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	WL	WT	WR	TOTAL
1:00 PM																
1:15 PM																
1:30 PM																
1:45 PM																
2:00 PM																
2:15 PM																
2:30 PM																
2:45 PM																
3:00 PM																
3:15 PM																
3:30 PM																
3:45 PM																
4:00 PM	25	286		214	13					18	145	19			720	
4:15 PM	14	276		204	15					20	150	32			711	
4:30 PM	19	283		205	10					21	126	21			685	
4:45 PM	24	266		229	13					19	153	19			723	
5:00 PM	18	293		274	22					16	174	32			829	
5:15 PM	15	255		274	12					29	206	25			816	
5:30 PM	25	295		274	11					8	182	15			810	
5:45 PM	14	284		253	16					22	172	25			786	
6:00 PM																
6:15 PM																
6:30 PM																
6:45 PM																
TOTAL VOLUMES =	154	2238	0	0	1927	112	0	0	0	153	1308	188			6080	

PM Peak Hr Begins at: 500 PM

PEAK VOLUMES =	72	1127	0	0	1075	61	0	0	0	75	734	97			3241
PEAK HR. FACTOR:	0.937														
CONTROL:	0.959														
	0.000														
	0.871														
	0.977														

Intersection Turning Movement

Prepared by: Southland Car Counters

19

N-S STREET: Main St
 E-W STREET: 5th St
 DATE: 10/05/2005
 DAY: WEDNESDAY
 LOCATION: City of Santa Ana
 PROJECT#: H0509074

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

6:00 AM																				
6:15 AM																				
6:30 AM																				
6:45 AM																				
7:00 AM																				
7:15 AM																				
7:30 AM																				
7:45 AM																				
8:00 AM																				
8:15 AM																				
8:30 AM																				
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9:00 AM																				
9:15 AM																				
9:30 AM																				
9:45 AM																				
10:00 AM																				
10:15 AM																				
10:30 AM																				
10:45 AM																				
11:00 AM																				
11:15 AM																				
11:30 AM																				
11:45 AM																				

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	ST	SL	NR	NT	EL	ET	ER	WL	WT	WR	WL	WT	WR	TOTAL
	0	1554	63	111	1754	0	107	665	63	0	0	0	0	0	0	0	0	0	0	4317

AM Peak Hr Begins at: 7:30 AM

PEAK VOLUMES = 0 809 41 62 940 0 59 407 29 0 0 0 0 2347

PEAK HR. FACTOR: 0.928 0.911 0.859 0.000 0.905

CONTROL:

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Main St
 E-W STREET: 5th St
 DATE: 10/05/2005
 DAY: WEDNESDAY
 LOCATION: City of Santa Ana
 PROJECT#: H0509074

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

1:00 PM																				
1:15 PM																				
1:30 PM																				
1:45 PM																				
2:00 PM																				
2:15 PM																				
2:30 PM																				
2:45 PM																				
3:00 PM																				
3:15 PM																				
3:30 PM																				
3:45 PM																				
4:00 PM																				
4:15 PM																				
4:30 PM																				
4:45 PM																				
5:00 PM																				
5:15 PM																				
5:30 PM																				
5:45 PM																				
6:00 PM																				
6:15 PM																				
6:30 PM																				
6:45 PM																				

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	ST	SL	NR	NT	EL	ET	ER	WL	WT	WR	WL	WT	WR	TOTAL
	0	2208	50	110	1901	0	197	981	107	0	0	0	0	0	0	0	0	0	0	5554

PM Peak Hr Begins at: 5:00 PM

PEAK VOLUMES = 0 1107 24 73 1041 0 98 512 63 0 0 0 0 2918

PEAK HR. FACTOR: 0.965 0.960 0.738 0.000 0.943

CONTROL:

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Main St
 E-W STREET: 4th St
 DATE: 10/05/2005
 DAY: WEDNESDAY
 LOCATION: City of Santa Ana
 PROJECT#: H0509075

LANES:	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND										
	NL	NT	NR	SL	ST	SR	ST	SL	EL	ET	ER	EL	ET	ER	WL	WT	WR	WT	WR	TOTAL						
6:00 AM																										
6:15 AM																										
6:30 AM																										
6:45 AM																										
7:00 AM	225	6	211	3	3	12	2	23	9	491																
7:15 AM	208	5	253	3	3	19	1	21	6	516																
7:30 AM	198	10	277	3	26	6	31	7	558																	
7:45 AM	182	3	239	8	24	7	29	17	509																	
8:00 AM	224	4	230	2	14	4	33	8	519																	
8:15 AM	175	5	202	9	14	2	26	5	438																	
8:30 AM	195	3	192	11	14	2	39	9	465																	
8:45 AM	171	10	199	19	10	4	60	7	480																	
9:00 AM																										
9:15 AM																										
9:30 AM																										
9:45 AM																										
10:00 AM																										
10:15 AM																										
10:30 AM																										
10:45 AM																										
11:00 AM																										
11:15 AM																										
11:30 AM																										
11:45 AM																										
TOTAL VOLUMES =	0	1578	46	0	1803	58	0	133	28	0	262	68	3976	0	812	22	0	999	16	0	83	18	0	114	38	2102

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES = 0.914
 PEAK HR. FACTOR: 0.906
 CONTROL: 0.789

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Main St
 E-W STREET: 4th St
 DATE: 10/05/2005
 DAY: WEDNESDAY
 LOCATION: City of Santa Ana
 PROJECT#: H0509075

LANES:	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND										
	NL	NT	NR	SL	ST	SR	ST	SL	EL	ET	ER	EL	ET	ER	WL	WT	WR	WT	WR	TOTAL						
1:00 PM																										
1:15 PM																										
1:30 PM																										
1:45 PM																										
2:00 PM																										
2:15 PM																										
2:30 PM																										
2:45 PM																										
3:00 PM																										
3:15 PM																										
3:30 PM																										
3:45 PM																										
4:00 PM	273	8	205	7	21	10	93	16	633																	
4:15 PM	285	21	247	7	30	13	74	18	695																	
4:30 PM	253	22	217	8	32	9	54	20	615																	
4:45 PM	259	14	241	9	18	12	50	17	620																	
5:00 PM	260	7	275	16	26	10	62	15	671																	
5:15 PM	271	17	286	11	27	11	47	21	691																	
5:30 PM	303	11	268	10	32	9	61	13	707																	
5:45 PM	282	15	235	9	40	15	50	11	657																	
6:00 PM																										
6:15 PM																										
6:30 PM																										
6:45 PM																										
TOTAL VOLUMES =	0	2186	115	0	1974	77	0	226	89	0	491	131	5289	0	1116	50	0	1064	46	0	125	45	0	220	60	2726

PM Peak Hr Begins at: 5:00 PM

PEAK VOLUMES = 0.928
 PEAK HR. FACTOR: 0.934
 CONTROL: 0.773

Transportation Studies, Inc.
1350 Reynolds Avenue
Suite 115
Irvine, CA 92614

City: SANTA ANA
N-S Direction: MAIN STREET
E-W Direction: 1ST STREET

File Name : H0509077
Site Code : 00000112
Start Date : 10/5/2005
Page No : 1

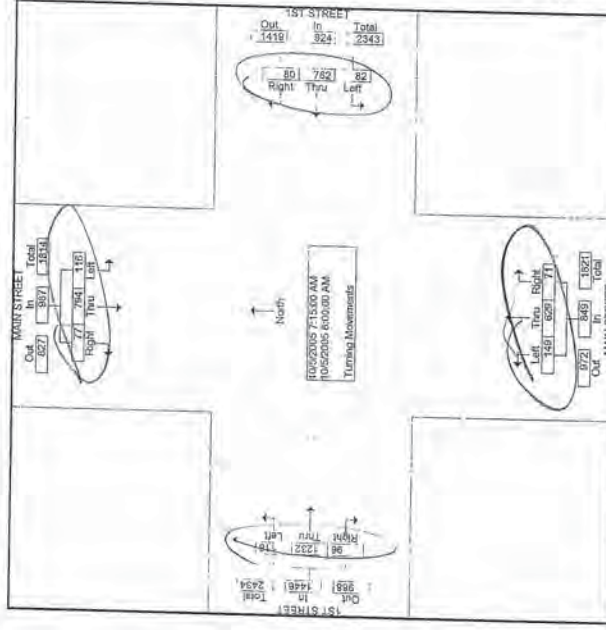
Groups Printed - Turning Movements

Start Time	MAIN STREET Southbound			1ST STREET Westbound			MAIN STREET Northbound			1ST STREET Eastbound			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
07:00 AM	15	160	13	11	185	16	15	108	28	19	301	33	892
07:15 AM	34	190	24	24	188	18	17	157	34	26	301	21	1032
07:30 AM	22	202	28	19	185	16	23	155	43	21	312	29	1055
07:45 AM	16	220	30	18	204	22	20	174	34	25	313	32	1109
Total	77	772	95	72	740	72	75	604	139	91	1227	115	4078
08:00 AM	15	182	34	19	187	28	11	133	38	24	308	38	1011
08:15 AM	31	185	29	25	177	10	28	160	37	15	281	28	1015
08:30 AM	18	144	21	18	174	13	18	131	41	22	252	31	885
08:45 AM	16	142	23	17	174	22	16	131	47	16	279	24	907
Total	80	653	107	79	708	77	74	555	163	77	1128	117	3816
*** BREAK ***													
04:00 PM	40	157	30	27	279	33	25	214	38	21	229	31	1124
04:15 PM	34	183	47	13	232	23	25	222	32	21	215	37	1100
04:30 PM	35	161	31	22	272	30	24	195	50	12	223	33	1082
04:45 PM	35	183	49	19	226	30	19	227	47	18	223	33	1082
Total	145	704	157	81	1009	116	93	862	167	78	885	140	4447
05:00 PM	33	197	33	15	289	23	22	210	47	25	256	44	1204
05:15 PM	38	234	47	20	233	30	24	243	56	20	217	41	1203
05:30 PM	33	176	42	15	273	20	14	228	43	22	236	31	1133
05:45 PM	26	201	42	21	214	39	21	252	55	16	193	39	1123
Total	130	613	164	71	1019	112	81	931	202	83	902	155	4883
Grand Total	432	2842	523	303	3476	377	323	2652	671	329	4152	527	17007
Approach %	11.1	75.5	13.4	7.3	38.6	9.1	8.2	74.8	17.0	6.6	82.9	10.5	
Total %	2.5	17.3	3.1	1.8	20.4	2.2	1.9	17.4	3.9	1.9	24.4	3.1	

Transportation Studies, Inc.
1350 Reynolds Avenue
Suite 115
Irvine, CA 92614

File Name : H0509077
Site Code : 00000112
Start Date : 10/5/2005
Page No : 2

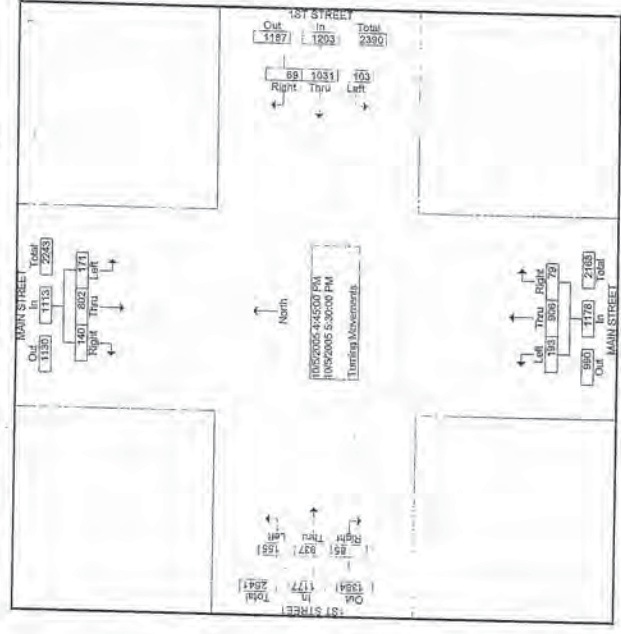
Start Time	MAIN STREET Southbound			1ST STREET Westbound			MAIN STREET Northbound			1ST STREET Eastbound			Int. Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	
07:15 AM	77	784	118	80	762	82	82	824	71	629	149	849	4206
07:45 AM	16	220	30	18	204	22	244	20	174	34	228	25	1108
07:45 AM	16	220	30	18	204	22	244	20	174	34	228	25	1108
High Int. Volume	16	220	30	18	204	22	244	20	174	34	228	25	1108
Peak Factor	0.928												0.947



Transportation Studies, Inc.
1350 Reynolds Avenue
Suite 115
Irvine, CA 92614

File Name : H0509077
Site Code : 00000112
Start Date : 10/5/2005
Page No. : 3

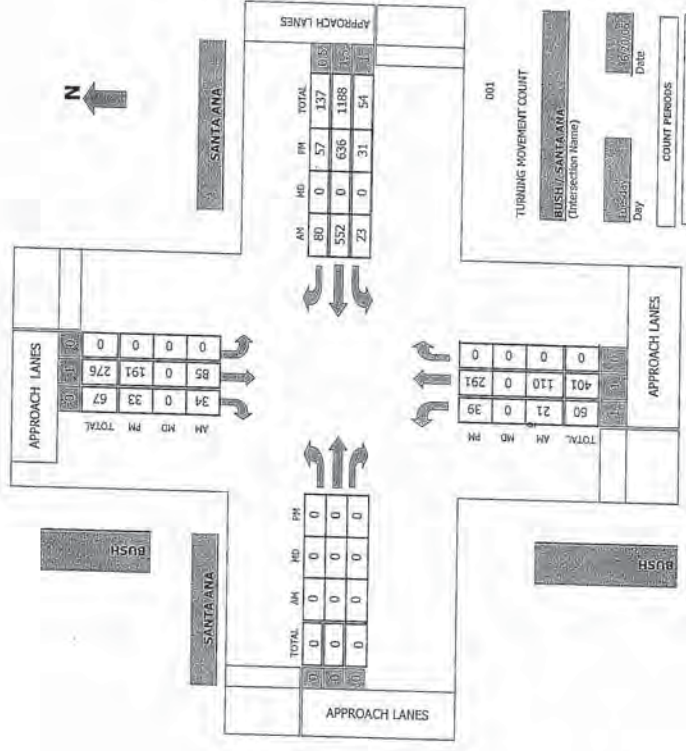
Start Time	MAIN STREET Southbound			1ST STREET Westbound			MAIN STREET Northbound			1ST STREET Eastbound		
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left
Peak Hour From 04:30 PM to 05:45 PM - Peak 1 of 1	140	802	171	69	1031	103	79	906	193	85	937	155
Volume	12.6	72.1	15.4	5.7	85.7	8.6	6.7	76.9	16.4	7.2	79.6	13.2
Percent	33	197	33	15	299	23	22	210	47	25	256	44
Peak Factor	05:15 PM			05:00 PM			05:15 PM			05:00 PM		
High Inc.	38	234	47	15	289	23	337	24	243	56	323	44
Volume	0.872			0.852			0.912			0.905		
Peak Factor												



23

TMC Summary of BUSH/SANTA ANA

Project #: 06-1192-008



TURNING MOVEMENT COUNT
BUSH/SANTA ANA
(Intersection Name)

Day	Right	Thru	Left	DNC
AM	0	0	0	0
PM	0	0	0	0
TOTL	0	0	0	0

COUNT PERIODS

Day	7:30 AM - 9:00 AM	12:00 PM - 1:00 PM	4:30 PM - 5:00 PM
AM	0	0	0
PM	0	0	0
TOTL	0	0	0

AM PEAK HOUR: 7:35 AM
NOON PEAK HOUR: 0 AM
PM PEAK HOUR: 4:50 PM

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: BUSH
 E-W STREET: SANTA ANA
 DATE: 6/20/2006
 DAY: TUESDAY
 LOCATION: City of Santa Ana
 PROJECT# 06-1192-008

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	TOTAL	
6:00 AM																	
6:15 AM																	
6:30 AM																	
6:45 AM																	
7:00 AM	2	26			21	7							4	127	11	198	
7:15 AM	3	28			19	10							5	135	25	225	
7:30 AM	5	29			22	9							3	157	15	240	
7:45 AM	4	38			23	8							7	129	19	228	
8:00 AM	9	15			21	7							8	131	21	212	
8:15 AM	8	18			19	10							9	123	20	207	
8:30 AM	10	16			16	10							4	123	25	204	
8:45 AM	7	22			28	7							6	136	18	224	
9:00 AM																	
9:15 AM																	
9:30 AM																	
9:45 AM																	
10:00 AM																	
10:15 AM																	
10:30 AM																	
10:45 AM																	
11:00 AM																	
11:15 AM																	
11:30 AM																	
11:45 AM																	
TOTAL VOLUMES =	48	192	0	0	169	68			0	0	0	0	46	1061	154	1738	

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES = 21 110 0 0 85 34 0 0 0 0 23 552 80 905
 PEAK HR. FACTOR: 0.780 0.960 0.000 0.936
 CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: BUSH
 E-W STREET: SANTA ANA
 DATE: 6/20/2006
 DAY: TUESDAY
 LOCATION: City of Santa Ana
 PROJECT# 06-1192-008

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	TOTAL	
1:00 PM																	
1:15 PM																	
1:30 PM																	
1:45 PM																	
2:00 PM																	
2:15 PM																	
2:30 PM																	
2:45 PM																	
3:00 PM																	
3:15 PM																	
3:30 PM																	
3:45 PM																	
4:00 PM	10	74			41	6							12	129	18	290	
4:15 PM	7	54			39	10							9	147	17	283	
4:30 PM	10	73			43	6							5	150	11	298	
4:45 PM	11	65			44	13							9	138	16	296	
5:00 PM	12	71			59	10							7	188	18	365	
5:15 PM	6	82			45	4							10	160	12	319	
5:30 PM	8	60			52	5							5	127	17	274	
5:45 PM	14	63			31	1							6	122	18	255	
6:00 PM																	
6:15 PM																	
6:30 PM																	
6:45 PM																	
TOTAL VOLUMES =	78	542	0	0	354	55			0	0	0	0	63	1161	127	2380	

PM Peak Hr Begins at: 4:30 PM

PEAK VOLUMES = 39 291 0 0 191 33 0 0 0 0 31 636 57 1278
 PEAK HR. FACTOR: 0.938 0.812 0.000 0.850
 CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: BUSH
 E-W STREET: 5TH ST
 DATE: 6/22/2006
 DAY: THURSDAY
 LOCATION: City of Santa Ana
 PROJECT#: 06-1192-005

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	WT	WR	TOTAL	
6:00 AM	19	3	2	3	11	6	6	52	3	0	0	0	0	0	96	
6:15 AM	15	3	3	7	26	6	7	76	4	0	0	0	0	0	137	
6:30 AM	26	6	6	6	21	6	8	85	4	0	0	0	0	0	154	
6:45 AM	46	13	8	25	2	2	96	3	3	0	0	0	0	0	193	
7:00 AM	22	6	6	6	21	8	54	2	2	0	0	0	0	0	119	
7:15 AM	24	6	6	8	21	7	45	7	7	0	0	0	0	0	118	
7:30 AM	13	4	4	3	16	10	52	2	2	0	0	0	0	0	100	
7:45 AM	25	4	4	5	17	5	39	8	8	0	0	0	0	0	103	
8:00 AM																
8:15 AM																
8:30 AM																
8:45 AM																
9:00 AM																
9:15 AM																
9:30 AM																
9:45 AM																
10:00 AM																
10:15 AM																
10:30 AM																
10:45 AM																
11:00 AM																
11:15 AM																
11:30 AM																
11:45 AM																
TOTAL VOLUMES =	0	190	44	46	158	0	50	499	33	0	0	0	0	0	1020	

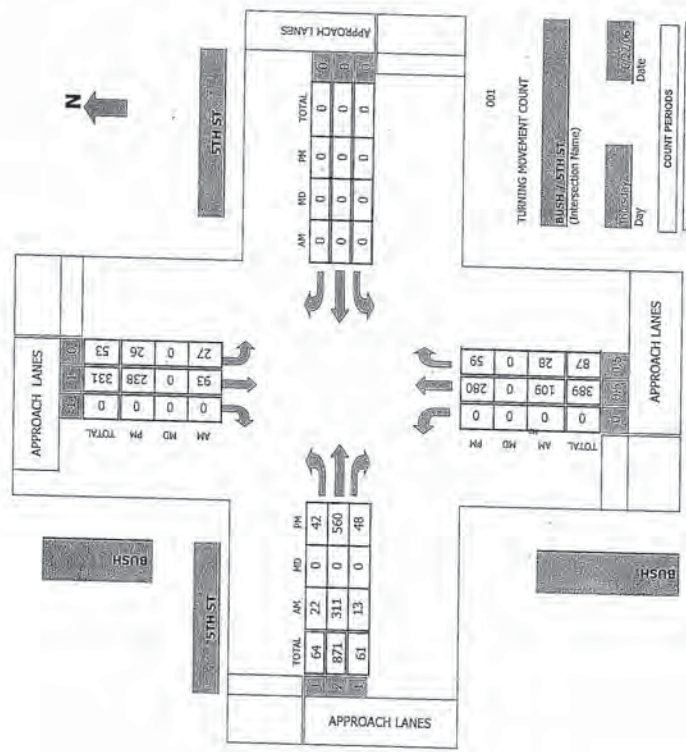
AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES =	0	109	28	27	93	0	22	311	13	0	0	0	0	0	603
PEAK HR. FACTOR:	0.581														
CONTROL:	Signalized														
	0.856														
	0.909														
	0.000														

24

TMC Summary of BUSH/5TH ST

Project #: 06-1192-005



AM PEAK HOUR	7:15 AM
NOON PEAK HOUR	0 AM
PM PEAK HOUR	5:00 PM

TURNING MOVEMENT COUNT

BUSH/5TH ST
(Intersection Name)

6/22/06
Date

6/22/06
Day

001

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: BUSH DATE: 6/22/2006 LOCATION: City of Santa Ana
 E-W STREET: 5TH ST DAY: THURSDAY PROJECT# 06-1192-005

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
1:00 PM	0	0.5	0	1	1	0	1	2	1	0	0	0	0
1:15 PM	56	4	5	32	15	111	7	230					
1:30 PM	63	5	8	41	14	86	8	220					
1:45 PM	50	5	8	30	19	157	5	274					
2:00 PM	74	7	8	38	10	127	7	271					
2:15 PM	61	5	6	72	15	193	18	370					
2:30 PM	74	6	7	82	10	133	16	328					
2:45 PM	87	19	4	37	10	120	7	284					
3:00 PM	58	29	9	47	7	114	7	271					
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													
5:00 PM													
5:15 PM													
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	523	80	50	379	0	100	1041	75	0	0	0	2248

PM Peak Hr Begins at: 500 PM

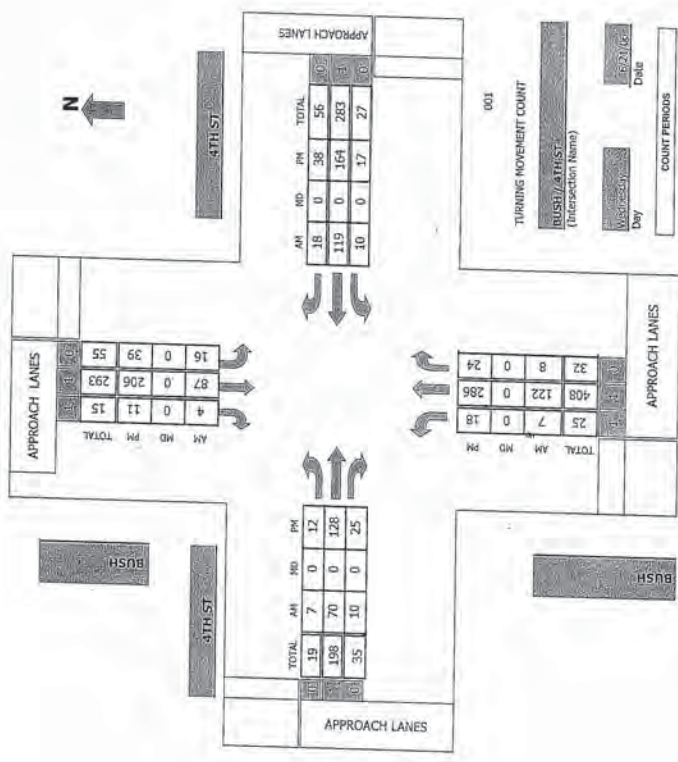
PEAK VOLUMES =	0	280	59	26	238	0	42	560	48	0	0	0	1253
PEAK HR FACTOR:		0.800		0.742			0.719		0.000				0.847

CONTROL: Signalized

25

TMC Summary of BUSH/4TH ST

Project #: 06-1192-007



TURNING MOVEMENT COUNT

BUSH/4TH ST
(Intersection Name)

Day: 6/22/06
Date: 6/22/06

COUNT PERIODS

PERI	7:00 AM - 9:00 AM	9:00 AM - 11:00 AM	11:00 AM - 1:00 PM	1:00 PM - 3:00 PM	3:00 PM - 5:00 PM	5:00 PM - 6:00 PM
PERI						

AM PEAK HOUR: 7:30 AM - 9:00 AM
 NOON PEAK HOUR: 0 AM
 PM PEAK HOUR: 4:45 PM - 6:00 PM

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: BUSH DATE: 6/21/2006 LOCATION: City of Santa Ana
 E-W STREET: 4TH ST DAY: WEDNESDAY PROJECT# 06-1152-007

LANES:	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND												
	NL	NT	NR	SL	ST	SR	ST	SL	NR	NT	ER	ET	EL	SR	ST	SL	NR	NT	ER	ET	EL	SR	ST	WR	WT	WL	WR	WT	TOTAL
6:00 AM	0	17	4	1	9	1	0	10	1	4	17	2	66															
6:15 AM	0	18	2	4	28	0	1	14	0	2	25	2	96															
6:30 AM	1	25	1	3	20	2	1	16	2	4	26	7	108															
6:45 AM	1	48	4	8	22	1	2	22	3	4	33	5	153															
7:00 AM	2	25	0	1	20	0	2	13	3	2	26	5	99															
7:15 AM	3	24	3	4	25	1	2	19	2	0	34	1	118															
7:30 AM	3	16	2	4	15	1	1	18	1	2	42	1	106															
7:45 AM	3	27	3	1	21	2	1	18	2	5	45	2	130															
8:00 AM																												
8:15 AM																												
8:30 AM																												
8:45 AM																												
9:00 AM																												
9:15 AM																												
9:30 AM																												
9:45 AM																												
10:00 AM																												
10:15 AM																												
10:30 AM																												
10:45 AM																												
11:00 AM																												
11:15 AM																												
11:30 AM																												
11:45 AM																												
TOTAL VOLUMES =	13	200	19	26	160	8	10	130	14	23	248	25	876															

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	7	122	8	16	87	4	7	70	10	10	119	18	478
PEAK HR. FACTOR:	0.863												
CONTROL:	Signalized												

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: BUSH DATE: 6/21/2006 LOCATION: City of Santa Ana
 E-W STREET: 4TH ST DAY: WEDNESDAY PROJECT# 06-1152-007

LANES:	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND												
	NL	NT	NR	SL	ST	SR	ST	SL	NR	NT	ER	ET	EL	SR	ST	SL	NR	NT	ER	ET	EL	SR	ST	WR	WT	WL	WR	WT	TOTAL
1:00 PM	8	52	10	8	41	1	3	42	2	8	41	3	219															
1:15 PM	5	58	10	5	47	3	2	30	8	8	43	8	227															
1:30 PM	3	42	6	2	43	4	7	25	1	5	45	5	188															
1:45 PM	7	85	5	4	41	3	4	41	9	6	42	7	254															
2:00 PM	4	57	5	15	70	2	2	22	6	6	46	4	239															
2:15 PM	4	60	6	11	58	5	3	34	5	3	38	12	239															
2:30 PM	3	84	8	9	37	1	3	31	5	2	38	15	236															
2:45 PM	7	72	7	8	40	7	1	31	3	7	43	11	237															
3:00 PM																												
3:15 PM																												
3:30 PM																												
3:45 PM																												
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5:15 PM																												
5:30 PM																												
5:45 PM																												
6:00 PM																												
6:15 PM																												
6:30 PM																												
6:45 PM																												
TOTAL VOLUMES =	41	510	57	62	377	26	25	256	39	45	336	65	1839															

PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	18	286	24	39	206	11	12	128	25	17	164	38	968
PEAK HR. FACTOR:	0.845												
CONTROL:	Signalized												

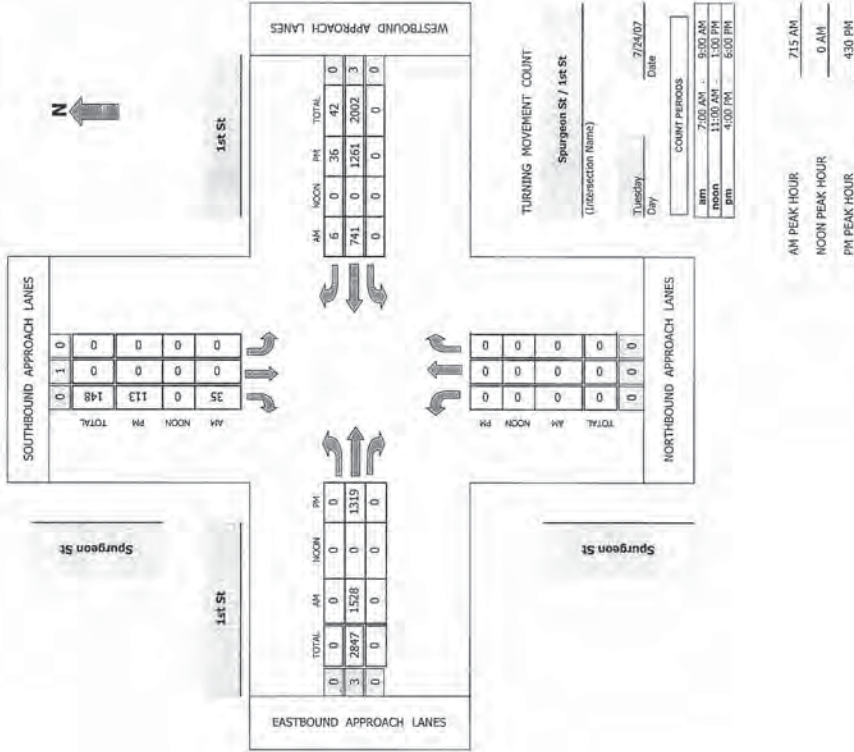
Intersection Turning Movement

Prepared by:
National Data & Surveying Services

26

TMC Summary of Spurgeon St / 1st St

Project #: 07-1213-006



Intersection Turning Movement

National Data & Surveying Services

Prepared by:

N-S STREET: Spurgeon St LOCATION: City of Santa Ana
E-W STREET: 1st St DAY: TUESDAY PROJECT# 07-1213-006
DATE: 7/24/2007

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM													
7:15 AM													
7:30 AM													
7:45 AM													
8:00 AM													
8:15 AM													
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9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	4381

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	0	0	0	0	78	0	2812	0	0	1471	20	4381

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES = 0 0 0 0 0 35 0 1528 0 0 741 6 2310

PEAK HR. FACTOR: 0.000 0.795 0.912 0.920 0.953

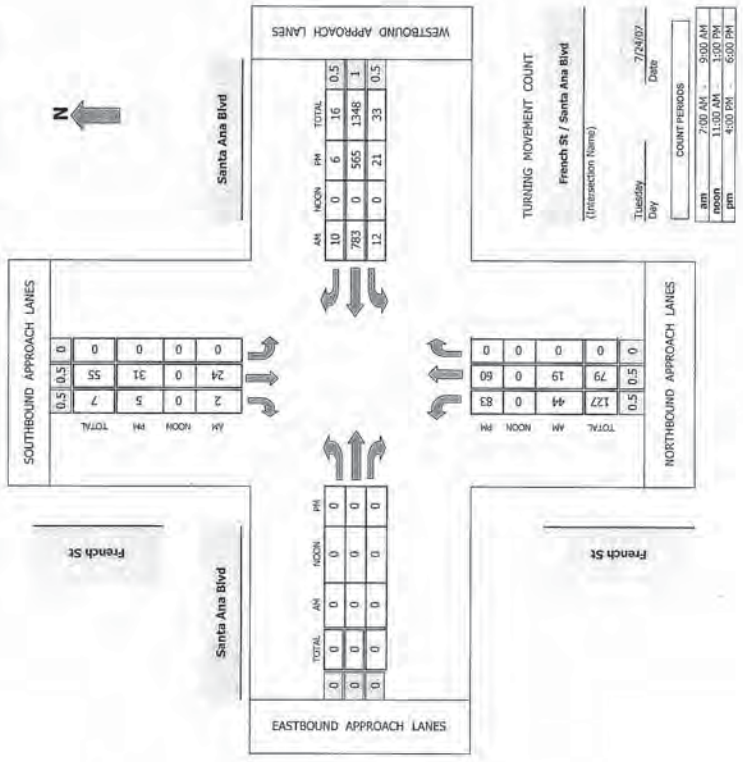
CONTROL: 1-Way Stop S

37

Intersection Turning Movement
Prepared by:
National Data & Surveying Services

TMC Summary of French St/Santa Ana Blvd

Project #: 07-1213-005



Intersection Turning Movement
Prepared by:
National Data & Surveying Services

N-S STREET: Spurgison St DATE: 7/24/2007 LOCATION: City of Santa Ana
E-W STREET: 1st St DAY: TUESDAY PROJECT# 07-1213-006

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR
1:00 PM	0	0	0	0	0	1	0	0	0	3	0	0	0	0	3	0
1:15 PM																
1:30 PM																
1:45 PM																
2:00 PM																
2:15 PM																
2:30 PM																
2:45 PM																
3:00 PM																
3:15 PM																
3:30 PM					17				271				335	11		634
3:45 PM					17				340				330	12		699
4:00 PM					26				336				295	15		672
4:15 PM					24				327				340	6		697
4:30 PM					30				309				305	6		650
4:45 PM					33				347				321	9		710
5:00 PM					27				323				285	14		649
5:15 PM					30				349				296	12		687
5:30 PM																
5:45 PM																
6:00 PM																
6:15 PM																
6:30 PM																
6:45 PM																

TOTAL VOLUMES =	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR	TOTAL
	0	0	0	0	0	0	204	204	0	2602	0	0	0	2507	85	85	5398

PM Peak Hr Begins at: 4:30 PM

PEAK VOLUMES =	0	0	0	0	0	0	113	113	0	1319	0	0	0	1261	36	36	2729			
PEAK HR. FACTOR:	0.000																0.856	0.950	0.937	0.961

CONTROL: 1-Way Stop S

Intersection Turning Movement

National Data & Surveying Services

Prepared by:

N-S STREET: French St LOCATION: City of Santa Ana
 E-W STREET: Santa Ana Blvd PROJECT# 07-1213-005
 DATE: 7/24/2007 DAY: TUESDAY

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL			
6:00 AM	2	10	0	0	1	2	0	0	0	1	126	0	142			
6:15 AM	5	6	0	0	2	0	0	0	3	166	1	183				
6:30 AM	15	4	0	0	8	0	0	0	5	207	1	240				
6:45 AM	9	9	0	0	4	1	0	0	1	212	0	236				
7:00 AM	8	4	0	0	7	1	0	0	3	186	5	214				
7:15 AM	12	2	0	0	5	0	0	0	3	178	4	204				
7:30 AM	14	8	0	0	4	0	0	0	3	159	3	191				
7:45 AM	18	6	0	0	5	1	0	0	4	165	3	202				
8:00 AM																
8:15 AM																
8:30 AM																
8:45 AM																
9:00 AM																
9:15 AM																
9:30 AM																
9:45 AM																
10:00 AM																
10:15 AM																
10:30 AM																
10:45 AM																
11:00 AM																
11:15 AM																
11:45 AM																
TOTAL VOLUMES =	83	49	0	0	36	5	0	0	0	23	1399	17	1612			

AM Peak Hr Begins at: 7:30 AM

PEAK VOLUMES =	44	19	0	0	24	2	0	0	0	12	783	10	894
PEAK HR. FACTOR:	0.829												
CONTROL:	2-way stop r/s												

Intersection Turning Movement

National Data & Surveying Services

Prepared by:

N-S STREET: French St LOCATION: City of Santa Ana
 E-W STREET: Santa Ana Blvd PROJECT# 07-1213-005
 DATE: 7/24/2007 DAY: TUESDAY

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL			
1:00 PM	16	16	0	0	10	2	0	0	0	9	136	3	192			
1:15 PM	23	21	0	0	11	0	0	0	0	3	128	1	187			
1:30 PM	32	11	0	0	11	2	0	0	0	6	149	1	212			
1:45 PM	18	17	0	0	4	0	0	0	0	6	119	3	167			
2:00 PM	16	13	0	0	7	2	0	0	0	3	160	1	202			
2:15 PM	17	19	0	0	9	1	0	0	0	6	137	1	190			
2:30 PM	13	27	0	0	12	0	0	0	0	3	138	1	194			
2:45 PM	14	15	0	0	8	1	0	0	0	0	123	3	164			
3:00 PM																
3:15 PM																
3:30 PM																
3:45 PM																
4:00 PM																
4:15 PM																
4:30 PM																
4:45 PM																
5:00 PM																
5:15 PM																
5:30 PM																
5:45 PM																
6:00 PM																
6:15 PM																
6:30 PM																
6:45 PM																
TOTAL VOLUMES =	149	139	0	0	72	8	0	0	0	36	1090	14	1508			

PM Peak Hr Begins at: 4:30 PM

PEAK VOLUMES =	83	60	0	0	31	5	0	0	0	21	565	6	771
PEAK HR. FACTOR:	0.831												
CONTROL:	2-way stop r/s												

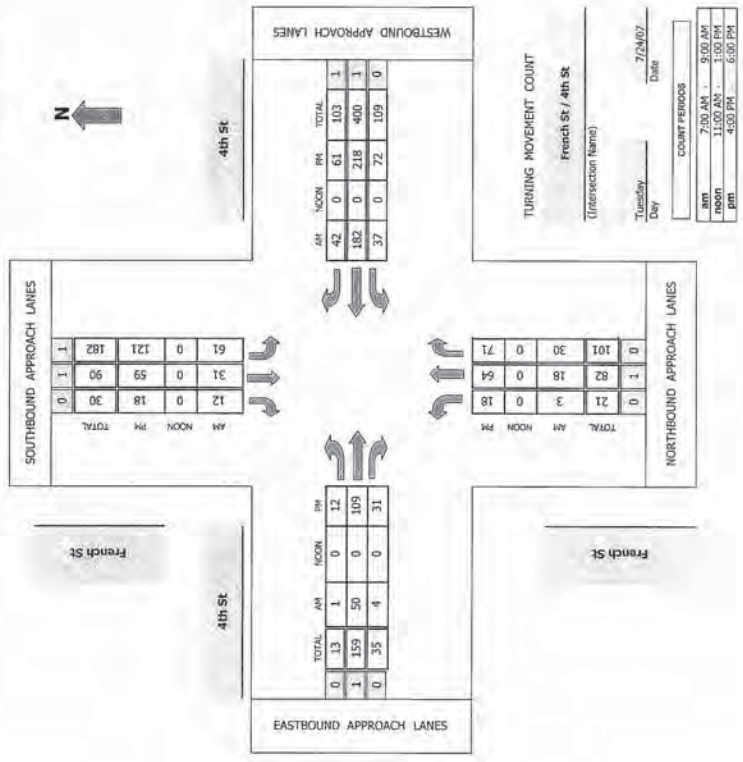
Intersection Turning Movement

Prepared by:
National Data & Surveying Services

Project #: 07-1213-007

TMC Summary of French St/4th St

Project #: 07-1213-007



Intersection Turning Movement

Prepared by:
National Data & Surveying Services

N-S STREET: French St
E-W STREET: 4th St
DATE: 7/24/2007
DAY: TUESDAY
LOCATION: City of Santa Ana
PROJECT#: 07-1213-007

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
6:00 AM	0	1	0	1	1	0	0	1	0	0	0	1	1
6:15 AM	0	1	0	7	2	2	2	7	1	6	23	11	73
6:30 AM	0	1	9	20	8	0	0	10	1	4	31	5	89
6:45 AM	0	7	12	21	9	1	0	16	2	9	37	11	125
7:00 AM	0	7	12	16	7	4	1	20	0	6	59	8	140
7:15 AM	0	1	3	15	7	4	0	1	12	4	12	42	11
7:30 AM	0	1	3	9	8	3	0	10	1	10	44	12	106
7:45 AM	0	1	6	5	7	6	2	7	2	7	50	13	106
8:00 AM	1	6	5	7	6	4	2	14	1	5	42	17	114
8:15 AM	4	5	5	9	6	4	2	14	1	5	42	17	114
8:30 AM													
8:45 AM													
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	8	31	60	104	53	20	5	88	9	59	328	88	853

AM Peak Hr Begins at: 7:30 AM

PEAK VOLUMES =	3	18	30	61	31	12	1	50	4	37	182	42	471
PEAK HR. FACTOR:													
	0.671												
CONTROL:	Signalized												
	0.839												
	0.655												
	0.894												

Intersection Turning Movement National Data & Surveying Services

Prepared by:

N-S STREET: French St DATE: 7/24/2007 LOCATION: City of Santa Ana
 E-W STREET: 4th St DAY: TUESDAY PROJECT# 07-1213-007

LAMES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	WT	WR	TOTAL	
1:00 PM	0	1	0	1	1	0	0	0	1	0	0	0	1	1	1	

1:15 PM	5	10	12	13	11	5	4	21	8	19	38	16	162
1:30 PM	4	16	11	29	13	8	2	30	7	21	47	13	201
1:45 PM	2	6	16	18	14	7	3	33	21	18	48	34	220
2:00 PM	2	8	19	37	21	4	3	22	8	12	45	19	200
2:15 PM	4	10	24	38	17	4	3	31	10	13	58	14	226
2:30 PM	1	18	16	33	13	5	2	26	5	14	41	10	184
2:45 PM	5	21	15	25	18	4	4	32	8	26	61	20	239
3:00 PM	8	15	16	25	11	5	3	20	8	19	58	17	205
3:15 PM													
3:30 PM													
3:45 PM													
4:00 PM													
4:15 PM													
4:30 PM													
4:45 PM													
5:00 PM													
5:15 PM													
5:30 PM													
5:45 PM													
6:00 PM													
6:15 PM													
6:30 PM													
6:45 PM													

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	31	104	129	218	118	42	24	215	75	142	386	143	1637

PM Peak Hr Begins at: 5:00 PM

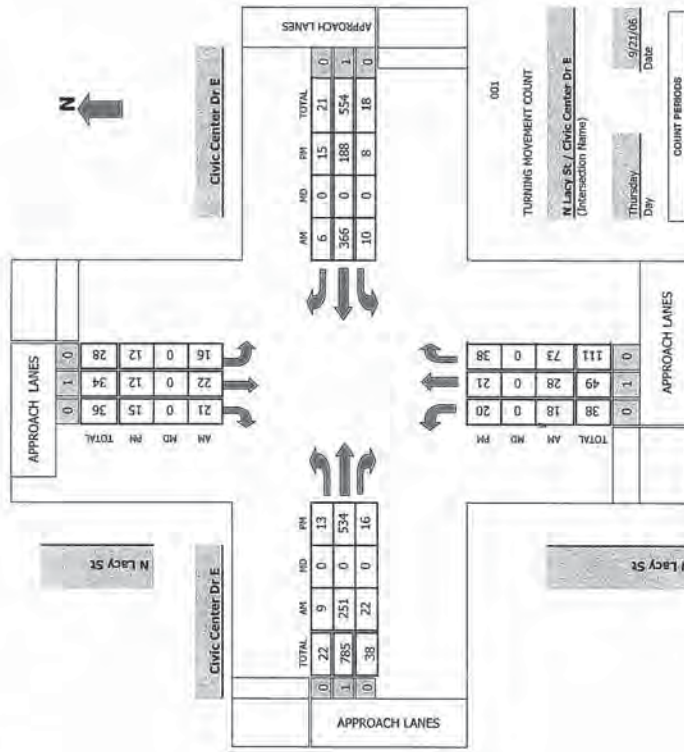
PEAK VOLUMES =	18	64	71	121	59	18	12	109	31	72	218	61	854
PEAK HR. FACTOR:					0.839			0.864		0.820			0.893

CONTROL: Signalized

(29)

TMC Summary of N Lacy St / Civic Center Dr E

Project #: 06-1211-029



TURNING MOVEMENT COUNT

N Lacy St / Civic Center Dr E
(Intersection Name)

Thursday
Date: 9/21/06

COUNT PERIOD	
am	7:00 AM - 9:00 AM
noon	11:00 AM - 1:00 PM
pm	4:00 PM - 6:00 PM

AM PEAK HOUR: 7:30 AM
 NOON PEAK HOUR: 0 AM
 PM PEAK HOUR: 4:30 PM

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: N Lacy St DATE: 9/21/2006 LOCATION: City of Santa Ana
 E-W STREET: Civic Center Dr E DAY: THURSDAY PROJECT# 06-1211-029

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR	
6:00 AM	2	3	3	3	0	5	1	3	55	9	1	46	2	130			
6:15 AM	4	4	3	0	2	3	0	4	41	4	2	47	2	112			
6:30 AM	9	9	10	0	11	8	2	48	5	4	66	3	175				
6:45 AM	2	5	11	1	7	5	3	55	5	3	99	2	198				
7:00 AM	4	11	41	12	3	8	3	86	9	1	103	0	281				
7:15 AM	3	3	11	3	1	0	1	62	3	2	98	1	188				
7:30 AM	1	5	11	2	4	0	0	40	3	2	50	2	120				
7:45 AM	5	8	10	2	6	1	0	37	3	0	50	2	124				
8:00 AM																	
8:15 AM																	
8:30 AM																	
8:45 AM																	
9:00 AM																	
9:15 AM																	
9:30 AM																	
9:45 AM																	
10:00 AM																	
10:15 AM																	
10:30 AM																	
10:45 AM																	
11:00 AM																	
11:15 AM																	
11:30 AM																	
11:45 AM																	
TOTAL VOLUMES =	30	48	100	12	20	39	26	12	424	41	15	559	14	1328			

AM Peak Hr Begins at: 730 AM

PEAK VOLUMES =	18	28	73	16	22	21	9	251	22	10	366	6	842
PEAK HR. FACTOR:	0.531			0.641			0.719			0.918			0.749
CONTROL:	2-Way Stop N & S												

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: N Lacy St DATE: 9/21/2006 LOCATION: City of Santa Ana
 E-W STREET: Civic Center Dr E DAY: THURSDAY PROJECT# 06-1211-029

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR	
1:00 PM	1	6	3	3	1	2	3	2	76	1	1	46	1	143			
1:15 PM	2	4	6	2	1	2	1	79	0	0	35	2	134				
1:30 PM	3	6	9	1	3	3	1	101	4	2	53	4	190				
1:45 PM	5	7	12	3	4	4	4	106	6	1	46	3	201				
2:00 PM	8	3	9	5	3	6	5	180	3	3	39	5	289				
2:15 PM	4	5	8	3	2	2	3	147	3	2	50	3	232				
2:30 PM	1	7	9	2	1	0	2	90	2	1	45	1	161				
2:45 PM	2	4	6	1	2	1	1	72	2	0	43	0	134				
3:00 PM																	
3:15 PM																	
3:30 PM																	
3:45 PM																	
4:00 PM																	
4:15 PM																	
4:30 PM																	
4:45 PM																	
5:00 PM																	
5:15 PM																	
5:30 PM																	
5:45 PM																	
6:00 PM																	
6:15 PM																	
6:30 PM																	
6:45 PM																	
TOTAL VOLUMES =	26	42	62	18	18	18	21	19	851	21	10	357	19	1464			

PM Peak Hr Begins at: 430 PM

PEAK VOLUMES =	20	21	38	12	12	15	13	534	16	8	188	15	892
PEAK HR. FACTOR:	0.823			0.696			0.749			0.894			0.829
CONTROL:	2-Way Stop N & S												

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Lacy St. DATE: 10/22/2003 LOCATION: City of Santa Ana
 E-W STREET: Santa Ana Blvd. DAY: WEDNESDAY PROJECT# 03-1564-002

30

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TL	TR	TL	TR
6:00 AM	1	5	6	4	7	0	2	60	3	2	117	4	211			
6:15 AM	0	7	8	3	12	2	3	77	0	3	157	6	278			
6:30 AM	0	6	10	3	11	6	3	92	1	2	154	4	292			
6:45 AM	1	7	4	2	3	4	2	98	1	4	170	11	307			
7:00 AM	2	6	0	2	6	4	1	65	3	1	190	10	290			
7:15 AM	2	2	1	4	3	0	1	56	0	2	164	2	237			
7:30 AM	0	3	1	2	4	1	1	48	0	3	149	1	213			
7:45 AM	1	4	2	1	5	1	2	49	0	2	140	2	209			
8:00 AM																
8:15 AM																
8:30 AM																
8:45 AM																
9:00 AM																
9:15 AM																
9:30 AM																
9:45 AM																
10:00 AM																
10:15 AM																
10:30 AM																
10:45 AM																
11:00 AM																
11:15 AM																
11:30 AM																
11:45 AM																
TOTAL VOLUMES =	7	40	32	21	51	18	15	545	8	19	1241	40	2037			

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES = 3 26 22 10 32 16 9 332 5 10 671 31 1167

PEAK HR. FACTOR: 0.797 0.725 0.856 0.886

CONTROL: Signalized

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Lacy St. DATE: 10/22/2003 LOCATION: City of Santa Ana
 E-W STREET: Santa Ana Blvd. DAY: WEDNESDAY PROJECT# 03-1564-002

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TL	TR	TL	TR
1:00 PM																
1:15 PM																
1:30 PM																
1:45 PM																
2:00 PM																
2:15 PM																
2:30 PM																
2:45 PM																
3:00 PM																
3:15 PM																
3:30 PM																
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4:00 PM																
4:15 PM																
4:30 PM																
4:45 PM																
5:00 PM																
5:15 PM																
5:30 PM																
5:45 PM																
6:00 PM																
6:15 PM																
6:30 PM																
6:45 PM																
TOTAL VOLUMES =	16	66	26	35	47	26	10	979	9	33	1028	36	2309			

PM Peak Hr Begins at: 4:45 PM

PEAK VOLUMES = 12 37 13 19 16 13 3 568 5 20 580 18 1304

PEAK HR. FACTOR: 0.646 0.750 0.762 0.925

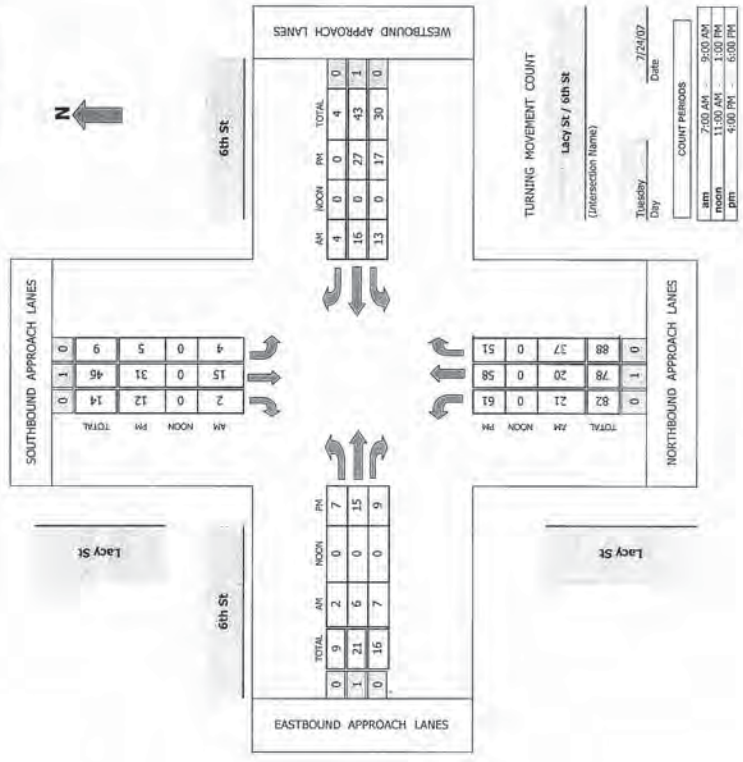
CONTROL: Signalized

Intersection Turning Movement
Prepared by:
National Data & Surveying Services

(31)

TMC Summary of Lacy St/6th St

Project #: 07-1213-009



Intersection Turning Movement
Prepared by:
National Data & Surveying Services

N-S STREET: Lacy St
E-W STREET: 6th St
DATE: 7/24/2007
DAY: TUESDAY
LOCATION: City of Santa Ana
PROJECT#: 07-1213-009

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			TOTAL
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
6:00 AM	0	1	0	0	1	0	0	0	1	0	0	1	20
6:15 AM	0	1	0	0	1	0	0	0	1	0	0	1	20
6:30 AM	0	1	0	0	1	0	0	0	1	0	0	1	20
6:45 AM	0	1	0	0	1	0	0	0	1	0	0	1	20
7:00 AM	1	5	5	0	4	1	0	0	1	1	1	1	25
7:15 AM	4	3	4	1	2	1	0	2	2	3	3	3	33
7:30 AM	5	2	3	2	1	2	2	7	2	1	5	1	33
7:45 AM	5	6	12	2	7	1	2	4	2	7	6	2	56
8:00 AM	6	5	8	2	1	0	0	1	0	3	3	1	29
8:15 AM	6	5	7	0	5	1	0	0	2	0	3	0	29
8:30 AM	5	4	10	0	2	0	0	1	3	3	4	1	33
8:45 AM	7	5	6	0	5	0	1	3	0	0	3	0	30
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES =	38	35	55	7	27	6	5	18	12	18	28	6	255

AM Peak Hr Begins at: 7:45 AM

PEAK VOLUMES = 21 20 37 4 15 2 2 6 7 13 16 4 147

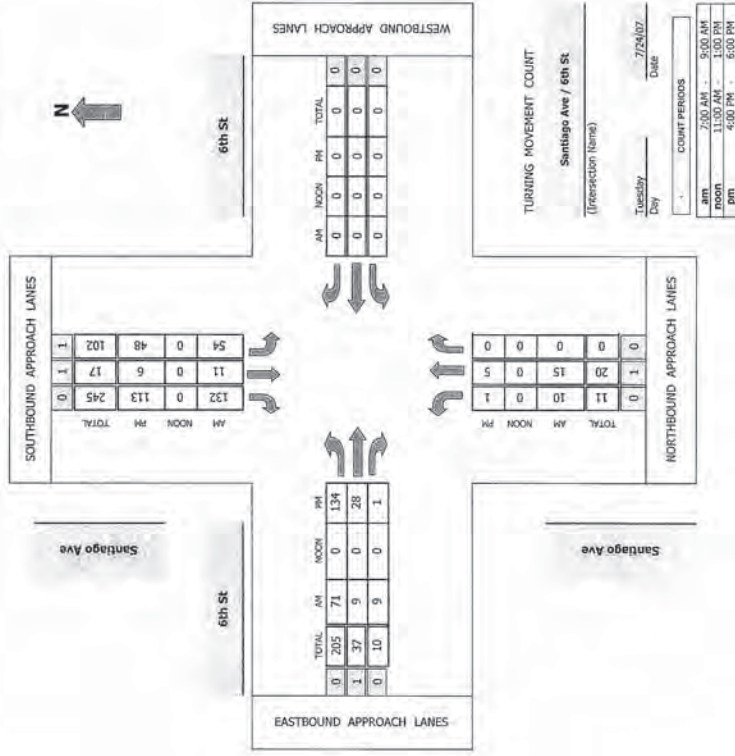
PEAK HR. FACTOR: 0.848 0.525 0.469 0.550 0.656

CONTROL: 4-Way Stop

Intersection Turning Movement
Prepared by:
National Data & Surveying Services

TMC Summary of Santiago Ave/6th St

Project #: 07-1213-010



Intersection Turning Movement
Prepared by:
National Data & Surveying Services

N-S STREET: Lacy St DATE: 7/24/2007 LOCATION: City of Santa Ana
E-W STREET: 6th St DAY: TUESDAY PROJECT#: 07-1213-009

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	ET	EL	ET	WL	WT	WR	TL
1:00 PM	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0
1:15 PM																
1:30 PM																
1:45 PM																
2:00 PM																
2:15 PM																
2:30 PM																
2:45 PM																
3:00 PM																
3:15 PM																
3:30 PM																
3:45 PM																
4:00 PM	4	12	13	1	0	2	2	1	2	1	2	4	1	0	0	42
4:15 PM	9	18	19	0	3	1	2	2	3	3	3	3	0	0	0	63
4:30 PM	21	15	8	1	5	5	1	2	6	6	3	6	0	0	0	73
4:45 PM	7	12	18	0	11	4	0	6	0	3	5	0	0	0	0	66
5:00 PM	14	16	16	2	9	2	3	4	0	4	4	0	0	0	0	74
5:15 PM	19	15	9	2	6	1	3	3	7	12	0	0	0	0	0	80
5:30 PM	21	7	8	0	7	2	2	5	3	9	5	3	7	2	0	72
5:45 PM	7	11	9	2	8	0	1	1	1	2	3	1	0	0	0	46
6:00 PM																
6:15 PM																
6:30 PM																
6:45 PM																

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	ET	EL	ET	WL	WT	WR	TL
	102	106	100	8	49	17	14	24	18	24	14	24	35	39	4	516

PM Peak Hr Begins at: 4:30 PM

PEAK VOLUMES =	61	58	51	5	31	12	7	15	9	17	27	0	293
PEAK HR. FACTOR:				0.800				0.861				0.579	0.916

CONTROL: 4-Way Stop

Intersection Turning Movement

National Data & Surveying Services

Prepared by:

N-S STREET: Santiago Ave DATE: 7/24/2007 LOCATION: City of Santa Ana
 E-W STREET: 6th St DAY: TUESDAY PROJECT# 07-1213-010

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR
6:00 AM																
6:15 AM																
6:30 AM																
6:45 AM																
7:00 AM	1	1	0	0	18	2	17	13	0	6	0	0	0	0	0	58
7:15 AM	5	4	0	0	17	4	32	19	1	3	0	0	0	0	0	85
7:30 AM	2	4	0	0	12	3	38	13	3	2	0	0	0	0	0	77
7:45 AM	2	4	0	0	16	2	34	24	3	2	0	0	0	0	0	87
8:00 AM	1	3	0	0	9	2	28	15	2	2	0	0	0	0	0	57
8:15 AM	0	0	0	0	7	3	29	14	1	3	0	0	0	0	0	57
8:30 AM	4	5	0	0	12	6	19	12	2	0	1	0	0	0	0	61
8:45 AM	4	5	0	0	8	1	22	21	3	2	0	0	0	0	0	66
9:00 AM																
9:15 AM																
9:30 AM																
9:45 AM																
10:00 AM																
10:15 AM																
10:30 AM																
10:45 AM																
11:00 AM																
11:15 AM																
11:30 AM																
11:45 AM																

TOTAL VOLUMES =	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR	TOTAL
	19	26	0	0	99	23	219	131	131	15	20	1	1	0	0	0	553

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES =	10	15	0	0	54	11	132	71	71	9	9	0	0	0	0	0	311
PEAK HR. FACTOR:				0.694				0.929				0.767				0.000	0.894
CONTROL:	1-Way Stop E																

Intersection Turning Movement

National Data & Surveying Services

Prepared by:

N-S STREET: Santiago Ave DATE: 7/24/2007 LOCATION: City of Santa Ana
 E-W STREET: 6th St DAY: TUESDAY PROJECT# 07-1213-010

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR
1:00 PM																
1:15 PM																
1:30 PM																
1:45 PM																
2:00 PM																
2:15 PM																
2:30 PM																
2:45 PM																
3:00 PM																
3:15 PM																
3:30 PM																
3:45 PM																
4:00 PM	0	1	0	0	11	1	27	27	6	0	0	0	0	0	0	73
4:15 PM	0	3	0	0	5	1	33	22	7	0	0	0	0	0	0	71
4:30 PM	1	0	0	0	5	1	27	30	6	1	1	0	0	0	0	71
4:45 PM	1	1	0	0	21	1	37	26	7	1	1	0	0	0	0	95
5:00 PM	0	2	0	0	8	1	25	23	8	0	0	0	0	0	0	67
5:15 PM	0	0	0	0	11	2	31	37	8	0	0	0	0	0	0	89
5:30 PM	0	2	0	0	8	2	20	48	5	0	0	0	0	0	0	85
5:45 PM	1	1	0	0	5	1	18	15	1	1	1	0	0	0	0	43
6:00 PM																
6:15 PM																
6:30 PM																
6:45 PM																

TOTAL VOLUMES =	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR	TOTAL
	3	10	0	0	74	10	218	134	228	48	3	3	0	0	0	0	594

PM Peak Hr Begins at: 4:45 PM

PEAK VOLUMES =	1	5	0	0	48	6	113	134	134	28	1	1	0	0	0	0	336
PEAK HR. FACTOR:				0.750				0.708				0.769				0.000	0.884
CONTROL:	1-Way Stop E																

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: LACY ST. DATE: 6/20/2006 LOCATION: City of Santa Ana
 E-W STREET: FOURTH ST. DAY: TUESDAY PROJECT# 06-1192-044

LANES:	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND				
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL							
6:00 AM	3	0	6	7	2	0	2	32	3	11	70	9	159							
6:15 AM	0	15	17	12	1	2	1	47	6	14	86	6	207							
6:30 AM	3	17	28	11	7	1	0	61	9	16	66	15	234							
6:45 AM	3	21	23	7	7	0	1	72	6	11	108	15	274							
7:00 AM	3	15	29	7	9	4	0	43	4	17	96	7	234							
7:15 AM	8	7	25	2	0	3	2	49	2	14	101	12	219							
7:30 AM	5	5	11	5	4	3	3	33	2	18	89	12	190							
7:45 AM	5	5	19	5	1	2	0	33	1	11	56	8	146							
8:00 AM																				
8:15 AM																				
8:30 AM																				
8:45 AM																				
9:00 AM																				
9:15 AM																				
9:30 AM																				
9:45 AM																				
10:00 AM																				
10:15 AM																				
10:30 AM																				
10:45 AM																				
11:00 AM																				
11:15 AM																				
11:30 AM																				
11:45 AM																				

TOTAL VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	24	91	166	56	31	15	9	370	33	112	672	84	1663

AM Peak Hr Begins at: 7:30 AM

PEAK VOLUMES =	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	11	60	105	27	23	8	3	225	21	58	371	49	961

PEAK HR. FACTOR: 0.917

CONTROL: 0.725

0.788

0.892

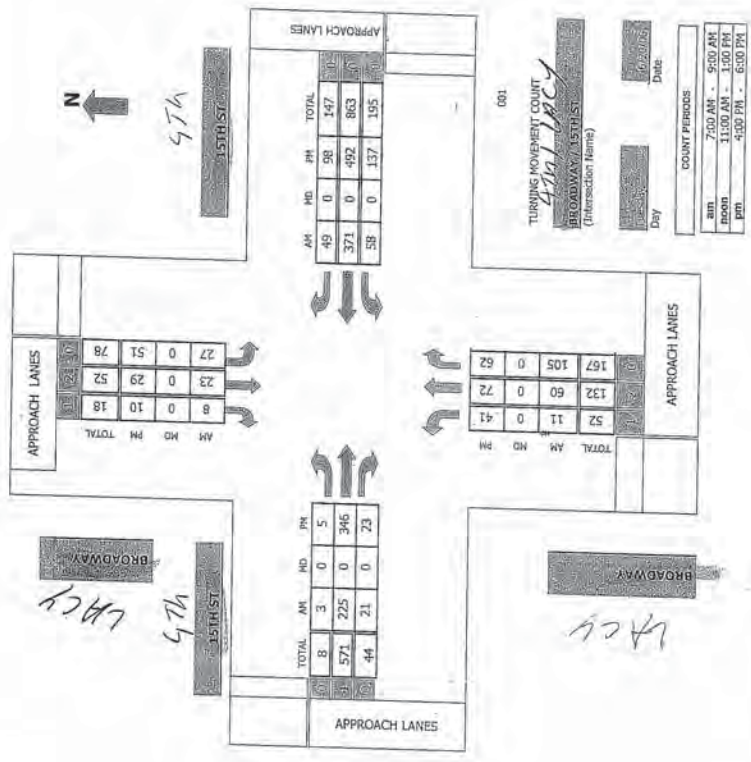
0.877

28

(32)

TMC Summary of BROADWAY/15TH ST LACY / 47th

Project #: 06-1192-001

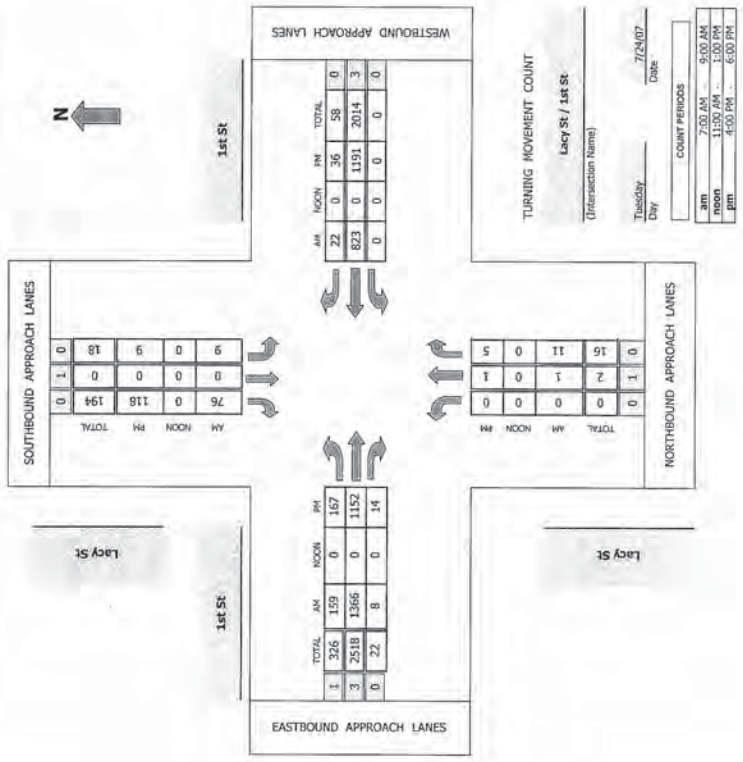


Intersection Turning Movement
 Prepared by: National Data & Surveying Services

33

Project #: 07-1213-008

TMC Summary of Lacy St/1st St



Intersection Turning Movement
 Prepared by: Southland Car Counters

N-S STREET: LACY ST. DATE: 6/20/2006 LOCATION: City of Santa Ana
 E-W STREET: FOURTH ST. DAY: TUESDAY PROJECT# 06-1192-044

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR	TOTAL
1:00 PM	10	15	16	16	16	5	0	0	1	66	9	27	123	25	314		
1:15 PM	17	21	9	13	5	5	5	2	71	4	4	36	106	12	301		
1:30 PM	9	26	11	7	7	2	2	3	88	4	4	48	132	27	364		
1:45 PM	8	15	12	11	3	0	0	0	85	6	41	113	21	317			
2:00 PM	11	12	20	17	7	2	2	2	101	4	27	122	23	348			
2:15 PM	13	19	19	16	12	4	0	72	9	21	125	27	337				
2:30 PM	15	21	17	20	6	3	3	1	73	10	27	115	23	331			
2:45 PM	7	21	8	9	4	2	2	2	61	8	18	128	16	284			
3:00 PM																	
3:15 PM																	
3:30 PM																	
3:45 PM																	
4:00 PM																	
4:15 PM																	
4:30 PM																	
4:45 PM																	
5:00 PM																	
5:15 PM																	
5:30 PM																	
5:45 PM																	
6:00 PM																	
6:15 PM																	
6:30 PM																	
6:45 PM																	

TOTAL VOLUMES =	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	WL	WT	WR	TOTAL
	90	150	112	109	109	49	20	11	617	54	245	964	175	2596	

PM Peak Hr Begins at: 4:30 PM

PEAK VOLUMES =	41	72	62	51	29	10	5	346	23	137	492	98	1366
PEAK HR. FACTOR:	0.858		0.703		0.874		0.878		0.938				

CONTROL:

Intersection Turning Movement

Prepared by:
National Data & Surveying Services

N-S STREET: Lacy St DATE: 7/24/2007 LOCATION: City of Santa Ana
 E-W STREET: 1st St DAY: TUESDAY PROJECT# 07-1213-008

LANES:	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND				
	NL	NT	NR	SL	ST	SR	ST	SL	NR	NT	EL	ET	ER	WL	WT	WR	WL	WT	WR	TOTAL
1:00 PM	0	1	0	0	1	0	1	0	1	27	42	249	0	298	12	630				
1:15 PM	0	1	0	0	0	0	0	0	0	38	35	295	0	307	1	679				
1:30 PM	0	1	0	0	0	0	0	0	0	30	35	307	2	277	8	665				
1:45 PM	0	1	0	0	0	0	0	0	0	29	37	289	2	295	11	666				
2:00 PM	0	1	0	0	0	0	0	0	0	26	43	259	1	319	4	657				
2:15 PM	0	1	0	0	0	0	0	0	0	37	41	303	4	291	12	692				
2:30 PM	0	1	0	0	0	0	0	0	0	22	42	299	5	298	7	675				
2:45 PM	0	1	0	0	0	0	0	0	0	33	41	291	4	283	13	669				
3:00 PM	0	1	0	0	0	0	0	0	0											
3:15 PM	0	1	0	0	0	0	0	0	0											
3:30 PM	0	1	0	0	0	0	0	0	0											
3:45 PM	0	1	0	0	0	0	0	0	0											
4:00 PM	0	1	0	0	0	0	0	0	0											
4:15 PM	0	1	0	0	0	0	0	0	0											
4:30 PM	0	1	0	0	0	0	0	0	0											
4:45 PM	0	1	0	0	0	0	0	0	0											
5:00 PM	0	1	0	0	0	0	0	0	0											
5:15 PM	0	1	0	0	0	0	0	0	0											
5:30 PM	0	1	0	0	0	0	0	0	0											
5:45 PM	0	1	0	0	0	0	0	0	0											
6:00 PM	0	1	0	0	0	0	0	0	0											
6:15 PM	0	1	0	0	0	0	0	0	0											
6:30 PM	0	1	0	0	0	0	0	0	0											
6:45 PM	0	1	0	0	0	0	0	0	0											
TOTAL VOLUMES =	0	1	9	18	1	242	316	2392	18	0	2368	68	5333							

PM Peak Hr Begins at: 5:00 PM

PEAK VOLUMES = 0 1 5 9 0 118 167 1152 14 0 1191 36 2683

PEAK HR. FACTOR: 0.500 0.814 0.958 0.950 0.973

CONTROL: 1-Way Stop S

Intersection Turning Movement

Prepared by:
National Data & Surveying Services

N-S STREET: Lacy St DATE: 7/24/2007 LOCATION: City of Santa Ana
 E-W STREET: 1st St DAY: TUESDAY PROJECT# 07-1213-008

LANES:	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND				
	NL	NT	NR	SL	ST	SR	ST	SL	NR	NT	EL	ET	ER	WL	WT	WR	WL	WT	WR	TOTAL
6:00 AM	0	0	0	0	2	16	308	0	189	4	545									
6:15 AM	0	1	4	3	25	38	341	4	215	3	634									
6:30 AM	0	1	4	2	21	46	368	2	185	8	634									
6:45 AM	0	0	5	2	15	44	353	1	207	6	633									
7:00 AM	0	0	0	2	15	31	304	1	216	5	574									
7:15 AM	0	0	4	2	12	32	312	0	217	2	582									
7:30 AM	2	0	5	2	15	31	307	0	222	9	593									
7:45 AM	0	0	0	4	16	29	273	1	238	2	563									
8:00 AM	0	0	0	0	0	0	0	0	0	0	0									
8:15 AM	0	0	0	0	0	0	0	0	0	0	0									
8:30 AM	0	0	0	0	0	0	0	0	0	0	0									
8:45 AM	0	0	0	0	0	0	0	0	0	0	0									
9:00 AM	0	0	0	0	0	0	0	0	0	0	0									
9:15 AM	0	0	0	0	0	0	0	0	0	0	0									
9:30 AM	0	0	0	0	0	0	0	0	0	0	0									
9:45 AM	0	0	0	0	0	0	0	0	0	0	0									
10:00 AM	0	0	0	0	0	0	0	0	0	0	0									
10:15 AM	0	0	0	0	0	0	0	0	0	0	0									
10:30 AM	0	0	0	0	0	0	0	0	0	0	0									
10:45 AM	0	0	0	0	0	0	0	0	0	0	0									
11:00 AM	0	0	0	0	0	0	0	0	0	0	0									
11:15 AM	0	0	0	0	0	0	0	0	0	0	0									
11:30 AM	0	0	0	0	0	0	0	0	0	0	0									
11:45 AM	0	0	0	0	0	0	0	0	0	0	0									
TOTAL VOLUMES =	3	1	20	19	0	135	277	2566	9	0	1689	39	4758							

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES = 0 1 11 9 0 76 159 1366 8 0 823 22 2475

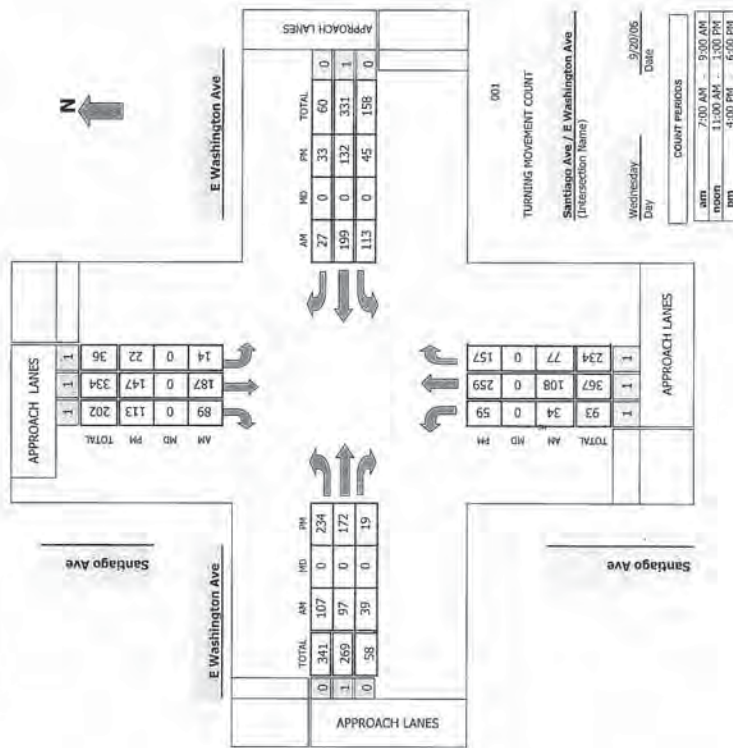
PEAK HR. FACTOR: 0.600 0.759 0.921 0.956 0.976

CONTROL: 1-Way Stop S

34

TMC Summary of Santiago Ave / E Washington Ave

Project #: 06-1211-015



Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Santiago Ave DATE: 9/20/2006 LOCATION: City of Santa Ana
E-W STREET: E Washington Ave DAY: WEDNESDAY PROJECT#: 06-1211-015

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
6:00 AM	1	1	1	1	1	1	0	1	0	0	0	1	0
6:15 AM													
6:30 AM													
6:45 AM													
7:00 AM	3	14	8	1	28	24	18	17	20	14	28	7	182
7:15 AM	8	23	15	6	48	28	43	31	6	24	51	11	294
7:30 AM	13	33	32	2	53	32	25	24	20	39	67	9	349
7:45 AM	7	20	18	3	35	11	13	19	11	26	33	2	198
8:00 AM	6	32	12	3	51	18	26	23	2	24	48	5	250
8:15 AM	4	26	14	2	29	13	18	22	8	22	28	3	189
8:30 AM	6	29	2	1	24	7	19	8	4	13	15	2	130
8:45 AM	2	14	6	2	24	13	9	11	3	9	21	5	119
9:00 AM													
9:15 AM													
9:30 AM													
9:45 AM													
10:00 AM													
10:15 AM													
10:30 AM													
10:45 AM													
11:00 AM													
11:15 AM													
11:30 AM													
11:45 AM													
TOTAL VOLUMES =	49	191	107	20	292	146	171	155	74	171	291	44	1711

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES =	34	108	77	14	187	89	107	97	39	113	199	27	1091
PEAK HR FACTOR:	0.702			0.833			0.759			0.737			0.782
CONTROL:	4-Way Stop												



Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Santiago Ave
 E-W STREET: E Washington Ave
 DATE: 9/20/2006
 DAY: WEDNESDAY
 LOCATION: City of Santa Ana
 PROJECT#: 06-1211-015

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL			
1:00 PM	1	1	1	1	1	1	0	1	0	0	1	0				
1:15 PM																
1:30 PM																
1:45 PM																
2:00 PM																
2:15 PM																
2:30 PM																
2:45 PM																
3:00 PM																
3:15 PM																
3:30 PM																
3:45 PM																
4:00 PM	12	34	32	6	35	25	35	7	18	22	10	271				
4:15 PM	6	47	26	3	36	23	48	30	10	19	26	281				
4:30 PM	9	68	35	8	41	25	63	33	7	10	31	333				
4:45 PM	23	46	39	7	34	28	48	43	2	11	39	328				
5:00 PM	11	85	39	3	44	29	63	34	6	10	33	367				
5:15 PM	16	60	44	4	28	31	60	62	4	14	29	364				
5:30 PM	18	54	43	7	28	14	48	38	5	18	28	308				
5:45 PM	19	48	37	6	30	16	43	34	6	14	31	292				
6:00 PM																
6:15 PM																
6:30 PM																
6:45 PM																

TOTAL VOLUMES =	114	442	295	44	276	191	408	309	47	114	239	65	2544
PEAK VOLUMES =	59	259	157	22	147	113	234	172	19	45	132	33	1392
PEAK HR. FACTOR:	0.880			0.928			0.843				0.905		0.948
CONTROL:	4-Way Stop												

PM Peak Hr Begins at: 4:30 PM

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Santiago Ave.
 E-W STREET: Civic Center
 DATE: 1/7/2003
 DAY: TUESDAY
 LOCATION: City of Santa Ana
 PROJECT#: 03-0054-014 A

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL			
6:00 AM	1	1	0	1	1	0	0	1	0	0	1	0				
6:15 AM																
6:30 AM																
6:45 AM																
7:00 AM	43	30	3	1	35	20	14	4	31	5	13	0	199			
7:15 AM	40	33	4	2	38	28	26	9	37	8	19	1	245			
7:30 AM	52	35	2	1	49	25	38	15	46	10	11	2	286			
7:45 AM	55	28	3	0	64	20	23	7	28	11	12	1	252			
8:00 AM	96	39	4	4	71	38	32	13	56	9	20	2	384			
8:15 AM	61	23	2	3	47	22	18	8	49	6	10	3	253			
8:30 AM	39	21	1	2	33	24	15	8	35	8	14	2	202			
8:45 AM	48	27	3	1	42	13	9	12	30	6	10	1	202			
9:00 AM																
9:15 AM																
9:30 AM																
9:45 AM																
10:00 AM																
10:15 AM																
10:30 AM																
10:45 AM																
11:00 AM																
11:15 AM																
11:30 AM																
11:45 AM																

TOTAL VOLUMES =	434	236	22	14	379	190	175	77	312	63	109	12	2023
AM Peak Hr Begins at:	7:30 AM												
PEAK VOLUMES =	264	125	11	8	231	105	111	44	179	36	53	8	1175
CONTROL:	4-Way Stop												

35

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Santiago Ave. DATE: 1/7/2003 LOCATION: City of Santa Ana
E-W STREET: Civic Center DAY: TUESDAY PROJECT# 03-0054-01.4 P

LANES:	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND				
	NL	NT	NR	SL	ST	SR	ST	SL	SL	SL	EL	ET	ER	WL	WT	WR	WT	WR	TOTAL	
1:00 PM																				
1:15 PM																				
1:30 PM																				
1:45 PM																				
2:00 PM																				
2:15 PM																				
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5:45 PM																				
6:00 PM																				
6:15 PM																				
6:30 PM																				
6:45 PM																				
TOTAL	NL	NT	NR	SL	ST	SR	ST	SL	SL	SL	EL	ET	ER	WL	WT	WR	WT	WR	TOTAL	
VOLUMES =	300	359	61	19	391	169	169	448	448	104	563	48	59	18	2538					

PM Peak Hr Begins at: 4:15 PM

PEAK VOLUMES = 167 215 31 14 211 95 256 51 313 29 31 12 1425

CONTROL: 4-Way Stop

36

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Santiago Ave. DATE: 1/7/2003 LOCATION: City of Santa Ana
E-W STREET: Santa Ana Blvd. DAY: TUESDAY PROJECT# 03-0054-015 A

LANES:	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND				
	NL	NT	NR	SL	ST	SR	ST	SL			EL	ET	ER	WL	WT <th>WR</th> <th>WT</th> <th>WR</th> <td></td> <td></td>	WR	WT	WR		
6:00 AM																				
6:15 AM																				
6:30 AM																				
6:45 AM																				
7:00 AM																				
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10:30 AM																				
10:45 AM																				
11:00 AM																				
11:15 AM																				
11:30 AM																				
11:45 AM																				
TOTAL	NL	NT	NR	SL	ST	SR	ST	SL	SL	SL	EL	ET	ER	WL	WT	WR	WT	WR	TOTAL	
VOLUMES =	42	97	112	366	224	157	157	224	224	366	52	622	50	219	1,499	546	546	546	3986	

AM Peak Hr Begins at: 7:00 AM

PEAK VOLUMES = 22 55 58 204 146 83 30 385 28 115 823 314 2263

CONTROL: Signalized

40

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Standard Ave DATE: 10/12/2005 LOCATION: City of Santa Ana
E-W STREET: 1st Ave DAY: WEDNESDAY PROJECT# H0509088

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR	TL	TL	TR	TR	TL
6:00 AM	14	19	21	5	48	2	2	299	34	8	153	1	606			
6:15 AM	13	43	31	11	45	0	15	379	27	10	208	3	785			
6:30 AM	21	47	24	17	78	1	19	340	45	21	218	4	835			
6:45 AM	19	48	29	4	73	3	39	260	22	20	211	1	729			
7:00 AM	14	24	25	5	51	2	9	307	33	12	216	3	701			
7:15 AM	15	19	21	4	29	1	10	324	17	17	182	7	646			
7:30 AM	20	30	20	6	30	6	7	303	19	10	188	3	642			
7:45 AM	21	25	29	6	16	5	5	289	17	11	182	3	609			
8:00 AM																
8:15 AM																
8:30 AM																
8:45 AM																
9:00 AM																
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10:45 AM																
11:00 AM																
11:15 AM																
11:30 AM																
11:45 AM																

TOTAL VOLUMES =	NL 137	NT 255	NR 200	SL 58	ST 370	SR 20	EL 106	ER 2501	WL 109	WT 1558	WR 25	TOTAL 5553
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AM Peak Hr Begins at: 715 AM

PEAK VOLUMES =	67	162	109	37	247	6	82	1286	127	63	853	11	3050
PEAK HR FACTOR:	0.880												
CONTROL:	0.888												
	0.954												
	0.913												

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Santiago Ave. DATE: 1/7/2003 LOCATION: City of Santa Ana
E-W STREET: Santa Ana Blvd. DAY: TUESDAY PROJECT# 03-0054-015 P

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ER	WL	WT	WR	TL	TL	TR	TR	TL
1:00 PM	6	17	22	53	34	21	11	169	10	33	198	59	633			
1:15 PM	3	19	15	61	29	15	14	141	6	29	166	43	541			
1:30 PM	5	23	19	74	31	19	13	148	7	23	147	48	557			
1:45 PM	8	21	14	68	37	28	16	167	10	35	159	77	640			
2:00 PM	11	26	17	76	53	26	19	195	13	31	172	91	730			
2:15 PM	7	20	20	70	55	27	15	153	13	20	129	54	583			
2:30 PM	6	22	18	87	31	17	8	162	11	21	132	52	567			
2:45 PM	4	13	16	66	24	12	9	127	8	26	85	36	426			
3:00 PM																
3:15 PM																
3:30 PM																
3:45 PM																
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6:15 PM																
6:30 PM																
6:45 PM																

TOTAL VOLUMES =	NL 50	NT 161	NR 141	SL 555	ST 294	SR 165	EL 105	ER 1262	WL 218	WT 1188	WR 460	TOTAL 4677
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PM Peak Hr Begins at: 445 PM

PEAK VOLUMES =	32	89	69	301	176	98	58	677	47	107	592	274	2520
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CONTROL: Signalized;

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Standard Ave
 E-W STREET: 1st Ave
 DATE: 10/12/2005
 DAY: WEDNESDAY
 LOCATION: City of Santa Ana
 PROJECT#: H0509088

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR	
1:00 PM	43	54	26	2	39	4	12	249	14	22	240	5	710				
1:15 PM	35	73	18	8	44	8	23	315	26	22	255	1	828				
1:30 PM	37	68	26	8	47	8	17	235	23	22	299	4	794				
1:45 PM	42	71	31	5	65	10	20	294	12	29	276	4	859				
2:00 PM	49	72	30	4	52	2	16	248	22	17	266	6	784				
2:15 PM	39	58	40	4	53	6	20	258	23	27	288	0	816				
2:30 PM	53	82	33	4	52	7	21	268	18	19	268	1	826				
2:45 PM	42	56	27	6	56	5	18	288	25	24	266	5	818				
3:00 PM																	
3:15 PM																	
3:30 PM																	
3:45 PM																	
4:00 PM																	
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5:45 PM																	
6:00 PM																	
6:15 PM																	
6:30 PM																	
6:45 PM																	

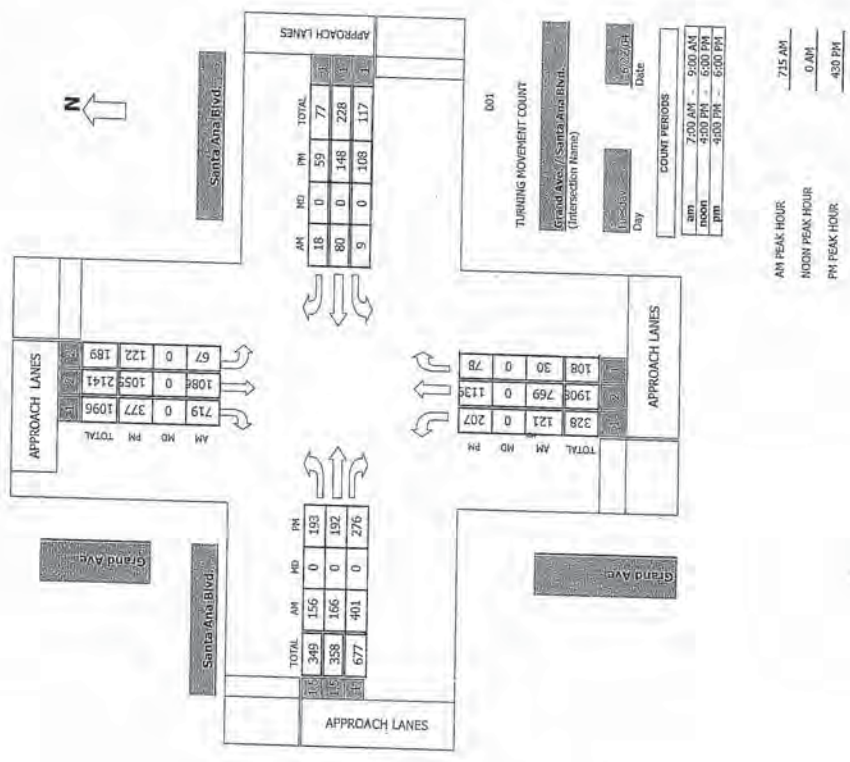
TOTAL VOLUMES =	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR	TOTAL
	340	534	231	41	408	50	147	2155	163	182	2158	26	6435				

PM Peak Hr Begins at: 4:45 PM

PEAK VOLUMES =	183	283	134	17	222	25	77	1068	75	92	1098	11	3285				
PEAK HR. FACTOR:													0.893	0.825	0.936	0.953	0.956

CONTROL:

42
 Not used. See counts
 TMC Summary of Grand Ave./Santa Ana Blvd.
 from One Broadway Plaza Exh. B1.
 Project #: 04-444-001



Count Period	AM	MD	PM	TOTAL
7:00 AM - 9:00 AM	108	30	0	138
9:00 AM - 1:00 PM	1908	769	0	2677
1:00 PM - 5:00 PM	328	121	0	449
5:00 PM - 6:00 PM	108	30	0	138

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Grand Ave. DATE: 6/24/2004 LOCATION: City of Santa Ana
 E-W STREET: Santa Ana Blvd. DAY: THURSDAY PROJECT# 04-1414-001

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR
6:00 AM	16	182	7	18	271	169	33	40	98	0	19	5	858			
6:15 AM	20	191	8	19	285	180	41	48	104	1	21	6	924			
6:30 AM	27	195	6	18	284	175	36	45	94	2	19	5	906			
6:45 AM	35	196	9	16	268	188	40	38	99	4	22	4	919			
7:00 AM	39	187	7	14	249	176	39	35	104	2	18	3	873			
7:15 AM	39	176	5	12	234	182	36	21	113	2	18	5	843			
7:30 AM	37	157	3	9	226	171	40	16	109	1	15	4	788			
7:45 AM	19	126	3	7	209	166	28	9	86	0	6	2	661			
8:00 AM																
8:15 AM																
8:30 AM																
8:45 AM																
9:00 AM																
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10:45 AM																
11:00 AM																
11:15 AM																
11:30 AM																
11:45 AM																
TOTAL VOLUMES =	232	1410	48	113	2026	1407	293	252	807	12	138	34	6772			

AM Peak Hr Begins at: 7:15 AM

PEAK VOLUMES =	121	769	30	67	1086	719	156	166	401	9	80	18	3622
PEAK HR. FACTOR:	0.958												
CONTROL:	Signalized												

Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Grand Ave. DATE: 6/24/2004 LOCATION: City of Santa Ana
 E-W STREET: Santa Ana Blvd. DAY: THURSDAY PROJECT# 04-1414-001

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	NR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR
1:00 PM	20	241	16	20	226	68	36	32	62	19	26	12	778			
1:15 PM	27	264	17	26	241	72	41	29	54	22	39	14	846			
1:30 PM	26	270	19	29	261	96	48	46	60	26	41	10	932			
1:45 PM	44	292	17	33	256	103	44	52	77	29	35	18	1000			
2:00 PM	97	290	22	31	266	96	49	45	62	26	32	15	1031			
2:15 PM	40	287	20	29	272	82	52	49	77	27	40	16	991			
2:30 PM	39	261	18	26	250	84	61	46	55	22	39	19	920			
2:45 PM	26	256	15	24	361	71	51	30	41	18	41	19	953			
3:00 PM																
3:15 PM																
3:30 PM																
3:45 PM																
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5:00 PM																
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5:30 PM																
5:45 PM																
6:00 PM																
6:15 PM																
6:30 PM																
6:45 PM																
TOTAL VOLUMES =	319	2161	144	218	2133	672	382	329	488	189	293	123	7451			

PM Peak Hr Begins at: 4:30 PM

PEAK VOLUMES =	207	1139	78	122	1055	377	193	192	276	108	148	59	3954
PEAK HR. FACTOR:	0.870												
CONTROL:	Signalized												

File Name: H0505126
Site Code: 00000916
Start Date: 5/18/2005
Page No: 2

Start Time	GRAND AVENUE Southbound			4TH STREET Westbound			GRAND AVENUE Northbound			4TH STREET Eastbound			Int. Total	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
7:00 AM	12	116	26	154	18	145	19	162	16	48	22	86	658	
7:05 AM	20	84	27	141	25	167	28	251	21	59	15	95	814	
7:10 AM	23	110	21	154	32	169	16	217	34	76	33	145	777	
7:15 AM	27	114	35	174	35	208	40	283	23	64	19	126	885	
Total	82	434	107	623	110	719	104	933	94	269	89	452	3150	
% App. Total	13.2	69.7	17.2	11.8	77.1	11.1	20.8	56.5	19.7	8.1	83.3	8.6	0.89	
PHF	0.759	0.935	0.811	0.895	0.766	0.864	0.65	0.824	0.681	0.801	0.674	0.779	0.775	0.859

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 07:00 AM

File Name: H0505126
Site Code: 00000916
Start Date: 5/18/2005
Page No: 1
City: SANTA ANA
N-S Direction: GRAND AVENUE
E-W Direction: 4TH STREET

43

Start Time	GRAND AVENUE Southbound			4TH STREET Westbound			GRAND AVENUE Northbound			4TH STREET Eastbound			Int. Total	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
8:00 AM	11	124	17	24	153	14	13	89	19	22	148	15	645	
8:05 AM	7	136	14	10	109	16	19	96	19	19	138	19	600	
8:10 AM	10	156	16	21	85	23	13	124	22	18	54	20	666	
8:15 AM	19	170	16	16	81	13	13	132	14	24	41	16	561	
Total	47	586	65	71	434	66	58	438	74	83	379	70	2373	
PHF	0.759	0.935	0.811	0.895	0.766	0.864	0.65	0.824	0.681	0.801	0.674	0.779	0.775	0.859

Start Time	GRAND AVENUE Southbound			4TH STREET Westbound			GRAND AVENUE Northbound			4TH STREET Eastbound			Int. Total	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
4:00 PM	26	185	25	24	145	45	13	235	25	19	85	43	671	
4:05 PM	26	182	15	29	195	40	18	227	20	21	88	30	660	
4:10 PM	22	203	28	27	151	43	17	257	38	19	121	35	960	
4:15 PM	24	160	24	37	197	49	17	239	32	19	115	36	871	
Total	100	730	90	117	698	177	56	958	124	77	409	147	3562	
PHF	0.759	0.935	0.811	0.895	0.766	0.864	0.65	0.824	0.681	0.801	0.674	0.779	0.775	0.859

Start Time	GRAND AVENUE Southbound			4TH STREET Westbound			GRAND AVENUE Northbound			4TH STREET Eastbound			Int. Total	
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left		
5:00 PM	17	194	21	39	143	40	6	288	24	22	128	36	975	
5:05 PM	16	170	26	28	170	60	6	249	51	19	129	49	976	
5:10 PM	30	190	33	24	128	39	7	243	30	19	93	30	864	
5:15 PM	31	193	32	21	171	40	12	213	25	11	94	49	892	
Total	94	747	112	111	610	169	32	853	130	71	442	169	3597	
PHF	0.759	0.935	0.811	0.895	0.766	0.864	0.65	0.824	0.681	0.801	0.674	0.779	0.775	0.859

Grand Total	Apprch %	100%
323	2497	374
10.1	78.2	11.7
2.5	18.4	2.9

*** BREAK ***

44
35

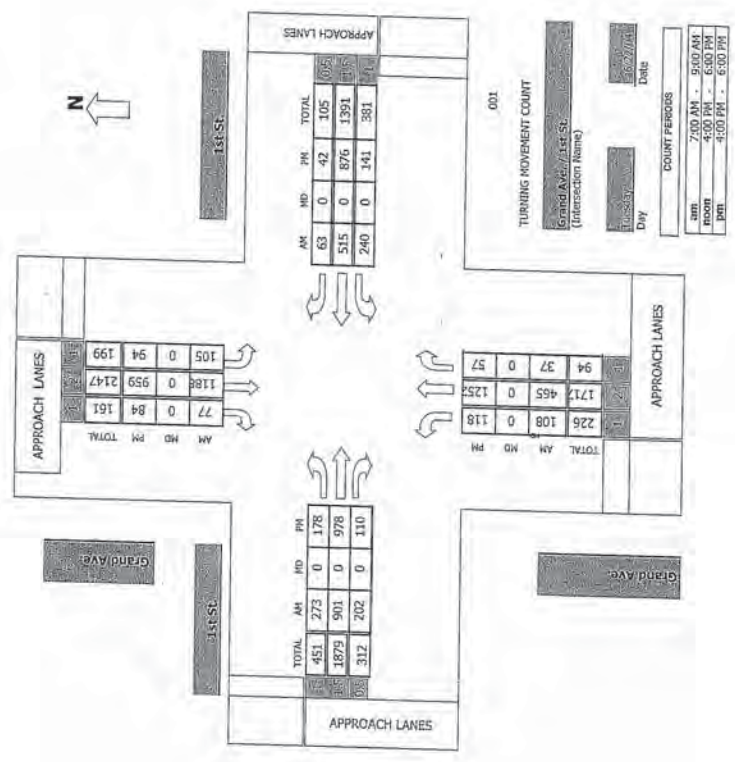
Transportation Studies, Inc
1350 Reynolds Avenue, Suite 115
Irvine, CA 92614

File Name: H0505126
Site Code: 00000916
Start Date: 5/18/2005
Page No: 3

Start Times	GRAND AVENUE Southbound			4TH STREET Westbound			GRAND AVENUE Northbound			4TH STREET Eastbound			InL Total			
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left				
4:30 PM	22	203	26	25	161	43	224	17	257	38	312	19	121	36	960	
5:00 PM	14	180	24	228	37	197	49	293	17	239	32	288	19	115	38	172
5:15 PM	16	170	26	212	28	143	48	229	6	298	24	328	22	126	38	186
Total Volume	79	747	97	923	130	661	202	993	47	1043	145	1235	79	491	161	731
% App. Total	3.5	80.8	10.5	15.1	65.6	20.3	3.8	84.5	11.7	10.8	67.2	22	0.696	0.952	0.821	0.628
PHF	0.823	0.92	0.933	0.919	0.855	0.839	0.815	0.871	0.691	0.875	0.711	0.941	0.696	0.952	0.821	0.628

TMC Summary of Grand Ave./1st St.

Project #: 04-1414-004



Intersection Turning Movement

Prepared by: Southland Car Counters

N-S STREET: Grand Ave. DATE: 6/24/2004 LOCATION: City of Santa Ana
 E-W STREET: 1st St. DAY: THURSDAY PROJECT# 04-1414-004

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR
6:00 AM	182	879	65	180	2252	122	472	1707	355	394	956	98	7662			
6:15 AM																
6:30 AM																
6:45 AM																
7:00 AM	36	90	7	15	286	12	44	190	36	38	109	10	853			
7:15 AM	28	96	5	22	303	16	62	206	44	47	114	12	955			
7:30 AM	30	108	7	17	309	24	70	218	50	59	130	18	1040			
7:45 AM	33	109	8	21	312	27	75	225	52	68	135	20	1085			
8:00 AM	20	125	13	37	288	11	72	237	51	61	122	14	1051			
8:15 AM	25	123	9	30	279	15	56	221	49	52	128	11	998			
8:30 AM	16	118	10	20	255	10	49	216	40	41	116	8	899			
8:45 AM	14	110	6	18	220	7	44	194	33	28	102	5	781			
9:00 AM																
9:15 AM																
9:30 AM																
9:45 AM																
10:00 AM																
10:15 AM																
10:30 AM																
10:45 AM																
11:00 AM																
11:15 AM																
11:30 AM																
11:45 AM																

TOTAL VOLUMES =	NL	NT	NR	SR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR	TOTAL
	108	465	37	105	1188	77	273	901	202	240	515	63	4174				7662
PEAK VOLUMES =																	
PEAK HR. FACTOR:	0.965																
CONTROL:	Signalized;																

AM Peak Hr Begins at: 7:30 AM

Intersection Turning Movement

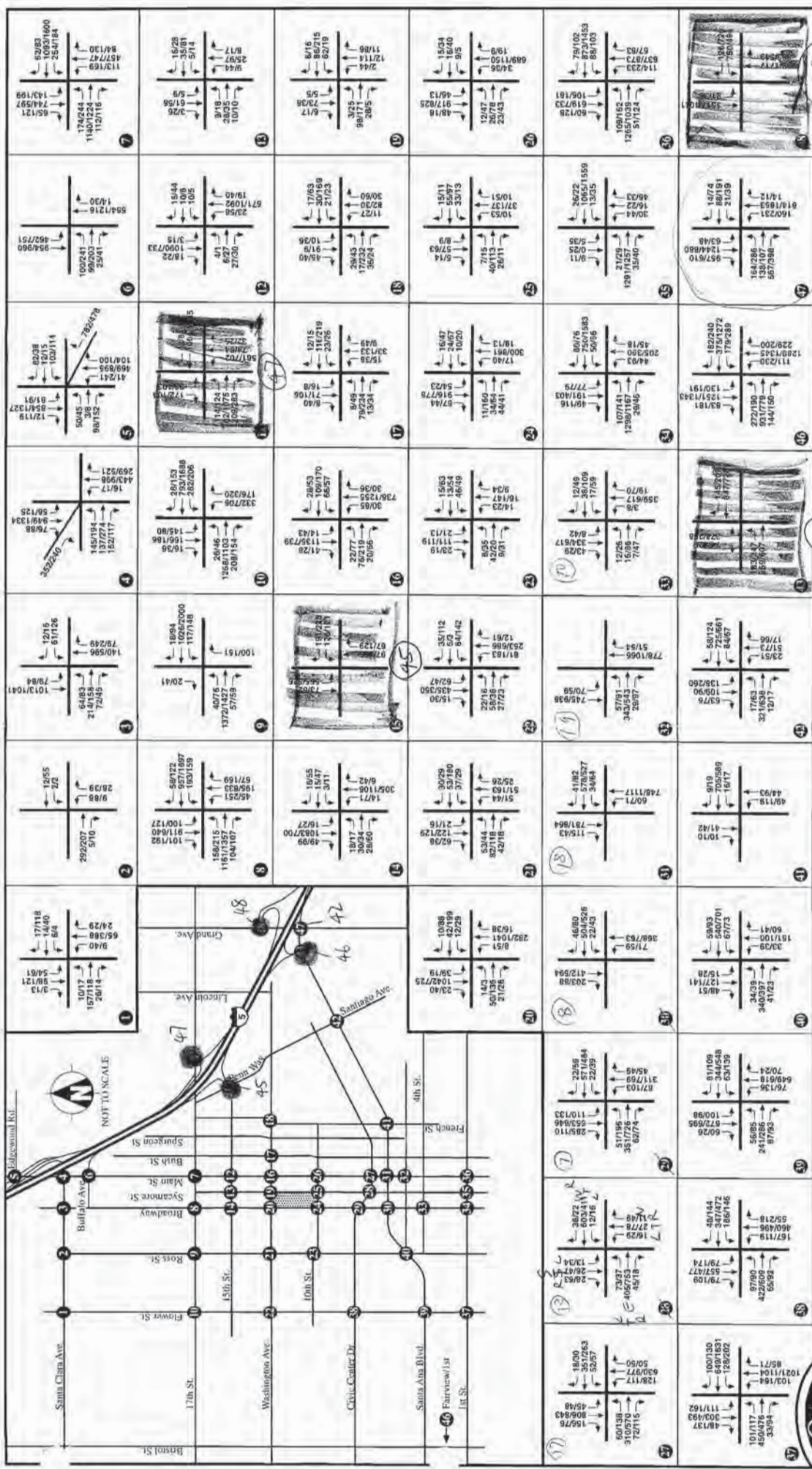
Prepared by: Southland Car Counters

N-S STREET: Grand Ave. DATE: 6/24/2004 LOCATION: City of Santa Ana
 E-W STREET: 1st St. DAY: THURSDAY PROJECT# 04-1414-004

LANES:	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	NL	NT	NR	SR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR
1:00 PM	38	286	12	15	213	15	29	219	26	24	176	6	1059			
1:15 PM	35	294	19	26	228	15	32	236	42	25	194	6	1152			
1:30 PM	30	301	15	20	226	18	36	256	31	29	189	8	1159			
1:45 PM	36	296	19	19	252	19	48	250	29	44	210	11	1233			
2:00 PM	31	319	13	22	241	17	52	234	30	39	216	10	1218			
2:15 PM	31	321	12	29	244	22	42	248	26	36	226	12	1249			
2:30 PM	26	316	13	24	222	26	36	246	25	22	224	9	1189			
2:45 PM	27	298	15	18	209	18	28	221	22	20	219	7	1102			
3:00 PM																
3:15 PM																
3:30 PM																
3:45 PM																
4:00 PM																
4:15 PM																
4:30 PM																
4:45 PM																
5:00 PM																
5:15 PM																
5:30 PM																
5:45 PM																
6:00 PM																
6:15 PM																
6:30 PM																
6:45 PM																

TOTAL VOLUMES =	NL	NT	NR	SR	SL	ST	SR	SR	EL	ET	ER	ER	WL	WT	WR	WR	TOTAL
	248	2431	118	173	1835	150	303	1910	231	239	1654	69	9361				9361
PEAK VOLUMES =	118	1252	57	94	959	84	178	978	110	141	876	42	4889				4889
PEAK HR. FACTOR:	0.980																
CONTROL:	Signalized;																

PM Peak Hr Begins at: 4:45 PM



EXISTING PEAK HOUR INTERSECTION TURNING VOLUMES

for 42

FIGURE T-8

One Broadway Plaza
EIR Traffic Impact Study
LEGEND: XXXXX
AMPM

Source: H&D Consultants/LPA Architects

49

TRAFFIC DATA SERVICES, INC
SUMMARY OF VEHICULAR TURNING MOVEMENTS

N/S ST: MORTIMER ST
E/W ST: SANTA ANA BLVD
CITY: SANTA ANA

FILENAME: 1070801
DATE: 10/4/2007
DAY: THURSDAY

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			Total
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	42			2	0	0				1	128	4	177
15 AM	44			1	1	1				1	150	1	199
30 AM	52			1	2	0				6	161	0	222
45 AM	47			1	1	0				6	189	1	245
8:00 AM	38			1	1	0				12	201	1	254
15 AM	32			0	0	1				4	176	1	214
30 AM	22			0	1	0				9	142	1	175
45 AM	18			0	0	0				3	138	0	159

PEAK HOUR BEGINS AT:
7:30 AM

VOLUMES = 0 0 169 3 4 1 0 0 0 0 28 727 3 935

PHF: 0.92

FILENAME: 1070801P
DATE: 10/4/2007
DAY: THURSDAY

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			Total
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	2			0	0	0				11	90	1	183
15 PM	60			0	1	1				9	83	4	158
30 PM	92			0	0	1				10	93	0	196
45 PM	70			0	0	2				11	112	2	197
5:00 PM	118			0	0	0				12	109	0	239
15 PM	102			1	0	1				14	103	3	224
30 PM	145			0	0	0				2	115	0	263
45 PM	142			0	0	1				13	108	3	267

PEAK HOUR BEGINS AT:
17:00 PM

VOLUMES = 1 0 507 1 0 2 0 0 0 0 41 435 6 893

PHF: 0.83

COMMENTS:

50

TRAFFIC DATA SERVICES, INC
Summary of Vehicular Turning Movements

N/S ST: MORTIMER ST
E/W ST: 5TH ST
CITY: SANTA ANA

FILENAME: 0652305
DATE: 6/29/2005
DAY: WEDNESDAY

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			Total
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
7:00 AM	1			0	1	0				1	0.5	0.5	0.5
15 AM	25			0	4	4				41	4	9	0
30 AM	33			1	6	11				48	9	11	1
45 AM	27			0	4	7				39	3	7	1
8:00 AM	32			2	3	2				38	9	7	1
15 AM	34			0	3	2				27	8	6	1
30 AM	32			1	5	1				21	6	9	2
45 AM	27			1	2	2				23	7	8	1
	15			3	0	4				18	6	9	1

PEAK HOUR BEGINS AT:
7:00 AM

VOLUMES = 0 117 4 3 17 0 166 25 34 5 0 9 380

PHF: 0.88

FILENAME: 0652305P
DATE: 6/29/2005
DAY: WEDNESDAY

LANES:	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			Total
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	
4:00 PM	42			1	3	3				87	16	10	5
15 PM	33			0	3	11				53	12	11	4
30 PM	37			2	7	6				122	16	6	13
45 PM	18			0	4	8				83	21	8	5
5:00 PM	51			1	9	14				137	23	14	14
15 PM	47			1	7	10				108	25	10	15
30 PM	41			2	7	13				133	18	13	8
45 PM	31			0	4	11				76	15	11	6

PEAK HOUR BEGINS AT:
17:00 PM

VOLUMES = 0 170 5 5 27 0 454 81 48 10 0 43 843

PHF: 0.84

COMMENTS:

2007 ADT Data Provided by City of Santa Ana

E-W St	Boundary Streets	2007 volume
Civic Center Dr	from Ross St to Broadway	15,487
Civic Center Dr	from Broadway to Main St	15,215
Civic Center Dr	from Main St to Santiago	12,032
Santa Ana Blvd	from Flower St to Ross St	12,677
Santa Ana Blvd	from Ross St to Broadway	12,396
Santa Ana Blvd	from Broadway to Main St	10,401
Santa Ana Blvd	from Main St to French St	10,420
Santa Ana Blvd	from French St to Santiago St	14,716
Santa Ana Blvd	from Santiago St to Grand Ave	20,054
Fifth St	from Ross St to Main St	8,736
Fifth St	from Main St to French St	5,878
First St	from Flower St to Broadway	40,012
First St	from Broadway to Main St	38,578
First St	from Main St to Standard Ave	39,076
First St	from Standard Ave to Grand Ave	40,796
Fourth St	from Ross St to Main St	6,737
Fourth St	from Main St to French St	11,974
Fourth St	from French St to Grand Ave	18,423
Third St	from Flower St to Ross St	3,637
Third St	from Ross St to Broadway	4,996
Third St	from Broadway to Main St	5,775
Third St	from Main St to French St	4,913

ADT Data Provided by City of Santa Ana

N-S Streets	Boundary Streets	2007 volume
Flower St	from First St to Santa Ana Blvd	18,792
Flower St	from Santa Ana Blvd to Civic Center Dr	18,722
Flower St	from Civic Center Dr to Washington Ave	17,518
Flower St	from Washington Ave to 17th St	16,681
Ross St	from First St to Santa Ana Blvd	6,233
Ross St	from Santa Ana Blvd to Civic Center Dr	6,054
Ross St	from Civic Center Dr to Washington Ave	6,260
Ross St	from Washington Ave to 17th St	6,426
Broadway	from First St to Santa Ana Blvd	15,994
Broadway	from Santa Ana Blvd to Civic Center Dr	18,621
Broadway	from Civic Center Dr to 17th St	23,651
Main St	from First St to Fourth St	28,886
Main St	from Fourth St to Civic Center Dr	33,148
Main St	from Civic Center Dr to Washington Ave	32,580
Main St	from Washington Ave to 17th St	34,214
Grand Ave	from First St to Fourth St	31,391
Grand Ave	from Fourth St to Santa Ana Blvd	37,935
Grand Ave	from Santa Ana Blvd to Seventeenth St	32,682

APPENDIX B
Existing Conditions Analysis Worksheets

Santa Ana Renaissance Specific Plan Traffic Study
Existing AM Peak Hour Analysis

Scenario Report

Scenario: Exist AM
Command: AM Peak
Volume: Exist AM
Geometry: Default Geometry
Impact Fee: Default Impact Fee
Trip Generation: Default Trip Generation
Trip Distribution: Default Trip Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Santa Ana Renaissance Specific Plan Traffic Study
Existing AM Peak Hour Analysis

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS Veh	V/ C	Del/ LOS Veh	V/ C	
# 1 Flower St (NS) / Civic Center D	B	xxxxxx 0.617	B	xxxxxx 0.617	+ 0.000 V/C
# 2 Flower St (N/S) / Santa Ana Bl	A	xxxxxx 0.524	A	xxxxxx 0.524	+ 0.000 V/C
# 3 Parton St (E/W) / Santa Ana Bl	A	xxxxxx 0.256	A	xxxxxx 0.256	+ 0.000 V/C
# 4 Ross St (N/S) / Civic Center D	A	xxxxxx 0.476	A	xxxxxx 0.476	+ 0.000 V/C
# 5 Ross St (N/S) / Santa Ana Bl (	A	xxxxxx 0.435	A	xxxxxx 0.435	+ 0.000 V/C
# 6 Ross St (N/S) / 4th St (E/W)	B	10.5 0.000	B	10.5 0.000	+ 0.000 D/V
# 7 Broadway (N/S) / Civic Center	A	xxxxxx 0.535	A	xxxxxx 0.535	+ 0.000 V/C
# 8 Broadway (N/S) / Santa Ana Bl	A	xxxxxx 0.417	A	xxxxxx 0.417	+ 0.000 V/C
# 9 Broadway (N/S) / 5th St (E/W)	A	xxxxxx 0.314	A	xxxxxx 0.314	+ 0.000 V/C
# 10 Broadway (N/S) / 4th St (E/W)	A	xxxxxx 0.274	A	xxxxxx 0.274	+ 0.000 V/C
# 11 Broadway (N/S) / 3rd st (E/W)	A	xxxxxx 0.299	A	xxxxxx 0.299	+ 0.000 V/C
# 12 Broadway (N/S) / 1st St (E/W)	A	xxxxxx 0.568	A	xxxxxx 0.568	+ 0.000 V/C
# 13 Sycamore St (N/S) / Civic Cent	A	xxxxxx 0.383	A	xxxxxx 0.383	+ 0.000 V/C
# 14 Sycamore St (N/S) / Santa Ana	C	18.3 0.000	C	18.3 0.000	+ 0.000 D/V
# 15 Sycamore St (N/S) / 5th St (E/	B	14.3 0.000	B	14.3 0.000	+ 0.000 D/V
# 16 Sycamore St (N/S) / 4th St (E/	A	7.5 0.145	A	7.5 0.145	+ 0.000 V/C
# 17 Main St (N/S) / Civic Center D	B	xxxxxx 0.680	B	xxxxxx 0.680	+ 0.000 V/C
# 18 Main St (N/S) / Santa Ana Dr (	A	xxxxxx 0.586	A	xxxxxx 0.586	+ 0.000 V/C
# 19 Main St (N/S) / 5th St (E/W)	A	xxxxxx 0.438	A	xxxxxx 0.438	+ 0.000 V/C
# 20 Main St (N/S) / 4th St (E/W)	A	xxxxxx 0.441	A	xxxxxx 0.441	+ 0.000 V/C
# 21 Main St (N/S) / 3rd St (E/W)	A	xxxxxx 0.423	A	xxxxxx 0.423	+ 0.000 V/C
# 22 Main St (N/S) / 1st St (E/W)	B	xxxxxx 0.693	B	xxxxxx 0.693	+ 0.000 V/C
# 23 Bush St (N/S) / Santa Ana Bl (	A	xxxxxx 0.263	A	xxxxxx 0.263	+ 0.000 V/C
# 24 Bush St (N/S) / 5th St (E/W)	A	xxxxxx 0.216	A	xxxxxx 0.216	+ 0.000 V/C

Santa Ana Renaissance Specific Plan Traffic Study
Existing AM Peak Hour Analysis

Intersection	Base		Future		Change in
	Del/ LOS Veh	V/ C	Del/ LOS Veh	V/ C	
# 25 Bush St (N/S) / 4th St (E/W)	A	xxxxxx 0.228	A	xxxxxx 0.228	+ 0.000 V/C
# 26 Spurgeon St (N/S) / 1st St (E/	A	10.0 0.000	A	10.0 0.000	+ 0.000 D/V
# 27 French St (N/S) / Santa Ana Bl	C	17.1 0.000	C	17.1 0.000	+ 0.000 D/V
# 28 French St (N/S) / 4th St (E/W)	A	xxxxxx 0.248	A	xxxxxx 0.248	+ 0.000 V/C
# 29 Lacy St (N/S) / Civic Center D	C	15.8 0.000	C	15.8 0.000	+ 0.000 D/V
# 30 Lacy st (N/S) / Santa Ana Bl (	D	25.3 0.000	D	25.3 0.000	+ 0.000 D/V
# 31 Lacy St (N/S) / Brown St (E/W)	A	7.1 0.083	A	7.1 0.083	+ 0.000 V/C
# 32 Lacy St (N/S) / 4th St (E/W)	A	xxxxxx 0.353	A	xxxxxx 0.353	+ 0.000 V/C
# 33 Lacy St (N/S) / 1st St (E/W)	C	16.6 0.000	C	16.6 0.000	+ 0.000 D/V
# 34 Santiago St (N/S) / Washington	B	12.7 0.568	B	12.7 0.568	+ 0.000 V/C
# 35 Santiago St (N/S) / Civic Cent	B	14.5 0.609	B	14.5 0.609	+ 0.000 V/C
# 36 Santiago St (N/S) / Santa Ana	A	xxxxxx 0.481	A	xxxxxx 0.481	+ 0.000 V/C
# 40 Standard Av (N/S) / 1st St (E/	C	xxxxxx 0.723	C	xxxxxx 0.723	+ 0.000 V/C
# 42 Grand Av (N/S) / Santa Ana Bl	C	xxxxxx 0.792	C	xxxxxx 0.792	+ 0.000 V/C
# 43 Grand Av (N/S) / 4th St (E/W)	B	xxxxxx 0.601	B	xxxxxx 0.601	+ 0.000 V/C
# 44 Grand Av (N/S) / 1st St (E/W)	C	xxxxxx 0.764	C	xxxxxx 0.764	+ 0.000 V/C
# 45 Penn Way (NS) at I-5 SB Ramps	B	18.6 0.342	B	18.6 0.342	+ 0.000 D/V
# 46 I-5 SB Ramps (NS) / Santa Ana	C	26.7 0.443	C	26.7 0.443	+ 0.000 D/V
# 47 I-5 NB Ramps (NS) / 17th St. (	C	31.3 0.699	C	31.3 0.699	+ 0.000 D/V
# 48 I-5 NB Ramps (NS) / Grand Ave	B	19.8 0.576	B	19.8 0.576	+ 0.000 D/V
# 49 Mortimer St. / Santa Ana Blvd	C	17.5 0.000	C	17.5 0.000	+ 0.000 D/V
# 50 Mortimer St. / 5th St.	A	8.7 0.250	A	8.7 0.250	+ 0.000 V/C

Santa Ana Renaissance Specific Plan Traffic Study
Existing AM Peak Hour Analysis

Level Of Service Computation Report
ICU l(Loss as Cycle Length %) Method (Base Volume Alternative)

Intersection #1 Flower St (NS) / Civic Center Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.617
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 30 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1	0	1	1	0	1	1	0	1

Volume Module:

Base Vol:	141	625	150	108	575	163	121	474	144	127	411	37
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:	141	625	150	108	575	163	121	474	144	127	411	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:	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:	141	625	150	108	575	163	121	474	144	127	411	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	141	625	150	108	575	163	121	474	144	127	411	37
PCF Adj:	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:	141	625	150	108	575	163	121	474	144	127	411	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	1.61	0.39	1.00	1.56	0.44	1.00	1.53	0.47	1.00	1.83	0.17
Final Sat.:	1598	2742	658	1598	2649	751	1598	2608	792	1598	3119	281

Capacity Analysis Module:

Vol/Sat:	0.09	0.23	0.23	0.07	0.22	0.22	0.08	0.18	0.18	0.08	0.13	0.13
Crit Moves:	***	***	***	***	***	***	***	***	***	***	***	

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative). Intersection #2 Flower St (N/S) / Santa Ana Bl (E/W). Cycle (sec): 100, Critical Vol./Cap.(X): 0.524, Loss Time (sec): 5 (Y+R=4.0 sec), Average Delay (sec/veh): xxxxxxx, Optimal Cycle: 23, Level Of Service: A. Approach: North Bound, South Bound, East Bound, West Bound. Control: Permitted, Permitted, Permitted, Permitted. Rights: Include, Include, Include, Include. Min. Green: 0 0 0 0, 0 0 0 0, 0 0 0 0, 0 0 0 0. Lanes: 1 0 2 0 1, 1 0 2 0 1, 1 0 3 0 1, 1 0 2 0 1. Volume Module: Base Vol: 59 870 58 148 773 73 80 456 139 60 258 106. Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700. Adjustment: 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00. Lanes: 1.00 2.00 1.00 1.00 1.00 1.00 1.00 3.00 1.00 1.00 1.00 1.00. Final Sat.: 1598 3400 1598 1598 3400 1598 1598 5100 1598 1598 3400 1598. Capacity Analysis Module: Vol/Sat: 0.04 0.26 0.04 0.09 0.23 0.05 0.05 0.09 0.09 0.04 0.08 0.07. Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative). Intersection #3 Parton St (E/W) / Santa Ana Bl (E/W). Cycle (sec): 100, Critical Vol./Cap.(X): 0.256, Loss Time (sec): 5 (Y+R=4.0 sec), Average Delay (sec/veh): xxxxxxx, Optimal Cycle: 16, Level Of Service: A. Approach: North Bound, South Bound, East Bound, West Bound. Control: Permitted, Permitted, Permitted, Permitted. Rights: Include, Include, Include, Include. Min. Green: 0 0 0 0, 0 0 0 0, 0 0 0 0, 0 0 0 0. Lanes: 0 0 1 0 0, 0 0 1 0 0, 1 0 2 1 0, 1 0 2 1 0. Volume Module: Base Vol: 13 4 29 19 6 20 28 535 104 68 444 76. 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 0.94 0.94 1.00 1.00 0.94 1.00 1.00. Lanes: 0.28 0.09 0.63 0.76 0.24 1.00 1.00 2.51 0.49 1.00 2.56 0.44. Final Sat.: 480 148 1072 1292 408 1598 1598 4270 830 1598 4355 745. Capacity Analysis Module: Vol/Sat: 0.01 0.03 0.03 0.01 0.01 0.01 0.02 0.13 0.13 0.04 0.10 0.10. Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative). Intersection #4 Ross St (N/S) / Civic Center Dr (E/W). Cycle (sec): 100, Critical Vol./Cap.(X): 0.476, Loss Time (sec): 5 (Y+R=4.0 sec), Average Delay (sec/veh): xxxxxxx, Optimal Cycle: 23, Level Of Service: A. Approach: North Bound, South Bound, East Bound, West Bound. Control: Permitted, Permitted, Permitted, Permitted. Rights: Include, Include, Include, Include. Min. Green: 0 0 0 0, 0 0 0 0, 0 0 0 0, 0 0 0 0. Lanes: 1 0 1 0 1, 1 0 0 1 0, 1 0 1 1 0, 1 0 1 1 0. Volume Module: Base Vol: 84 177 60 59 197 51 44 522 88 60 634 45. Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700. Adjustment: 0.94 1.00 0.94 1.00 0.94 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 1.71 0.29 1.00 1.87 0.13. Final Sat.: 1598 1700 1598 1598 1350 350 1598 2910 490 1598 3175 225. Capacity Analysis Module: Vol/Sat: 0.05 0.10 0.04 0.04 0.15 0.15 0.03 0.18 0.18 0.04 0.20 0.20. Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative). Intersection #5 Ross St (N/S) / Santa Ana Bl (E/W). Cycle (sec): 100, Critical Vol./Cap.(X): 0.435, Loss Time (sec): 5 (Y+R=4.0 sec), Average Delay (sec/veh): xxxxxxx, Optimal Cycle: 21, Level Of Service: A. Approach: North Bound, South Bound, East Bound, West Bound. Control: Permitted, Permitted, Protected, Protected. Rights: Include, Include, Ignore, Ignore. Min. Green: 0 0 0 0, 0 0 0 0, 0 0 0 0, 0 0 0 0. Lanes: 1 0 1 0 1, 1 0 1 0 1, 1 0 2 0 1, 1 0 3 0 1. Volume Module: Base Vol: 21 143 58 54 154 98 69 518 19 183 351 92. Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700. Adjustment: 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00. Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 2.00 1.00 1.00 3.00 1.00. Final Sat.: 1598 1700 1598 1598 1700 1598 1598 3400 1598 1598 5100 1598. Capacity Analysis Module: Vol/Sat: 0.01 0.08 0.04 0.03 0.09 0.06 0.04 0.15 0.00 0.11 0.07 0.00. Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)
Intersection #6 Ross St (N/S) / 4th St (E/W)
Average Delay (sec/veh): 1.9 Worst Case Level Of Service: B [10.5]
Approach: North Bound South Bound East Bound West Bound
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 0 1 0 1 0 1 0 0 0 0 0 1 0 0 0 1
Volume Module:
Base Vol: 0 238 10 39 178 0 0 0 0 0 19 0 48
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: 0 238 10 39 178 0 0 0 0 0 19 0 48
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 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 1.00 1.00
PHF Volume: 0 238 10 39 178 0 0 0 0 0 19 0 48
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 238 10 39 178 0 0 0 0 0 19 0 48
Critical Gap Module:
Critical Gap: 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1 4.1
FollowupTime: 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7
Capacity Module:
Conflict Vol: 248 248 248 248 248 248 248 248 248 248 248 248 248 248
Potential Cap: 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330
Move Cap: 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330
Volume/Cap: 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03
Level Of Service Module:
2Way95thQ: 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1
Control Del: 7.8 7.8 7.8 7.8 7.8 7.8 7.8 7.8 7.8 7.8 7.8 7.8 7.8 7.8
LOS by Move: A B A B A B A B A B A B A B A B
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap: 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330
SharedQueue: 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330
Shrd ConDel: 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330 1330
Shared LOS: * * * * *
ApproachDel: 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5 10.5
ApproachLOS: B B B B B B B B B B B B B B B
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #7 Broadway (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.535
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 25 Level Of Service: A
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: Ignore Ignore Include Include
Lanes: 1 0 2 0 1 1 0 2 0 1 1 0 1 1 0 1 0 1 1 0
Volume Module:
Base Vol: 86 410 49 114 616 222 102 421 64 39 550 83
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: 86 410 49 114 616 222 102 421 64 39 550 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 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 1.00 1.00
PHF Volume: 86 410 49 114 616 222 102 421 64 39 550 83
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 86 410 49 114 616 222 102 421 64 39 550 83
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 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 1.00 1.00
FinalVolume: 86 410 49 114 616 222 102 421 64 39 550 83
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 1.00 2.00 1.00 1.00 2.00 1.00 1.00 1.74 0.26 1.00 1.74 0.26 1.00 1.74 0.26
Final Sat.: 1598 3400 1598 1598 3400 1598 1598 2951 449 1598 2954 446
Capacity Analysis Module:
Vol/Sat: 0.05 0.12 0.00 0.07 0.18 0.00 0.06 0.14 0.14 0.02 0.19 0.19
Crit Moves: **** *

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #8 Broadway (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.417
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 21 Level Of Service: A
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
Lanes: 1 0 2 0 0 0 0 1 1 0 0 0 0 0 1 1 1 0 0
Volume Module:
Base Vol: 36 568 0 0 602 185 0 0 0 19 500 55
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: 36 568 0 0 602 185 0 0 0 19 500 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 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 1.00 1.00
PHF Volume: 36 568 0 0 602 185 0 0 0 19 500 55
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 36 568 0 0 602 185 0 0 0 19 500 55
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 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 1.00 1.00
FinalVolume: 36 568 0 0 602 185 0 0 0 19 500 55
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 1.00 2.00 0.94 0.94 1.53 0.47 0.00 0.00 0.00 0.10 2.61 0.29
Final Sat.: 1598 3400 0 0 2601 799 0 0 0 169 4443 489
Capacity Analysis Module:
Vol/Sat: 0.02 0.17 0.00 0.00 0.23 0.23 0.00 0.00 0.00 0.01 0.11 0.11
Crit Moves: **** *

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #9 Broadway (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.314
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 18 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Permitted Protected Permitted Permitted
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 1 0 2 0 0 0 1 1 1 0 0 0 0 0 0
Volume Module:
Base Vol: 0 428 35 67 472 0 99 334 6 0 0 0 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 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 0 428 35 67 472 0 99 334 6 0 0 0 0
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 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 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 0 428 35 67 472 0 99 334 6 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 428 35 67 472 0 99 334 6 0 0 0 0
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 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 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 0 428 35 67 472 0 99 334 6 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00 0.94 1.00 1.00 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 0.00 1.85 0.15 1.00 2.00 0.00 0.68 2.28 0.04 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Final Sat.: 0 3143 257 1598 3400 0 1150 3880 70 0 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.00 0.14 0.14 0.04 0.14 0.00 0.06 0.09 0.09 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00
Crit Moves: **** *

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative) Intersection #10 Broadway (N/S) / 4th St (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.274 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 17 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative) Intersection #11 Broadway (N/S) / 3rd St (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.299 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 17 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative) Intersection #12 Broadway (N/S) / 1st St (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.568 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 27 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative) Intersection #13 Sycamore St (N/S) / Civic Center Dr (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.383 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 19 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)
Intersection #14 Sycamore St (N/S) / Santa Ana Bl (E/W)
Average Delay (sec/veh): 2.6 Worst Case Level Of Service: C[18.3]
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 1 0 0 0 0 0 1 1 1 0 0
Volume Module:
Base Vol: 8 31 0 0 38 20 0 0 0 62 686 26
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: 8 31 0 0 38 20 0 0 0 62 686 26
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: 8 31 0 0 38 20 0 0 0 62 686 26
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 8 31 0 0 38 20 0 0 0 62 686 26
Critical Gap Module:
Critical Gap: 7.1 6.5 xxxxxx xxxxx 6.5 6.2 xxxxxx xxxxx 4.1 xxxxx xxxxxx
FollowUpTm: 3.5 4.0 xxxxxx xxxxx 4.0 3.3 xxxxxx xxxxx 2.2 xxxxx xxxxxx
Capacity Module:
Conflict Vol: 372 836 xxxxxx xxxxx 823 242 xxxxx xxxxx xxxxxx 0 xxxxx xxxxxx
Potent Cap.: 589 305 xxxxxx xxxxx 311 802 xxxxx xxxxx xxxxxx 900 xxxxx xxxxxx
Move Cap.: 488 283 xxxxxx xxxxx 288 802 xxxxx xxxxx xxxxxx 900 xxxxx xxxxxx
Volume/Cap: 0.02 0.11 xxxxx xxxxx 0.13 0.02 xxxxx xxxxx xxxxx 0.07 xxxxx xxxxx
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx
Control Del: xxxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx 9.3 xxxxx xxxxxx
LOS by Move: * * * * * A * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: 310 xxxxx xxxxxx xxxxx xxxxx 370 xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue: 0.4 xxxxx xxxxxx xxxxx xxxxx 0.5 xxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx
Shrd ConDel: 18.3 xxxxx xxxxxx xxxxx xxxxx 16.5 xxxxx xxxxx xxxxxx 9.3 xxxxx xxxxxx
Shared LOS: C * * * * * C * * * * * A * * * * *
ApproachDel: 18.3 * * * * * 16.5 xxxxxxxx xxxxxxxx
ApproachLOS: C * * * * * C * * * * *
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)
Intersection #15 Sycamore St (N/S) / 5th St (E/W)
Average Delay (sec/veh): 2.7 Worst Case Level Of Service: B[14.3]
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 0 1 0 0 0 1 0 0 0 0 0 1 1 1 0 0
Volume Module:
Base Vol: 0 27 21 81 32 0 15 695 15 0 0 0 0 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 1.00
Initial Bse: 0 27 21 81 32 0 15 695 15 0 0 0 0 0
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 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 1.00
PHF Volume: 0 27 21 81 32 0 15 695 15 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 27 21 81 32 0 15 695 15 0 0 0 0 0 0 0 0
Critical Gap Module:
Critical Gap: xxxxxx 6.5 6.2 7.1 6.5 xxxxxx 4.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx
FollowUpTm: xxxxxx 4.0 3.3 3.5 4.0 xxxxxx 2.2 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Capacity Module:
Conflict Vol: xxxxx 733 239 275 740 xxxxxx 0 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Potent Cap.: xxxxx 350 805 681 347 xxxxxx 900 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Move Cap.: xxxxx 345 805 616 341 xxxxxx 900 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Volume/Cap: xxxxx 0.08 0.03 0.13 0.09 xxxxxx 0.02 xxxxx xxxxx xxxxx xxxxx xxxxx
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del: xxxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx 9.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx
LOS by Move: * * * * * A * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx 460 501 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue: xxxxxx xxxxx 0.3 0.9 xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Shrd ConDel: xxxxxx xxxxx 13.7 14.3 xxxxx xxxxxx 9.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Shared LOS: * * * * * B * * * * * A * * * * *
ApproachDel: 13.7 * * * * * 14.3 xxxxxxxx xxxxxxxx
ApproachLOS: * * * * * B * * * * * A * * * * *
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)
Intersection #16 Sycamore St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.145
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 7.5
Optimal Cycle: 35 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0
Volume Module:
Base Vol: 1 8 4 14 11 11 13 44 7 29 73 27
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 8 4 14 11 11 13 44 7 29 73 27
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: 1 8 4 14 11 11 13 44 7 29 73 27
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 1 8 4 14 11 11 13 44 7 29 73 27
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 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 1.00
FinalVolume: 1 8 4 14 11 11 13 44 7 29 73 27
Saturation Flow Module:
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: 0.08 0.61 0.31 0.39 0.30 0.31 0.20 0.69 0.11 0.22 0.57 0.21
Final Sat.: 64 509 255 320 251 251 176 594 95 200 505 187
Capacity Analysis Module:
Vol/Sat: 0.02 0.02 0.02 0.04 0.04 0.04 0.07 0.07 0.07 0.14 0.14 0.14
Crit Moves: * * * * * * * * * * * * * * * *
Delay/Veh: 7.2 7.2 7.2 7.4 7.4 7.4 7.4 7.4 7.4 7.6 7.6 7.6
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 7.2 7.2 7.2 7.4 7.4 7.4 7.4 7.4 7.4 7.6 7.6 7.6
LOS by Move: A A A A A A A A A A A A A A A
ApproachDel: 7.2 * * * * * 7.4 * * * * * 7.6 * * * * *
Delay Adj: 1.00 * * * * * 1.00 * * * * * 1.00 * * * * *
ApprAdjDel: 7.2 * * * * * 7.4 * * * * * 7.6 * * * * *
LOS by Appr: A A A A A A A A A A A A A A A
AllWayAvgQ: 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 0.2 0.2 0.2
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
ICU l(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #17 Main St (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.680
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 35 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module:
Base Vol: 154 789 74 90 911 172 85 417 124 59 507 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 1.00
Initial Bse: 154 789 74 90 911 172 85 417 124 59 507 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 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 1.00
PHF Volume: 154 789 74 90 911 172 85 417 124 59 507 43
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 154 789 74 90 911 172 85 417 124 59 507 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 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 1.00
FinalVolume: 154 789 74 90 911 172 85 417 124 59 507 43
Saturation Flow Module:
Adjustment: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Lanes: 0.94 1.00 1.00 0.94 1.00 1.00 0.94 1.00 1.00 0.94 1.00 1.00 1.00
Adjustment: 1.00 1.83 0.17 1.00 1.68 0.32 1.00 1.00 1.54 0.46 1.00 1.84 0.16
Final Sat.: 1598 3108 292 1598 2860 540 1598 2621 779 1598 3134 266
Capacity Analysis Module:
Vol/Sat: 0.10 0.25 0.25 0.06 0.32 0.32 0.05 0.16 0.16 0.04 0.16 0.16
Crit Moves: * * * * * * * * * * * * * * * *
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative). Intersection #18 Main St (N/S) / Santa Ana Dr (E/W). Table with columns for Cycle, Loss Time, Optimal Cycle, Approach, Movement, Control, Rights, Min. Green, Lanes, Volume Module, Sat/Lane, Adjustment, Lanes, Final Sat., Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative). Intersection #19 Main St (N/S) / 5th St (E/W). Table with columns for Cycle, Loss Time, Optimal Cycle, Approach, Movement, Control, Rights, Min. Green, Lanes, Volume Module, Sat/Lane, Adjustment, Lanes, Final Sat., Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative). Intersection #20 Main St (N/S) / 4th St (E/W). Table with columns for Cycle, Loss Time, Optimal Cycle, Approach, Movement, Control, Rights, Min. Green, Lanes, Volume Module, Sat/Lane, Adjustment, Lanes, Final Sat., Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative). Intersection #21 Main St (N/S) / 3rd St (E/W). Table with columns for Cycle, Loss Time, Optimal Cycle, Approach, Movement, Control, Rights, Min. Green, Lanes, Volume Module, Sat/Lane, Adjustment, Lanes, Final Sat., Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #22 Main St (N/S) / 1st St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.693
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 36 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 1 0 2 0 1 1 0 2 1 0 1 0 2 1 0
Volume Module:
Base Vol: 150 634 72 117 800 78 119 1241 97 83 768 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 Base: 150 634 72 117 800 78 119 1241 97 83 768 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: 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: 150 634 72 117 800 78 119 1241 97 83 768 81
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 150 634 72 117 800 78 119 1241 97 83 768 81
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: 150 634 72 117 800 78 119 1241 97 83 768 81
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 0.94 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 1.00 1.80 0.20 1.00 1.00 1.00 1.00 2.78 0.22 1.00 2.71 0.29
Final Sat.: 1598 3053 347 1598 3400 1598 1598 4730 370 1598 4613 487
Capacity Analysis Module:
Vol/Sat: 0.09 0.21 0.21 0.07 0.24 0.05 0.07 0.26 0.26 0.05 0.17 0.17
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #23 Bush St (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.263
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 17 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 0 0 0 0 0 1 0 0 0 0 0 0 1 1 1 0
Volume Module:
Base Vol: 21 111 0 0 86 34 0 0 0 23 556 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 Base: 21 111 0 0 86 34 0 0 0 23 556 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: 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: 21 111 0 0 86 34 0 0 0 23 556 81
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 21 111 0 0 86 34 0 0 0 23 556 81
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: 21 111 0 0 86 34 0 0 0 23 556 81
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 1.00 1.00 0.94 1.00 0.94 1.00 0.94 1.00 1.00
Lanes: 1.00 1.00 0.00 0.00 0.72 0.28 0.00 0.00 0.00 0.10 2.53 0.37
Final Sat.: 1598 1700 0 0 1218 482 0 0 0 178 4296 626
Capacity Analysis Module:
Vol/Sat: 0.01 0.07 0.00 0.00 0.07 0.07 0.00 0.00 0.00 0.01 0.13 0.13
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #24 Bush St (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.216
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 16 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 0 1 0 1 0 0 0 1 1 1 0 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 110 28 27 94 0 22 313 13 0 0 0 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 Base: 0 110 28 27 94 0 22 313 13 0 0 0 0
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: 0 110 28 27 94 0 22 313 13 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 110 28 27 94 0 22 313 13 0 0 0 0
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: 0 110 28 27 94 0 22 313 13 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00 0.94 1.00 0.94
Lanes: 0.00 0.80 0.20 1.00 1.00 0.00 0.19 2.70 0.11 0.00 0.00 0.00
Final Sat.: 0 1355 345 1598 1700 0 322 4587 191 0 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.00 0.08 0.08 0.02 0.06 0.00 0.01 0.07 0.07 0.00 0.00 0.00
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #25 Bush St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.228
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 16 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 0 1 0 1 0 0 1 0 0 1 0 0 0 0 1 0 0 0
Volume Module:
Base Vol: 7 123 8 16 88 4 7 71 10 10 120 18
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 Base: 7 123 8 16 88 4 7 71 10 10 120 18
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: 7 123 8 16 88 4 7 71 10 10 120 18
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 7 123 8 16 88 4 7 71 10 10 120 18
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: 7 123 8 16 88 4 7 71 10 10 120 18
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 0.94 1.00 1.00
Lanes: 1.00 0.94 0.06 1.00 0.96 0.04 0.08 0.81 0.11 0.07 0.81 0.12
Final Sat.: 1598 1596 104 1598 1626 74 135 1372 193 115 1378 207
Capacity Analysis Module:
Vol/Sat: 0.00 0.08 0.08 0.01 0.05 0.05 0.00 0.05 0.05 0.01 0.09 0.09
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)
Intersection #26 Spurgeon St (N/S) / 1st St (E/W)
Average Delay (sec/veh): 0.2 Worst Case Level Of Service: A [10.0]
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 0 0 0 0 0 1 0 0 3 0 0 0 0 2 1 0
Volume Module:
Base Vol: 0 0 0 0 0 0 35 0 1528 0 0 741 6
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 Base: 0 0 0 0 0 0 35 0 1528 0 0 741 6
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 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 1.00
PHF Volume: 0 0 0 0 0 0 35 0 1528 0 0 741 6
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 0 0 0 0 0 35 0 1528 0 0 741 6
Critical Gap Module:
Critical Gap: 6.9 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
FollowUpTim: 3.5 4.0 xxxxxx xxxxxx 4.0 3.3 xxxxxx xxxxxx xxxxxx 2.2 xxxxxx xxxxxx
Capacity Module:
Conflict Vol: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 250 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Potent Cap.: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 756 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Move Cap.: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 756 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Volume/Cap: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 0.95 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Level Of Service Module:
2Way95thQ: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 0.1 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Control Del: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 10.0 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
LOS by Move: * * * * * A
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
SharedQueue: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Shrd ConDel: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Shared LOS: * * * * * A
ApproachDel: xxxxxx 10.0 xxxxxx xxxxxx
ApproachLOS: C C C C
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)
Intersection #27 French St (N/S) / Santa Ana Bl (E/W)
Average Delay (sec/veh): 1.7 Worst Case Level Of Service: C [17.1]
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 1 0 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 1 0
Volume Module:
Base Vol: 44 19 0 0 0 24 2 0 0 0 0 12 783 10
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 Base: 44 19 0 0 0 24 2 0 0 0 0 12 783 10
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 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 1.00
PHF Volume: 44 19 0 0 0 24 2 0 0 0 0 12 783 10
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 44 19 0 0 0 24 2 0 0 0 0 12 783 10
Critical Gap Module:
Critical Gap: 7.1 6.5 xxxxxx xxxxxx 6.5 6.2 xxxxxx xxxxxx xxxxxx 4.1 xxxxxx xxxxxx
FollowUpTim: 3.5 4.0 xxxxxx xxxxxx 4.0 3.3 xxxxxx xxxxxx xxxxxx 2.2 xxxxxx xxxxxx
Capacity Module:
Conflict Vol: 428 817 xxxxxx xxxxxx 812 397 xxxxxx xxxxxx xxxxxx 0 xxxxxx xxxxxx
Potent Cap.: 541 313 xxxxxx xxxxxx 315 657 xxxxxx xxxxxx xxxxxx 900 xxxxxx xxxxxx
Move Cap.: 502 309 xxxxxx xxxxxx 311 657 xxxxxx xxxxxx xxxxxx 900 xxxxxx xxxxxx
Volume/Cap: 0.09 0.06 xxxxxx xxxxxx 0.08 0.00 xxxxxx xxxxxx xxxxxx 0.01 xxxxxx xxxxxx
Level Of Service Module:
2Way95thQ: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 0.0 xxxxxx xxxxxx
Control Del: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 9.1 xxxxxx xxxxxx
LOS by Move: * * * * * A
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: 423 xxxxxx xxxxxx xxxxxx xxxxxx 324 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
SharedQueue: 0.5 xxxxxx xxxxxx xxxxxx xxxxxx 0.3 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Shrd ConDel: 15.0 xxxxxx xxxxxx xxxxxx xxxxxx 17.1 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Shared LOS: C * * * * * C * * * * * A * * * * *
ApproachDel: 15.0 17.1 xxxxxx xxxxxx
ApproachLOS: C C C C
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)
Intersection #28 French St (N/S) / 4th St (E/W)
Average Delay (sec/veh): 0.248 Worst Case Level Of Service: A
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
Lanes: 0 0 1 1 0 0 1 0 0 1 0 0 0 1 0 0 1 0
Volume Module:
Base Vol: 3 18 30 61 31 12 1 50 4 37 182 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 Base: 3 18 30 61 31 12 1 50 4 37 182 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: 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: 3 18 30 61 31 12 1 50 4 37 182 42
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 3 18 30 61 31 12 1 50 4 37 182 42
Saturation Flow Module:
Sat/Lanes: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 0.94 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.94
Lanes: 0.06 0.35 0.59 1.00 0.72 0.28 0.02 0.91 0.07 0.17 0.83 1.00
Final Sat.: 100 600 1000 1598 1226 474 31 1545 124 287 1413 1598
Capacity Analysis Module:
Vol/Sat: 0.00 0.03 0.03 0.04 0.03 0.03 0.00 0.03 0.03 0.02 0.13 0.03
Crit. Moves: **** * * * * *
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)
Intersection #29 Lacy St (N/S) / Civic Center Dr (E/W)
Average Delay (sec/veh): 2.2 Worst Case Level Of Service: C [15.8]
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 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0
Volume Module:
Base Vol: 23 15 29 8 21 28 3 348 27 6 377 3
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 Base: 23 15 29 8 21 28 3 348 27 6 377 3
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 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 1.00
PHF Volume: 23 15 29 8 21 28 3 348 27 6 377 3
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 23 15 29 8 21 28 3 348 27 6 377 3
Critical Gap Module:
Critical Gap: 7.1 6.5 6.2 7.1 6.5 6.2 4.1 xxxxxx xxxxxx 4.1 xxxxxx xxxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxxxx xxxxxx 2.2 xxxxxx xxxxxx
Capacity Module:
Conflict Vol: 783 760 362 780 772 379 380 xxxxxx xxxxxx 375 xxxxxx xxxxxx
Potent Cap.: 314 338 688 315 333 673 1190 xxxxxx xxxxxx 1195 xxxxxx xxxxxx
Move Cap.: 285 326 688 290 330 673 1190 xxxxxx xxxxxx 1195 xxxxxx xxxxxx
Volume/Cap: 0.08 0.04 0.04 0.03 0.06 0.04 0.00 xxxxxx xxxxxx 0.01 xxxxxx xxxxxx
Level Of Service Module:
2Way95thQ: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 0.0 xxxxxx xxxxxx
Control Del: xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 8.0 xxxxxx xxxxxx 8.0 xxxxxx xxxxxx
LOS by Move: * * * * * A
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxxx 400 xxxxxx xxxxxx 429 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
SharedQueue: xxxxxx 0.6 xxxxxx xxxxxx 0.5 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Shrd ConDel: xxxxxx 15.8 xxxxxx xxxxxx 14.7 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Shared LOS: * C * * * * * B * * * * * A * * * * *
ApproachDel: 15.8 * * * * * 14.7 xxxxxx xxxxxx
ApproachLOS: C B C C
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)
Intersection #30 Lacy at (N/S) / Santa Ana Bl (E/W)
Average Delay (sec/veh): 2.3 Worst Case Level Of Service: D [25.3]
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 1 0 0 1 0 0 1 0

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)
Intersection #31 Lacy St (N/S) / Brown St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.083
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 7.1
Optimal Cycle: 0 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #32 Lacy St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.353
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 19 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 1 0 1 0 1 0

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)
Intersection #33 Lacy St (N/S) / 1st St (E/W)
Average Delay (sec/veh): 1.3 Worst Case Level Of Service: C [16.6]
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 0 0 0 0 0 0 1 1 0 0 1 0 3 0 0 0 0 0 2 1 0 0

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis Level Of Service Computation Report 2000 HCM 4-Way Stop Method (Base Volume Alternative) Intersection #34 Santiago St (N/S) / Washington Av (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.568 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 12.7 Optimal Cycle: 0 Level Of Service: B

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis Level Of Service Computation Report 2000 HCM 4-Way Stop Method (Base Volume Alternative) Intersection #35 Santiago St (N/S) / Civic Center Dr (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.609 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 14.5 Optimal Cycle: 0 Level Of Service: B

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative) Intersection #36 Santiago St (N/S) / Santa Ana Bl (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.481 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 23 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative) Intersection #40 Standard Av (N/S) / 1st St (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.723 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 40 Level Of Service: C

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative). Intersection #42 Grand Av (N/S) / Santa Ana Bl (E/W). Table with columns for Cycle, Loss Time, Optimal Cycle, Approach, Movement, Control, Rights, Min. Green, Lanes, Volume Module, Sat/Lane, Adjustment, Lane, Final Sat., Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative). Intersection #43 Grand Av (N/S) / 4th St (E/W). Table with columns for Cycle, Loss Time, Optimal Cycle, Approach, Movement, Control, Rights, Min. Green, Lanes, Volume Module, Sat/Lane, Adjustment, Lane, Final Sat., Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative). Intersection #44 Grand Av (N/S) / 1st St (E/W). Table with columns for Cycle, Loss Time, Optimal Cycle, Approach, Movement, Control, Rights, Min. Green, Lanes, Volume Module, Sat/Lane, Adjustment, Lane, Final Sat., Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis. Level Of Service Computation Report. 2000 HCM Operations Method (Base Volume Alternative). Intersection #45 Penn Way (NS) at I-5 SB Ramps (EW). Table with columns for Cycle, Loss Time, Optimal Cycle, Approach, Movement, Control, Rights, Min. Green, Lanes, Volume Module:AM Existing, Sat/Lane, Adjustment, Lane, Final Sat., Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis. Level Of Service Computation Report. 2000 HCM Operations Method (Base Volume Alternative). Intersection #46 I-5 SB Ramps (NS) / Santa Ana Bl (EW). Cycle (sec): 100. Critical Vol./Cap.(X): 0.443. Loss Time (sec): 12 (Y+R=4.0 sec). Average Delay (sec/veh): 26.7. Optimal Cycle: 37. Level Of Service: C. Approach: North Bound, South Bound, East Bound, West Bound. Control: Split Phase. Rights: Include. Lanes: 0 0 0 0 0 2 0 0 0 1 2 0 3 0 0 0 0 0 2 1 0. Volume Module: AM Peak. Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900. Adjustment: 1.00 1.00 1.00 0.92 1.00 0.85 0.92 0.91 1.00 1.00 0.89 0.89. Lanes: 0.00 0.00 0.00 2.00 0.00 1.00 2.00 3.00 0.00 0.00 2.56 0.44. Final Sat.: 0 0 0 3502 0 1615 3502 5187 0 0 4331 742. Capacity Analysis Module: Vol/Sat: 0.00 0.00 0.00 0.11 0.00 0.05 0.05 0.07 0.00 0.00 0.20 0.20. Crit Moves: ****. Green/Cycle: 0.00 0.00 0.00 0.25 0.00 0.25 0.17 0.17 0.00 0.00 0.46 0.46. Volume/Cap: 0.00 0.00 0.00 0.44 0.00 0.19 0.32 0.44 0.00 0.00 0.44 0.44. Delay/Veh: 0.0 0.0 0.0 31.7 0.0 29.5 37.0 37.8 0.0 0.0 18.5 18.5. User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. AdjDel/Veh: 0.0 0.0 0.0 31.7 0.0 29.5 37.0 37.8 0.0 0.0 18.5 18.5. LOS by Move: A A A C A C D D A A B B. HCM2kAvgQ: 0 0 0 6 0 2 3 4 0 0 7 0 8. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis. Level Of Service Computation Report. 2000 HCM Operations Method (Base Volume Alternative). Intersection #47 I-5 NB Ramps (NS) / 17th St. (EW). Cycle (sec): 100. Critical Vol./Cap.(X): 0.699. Loss Time (sec): 16 (Y+R=4.0 sec). Average Delay (sec/veh): 31.3. Optimal Cycle: 69. Level Of Service: C. Approach: North Bound, South Bound, East Bound, West Bound. Control: Split Phase. Rights: Include. Lanes: 1 1 0 0 1 1 0 0 0 1 1 0 3 0 1 0 0 0 2 1 0. Volume Module: AM Peak. Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900. Adjustment: 0.96 0.96 0.85 0.95 1.00 0.85 0.95 0.91 1.00 1.00 0.90 0.90. Lanes: 1.77 0.23 1.00 1.00 0.00 1.00 2.00 3.00 0.00 0.00 2.89 0.11. Final Sat.: 3229 412 1615 1805 0 1615 1805 5187 1900 0 4959 197. Capacity Analysis Module: Vol/Sat: 0.19 0.19 0.02 0.02 0.00 0.11 0.07 0.15 0.00 0.00 0.22 0.22. Crit Moves: ****. Green/Cycle: 0.27 0.27 0.27 0.16 0.00 0.16 0.09 0.41 0.00 0.00 0.32 0.32. Volume/Cap: 0.70 0.70 0.08 0.12 0.00 0.70 0.70 0.37 0.00 0.00 0.70 0.70. Delay/Veh: 35.3 35.3 27.5 36.2 0.0 48.1 56.0 20.4 0.0 0.0 31.2 31.2. User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. AdjDel/Veh: 35.3 35.3 27.5 36.2 0.0 48.1 56.0 20.4 0.0 0.0 31.2 31.2. LOS by Move: D D C D A D E C A A C C. HCM2kAvgQ: 11 11 1 1 0 7 5 6 0 0 12 12. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis. Level Of Service Computation Report. 2000 HCM Operations Method (Base Volume Alternative). Intersection #48 I-5 NB Ramps (NS) / Grand Ave (EW). Cycle (sec): 100. Critical Vol./Cap.(X): 0.576. Loss Time (sec): 12 (Y+R=4.0 sec). Average Delay (sec/veh): 19.8. Optimal Cycle: 46. Level Of Service: B. Approach: North Bound, South Bound, East Bound, West Bound. Control: Protected. Rights: Include. Lanes: 0 0 2 0 1 1 0 3 0 0 0 0 0 0 0 0 0 0 2 0 0 1. Volume Module: AM Peak. Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900. Adjustment: 1.00 0.95 0.85 0.95 0.91 1.00 1.00 1.00 1.00 0.92 1.00 0.85. Lanes: 0.00 2.00 1.00 1.00 3.00 0.00 0.00 0.00 0.00 2.00 0.00 1.00. Final Sat.: 0 3610 1615 1805 5187 0 0 0 0 3502 0 1615. Capacity Analysis Module: Vol/Sat: 0.00 0.19 0.22 0.02 0.29 0.00 0.00 0.00 0.00 0.21 0.00 0.08. Crit Moves: ****. Green/Cycle: 0.00 0.47 0.47 0.04 0.51 0.00 0.00 0.00 0.00 0.37 0.00 0.37. Volume/Cap: 0.00 0.41 0.48 0.48 0.58 0.00 0.00 0.00 0.00 0.58 0.00 0.21. Delay/Veh: 0.0 17.4 18.5 52.7 17.4 0.0 0.0 0.0 0.0 25.7 0.0 21.6. User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. AdjDel/Veh: 0.0 17.4 18.5 52.7 17.4 0.0 0.0 0.0 0.0 25.7 0.0 21.6. LOS by Move: A B B D B A A A C A C. HCM2kAvgQ: 0 7 8 2 12 0 0 0 0 10 0 3. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing AM Peak Hour Analysis. Level Of Service Computation Report. 2000 HCM Operations Method (Base Volume Alternative). Intersection #49 Mortimer St. / Santa Ana Blvd. Average Delay (sec/veh): 2.2. Worst Case Level of Service: C [17.5]. Street Name: Mortimer St. Santa Ana Blvd. Approach: North Bound, South Bound, East Bound, West Bound. Control: Stop Sign. Rights: Include. Lanes: 0 0 0 1 0 0 1 1 0 0 0 0 0 0 1 0 0 1 0 1 0. Volume Module: AM Peak. Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900. 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 1.00 1.00. Lanes: 0.00 2.00 1.00 1.00 3.00 0.00 0.00 0.00 0.00 2.00 0.00 1.00. Final Sat.: 0 3610 1615 1805 5187 0 0 0 0 3502 0 1615. Capacity Analysis Module: Vol/Sat: 0.00 0.19 0.22 0.02 0.29 0.00 0.00 0.00 0.00 0.21 0.00 0.08. Crit Moves: ****. Green/Cycle: 0.00 0.47 0.47 0.04 0.51 0.00 0.00 0.00 0.00 0.37 0.00 0.37. Volume/Cap: 0.00 0.41 0.48 0.48 0.58 0.00 0.00 0.00 0.00 0.58 0.00 0.21. Delay/Veh: 0.0 17.4 18.5 52.7 17.4 0.0 0.0 0.0 0.0 25.7 0.0 21.6. User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. AdjDel/Veh: 0.0 17.4 18.5 52.7 17.4 0.0 0.0 0.0 0.0 25.7 0.0 21.6. LOS by Move: A B B D B A A A C A C. HCM2kAvgQ: 0 7 8 2 12 0 0 0 0 10 0 3. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study
Existing AM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #50 Mortimer St. / 5th St.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.250
 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 8.7
 Optimal Cycle: 0 Level Of Service: A

Street Name: Mortimer St. 5th 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 Stop Sign Stop Sign
 Rights: Include Include Include Include
 Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
 Lanes: 0 0 0 1 0 0 0 1 0 0 0 0 1 0 0 1 0 0 0

Volume Module:
 Base Vol: 0 117 4 3 17 0 166 25 34 5 0 9
 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 Bae: 0 117 4 3 17 0 166 25 34 5 0 9
 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: 0 117 4 3 17 0 166 25 34 5 0 9
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 0 117 4 3 17 0 166 25 34 5 0 9
 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: 0 117 4 3 17 0 166 25 34 5 0 9

Saturation Flow Module:
 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: 0.00 0.97 0.03 0.15 0.85 0.00 1.00 0.42 0.58 0.36 0.00 0.64
 Final Sat.: 0 748 26 111 628 0 663 337 458 290 0 523

Capacity Analysis Module:
 Vol/Sat: xxxx 0.16 0.16 0.03 0.03 xxxx 0.25 0.07 0.07 0.02 xxxx 0.02
 Crit Moves: **** * * * * *
 Delay/Veh: 0.0 8.3 8.3 7.8 7.8 0.0 9.8 7.5 7.5 7.3 0.0 7.3
 Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 AdjDel/Veh: 0.0 8.3 8.3 7.8 7.8 0.0 9.8 7.5 7.5 7.3 0.0 7.3
 LOS by Move: * A A A A * A A A * A
 ApproachDel: 8.3 7.8 9.2 7.3
 Delay Adj: 1.00 1.00 1.00 1.00
 ApprAdjDel: 8.3 7.8 9.2 7.3
 LOS by Appr: A A A A
 AllWayAvgQ: 0.2 0.2 0.2 0.0 0.0 0.0 0.3 0.1 0.1 0.0 0.0 0.0

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

Santa Ana Renaissance Specific Plan Traffic Study
Existing PM Peak Hour Analysis

Scenario Report

Scenario: Exist PM

Command: PM Peak
 Volume: Exist PM
 Geometry: Default Geometry
 Impact Fee: Default Impact Fee
 Trip Generation: Default Trip Generation
 Trip Distribution: Default Trip Distribution
 Paths: Default Path
 Routes: Default Route
 Configuration: Default Configuration

Santa Ana Renaissance Specific Plan Traffic Study
Existing PM Peak Hour Analysis

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ C	Del/ LOS	V/ C	
# 1 Flower St (NS) / Civic Center D	A	xxxxxx 0.662	B	xxxxxx 0.662	+ 0.000 V/C
# 2 Flower St (N/S) / Santa Ana Bl	A	xxxxxx 0.538	A	xxxxxx 0.538	+ 0.000 V/C
# 3 Parton St (E/W) / Santa Ana Bl	A	xxxxxx 0.342	A	xxxxxx 0.342	+ 0.000 V/C
# 4 Ross St (N/S) / Civic Center D	A	xxxxxx 0.436	A	xxxxxx 0.436	+ 0.000 V/C
# 5 Ross St (N/S) / Santa Ana Bl	A	xxxxxx 0.363	A	xxxxxx 0.363	+ 0.000 V/C
# 6 Ross St (N/S) / 4th St (E/W)	B	11.8 0.000	B	11.8 0.000	+ 0.000 D/V
# 7 Broadway (N/S) / Civic Center	A	xxxxxx 0.559	A	xxxxxx 0.559	+ 0.000 V/C
# 8 Broadway (N/S) / Santa Ana Bl	A	xxxxxx 0.466	A	xxxxxx 0.466	+ 0.000 V/C
# 9 Broadway (N/S) / 5th St (E/W)	A	xxxxxx 0.416	A	xxxxxx 0.416	+ 0.000 V/C
# 10 Broadway (N/S) / 4th St (E/W)	A	xxxxxx 0.372	A	xxxxxx 0.372	+ 0.000 V/C
# 11 Broadway (N/S) / 3rd St (E/W)	A	xxxxxx 0.558	A	xxxxxx 0.558	+ 0.000 V/C
# 12 Broadway (N/S) / 1st St (E/W)	B	xxxxxx 0.648	B	xxxxxx 0.648	+ 0.000 V/C
# 13 Sycamore St (N/S) / Civic Cent	A	xxxxxx 0.434	A	xxxxxx 0.434	+ 0.000 V/C
# 14 Sycamore St (N/S) / Santa Ana	C	17.0 0.000	C	17.0 0.000	+ 0.000 D/V
# 15 Sycamore St (N/S) / 5th St (E/	B	12.8 0.000	B	12.8 0.000	+ 0.000 D/V
# 16 Sycamore St (N/S) / 4th St (E/	A	8.3 0.247	A	8.3 0.247	+ 0.000 V/C
# 17 Main St (N/S) / Civic Center D	B	xxxxxx 0.663	B	xxxxxx 0.663	+ 0.000 V/C
# 18 Main St (N/S) / Santa Ana Dr	B	xxxxxx 0.611	B	xxxxxx 0.611	+ 0.000 V/C
# 19 Main St (N/S) / 5th St (E/W)	A	xxxxxx 0.564	A	xxxxxx 0.564	+ 0.000 V/C
# 20 Main St (N/S) / 4th St (E/W)	A	xxxxxx 0.561	A	xxxxxx 0.561	+ 0.000 V/C
# 21 Main St (N/S) / 3rd St (E/W)	A	xxxxxx 0.535	A	xxxxxx 0.535	+ 0.000 V/C
# 22 Main St (N/S) / 1st St (E/W)	C	xxxxxx 0.765	C	xxxxxx 0.765	+ 0.000 V/C
# 23 Bush St (N/S) / Santa Ana Bl	A	xxxxxx 0.365	A	xxxxxx 0.365	+ 0.000 V/C
# 24 Bush St (N/S) / 5th St (E/W)	A	xxxxxx 0.395	A	xxxxxx 0.395	+ 0.000 V/C

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Table with columns: Intersection, Base Del/LOS, V/Veh, Future Del/LOS, V/Veh, Change in. Lists intersections 25-50 with traffic analysis data.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report for Intersection #1. Includes cycle time, loss time, approach, control, and volume module data.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report for Intersection #2. Includes cycle time, loss time, approach, control, and volume module data.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report for Intersection #3. Includes cycle time, loss time, approach, control, and volume module data.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #4 Ross St (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.436
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 21 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #5 Ross St (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.363
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 19 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)
Intersection #6 Ross St (N/S) / 4th St (E/W)
Average Delay (sec/veh): 2.5 Worst Case Level Of Service: B[11.8]
Approach: North Bound South Bound East Bound West Bound
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 0 1 0 1 0 1 0 0 0 0 0 0 1 0 0 0 0 1

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #7 Broadway (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.559
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 26 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #8 Broadway (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.466
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 22 Level Of Service: A
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
Lanes: 1 0 2 0 0 0 0 1 1 0 0 0 1 1 1 0
Volume Module:
Base Vol: 42 624 0 0 597 125 0 0 0 41 754 109
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 Base: 42 624 0 0 597 125 0 0 0 41 754 109
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: 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: 42 624 0 0 597 125 0 0 0 41 754 109
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 42 624 0 0 597 125 0 0 0 41 754 109
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: 42 624 0 0 597 125 0 0 0 41 754 109
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 0.94
Lanes: 1.00 2.00 0.00 0.00 1.65 0.35 0.00 0.00 0.00 0.14 2.50 0.36
Final Sat.: 1598 3400 0 0 2811 589 0 0 0 231 4254 615
Capacity Analysis Module:
Vol/Sat: 0.03 0.18 0.00 0.00 0.21 0.21 0.00 0.00 0.00 0.02 0.18 0.18
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #9 Broadway (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.416
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 21 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Permitted Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 1 0 2 0 0 0 1 1 1 0 0 0 0 0 0
Volume Module:
Base Vol: 0 515 68 78 622 0 173 554 18 0 0 0 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 Base: 0 515 68 78 622 0 173 554 18 0 0 0 0
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: 0 515 68 78 622 0 173 554 18 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 515 68 78 622 0 173 554 18 0 0 0 0
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: 0 515 68 78 622 0 173 554 18 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 0.94 1.00 1.00 0.94 1.00
Lanes: 0.00 1.77 0.23 1.00 2.00 0.00 0.70 2.23 0.07 0.00 0.00 0.00
Final Sat.: 0 3003 397 1598 3400 0 1184 3792 123 0 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.00 0.17 0.17 0.05 0.18 0.00 0.10 0.15 0.15 0.00 0.00 0.00
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #10 Broadway (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.372
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 19 Level Of Service: A
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
Lanes: 1 0 1 1 0 1 0 1 1 0 0 0 1 1 0 0
Volume Module:
Base Vol: 18 463 88 24 537 21 45 98 28 46 119 37
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 Base: 18 463 88 24 537 21 45 98 28 46 119 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: 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: 18 463 88 24 537 21 45 98 28 46 119 37
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 18 463 88 24 537 21 45 98 28 46 119 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: 18 463 88 24 537 21 45 98 28 46 119 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 1.00 1.00 1.00 0.94 1.00 1.00
Lanes: 1.00 1.68 0.32 1.00 1.92 0.08 0.26 0.58 0.16 0.23 0.59 0.18
Final Sat.: 1598 2857 543 1598 3272 128 447 974 278 387 1001 311
Capacity Analysis Module:
Vol/Sat: 0.01 0.16 0.16 0.02 0.16 0.16 0.03 0.10 0.10 0.03 0.12 0.12
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #11 Broadway (N/S) / 3rd St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.558
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 26 Level Of Service: A
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
Lanes: 1 0 0 1 0 1 0 1 0 1 1 0 0 1 0 0 1 0
Volume Module:
Base Vol: 51 534 44 49 509 41 36 104 20 17 136 59
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 Base: 51 534 44 49 509 41 36 104 20 17 136 59
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: 51 534 44 49 509 41 36 104 20 17 136 59
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 51 534 44 49 509 41 36 104 20 17 136 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: 51 534 44 49 509 41 36 104 20 17 136 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 0.94 1.00 1.00 0.94 1.00 1.00 0.94 1.00
Lanes: 1.00 0.92 0.08 1.00 1.00 1.00 1.00 0.84 0.16 1.00 0.70 0.30
Final Sat.: 1598 1571 129 1598 1700 1598 1598 1426 274 1598 1186 514
Capacity Analysis Module:
Vol/Sat: 0.03 0.34 0.34 0.03 0.30 0.03 0.02 0.07 0.07 0.01 0.11 0.11
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative). Intersection #12 Broadway (N/S) / 1st St (E/W). Cycle (sec): 100. Critical Vol./Cap.(X): 0.648. Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative). Intersection #13 Sycamore St (N/S) / Civic Center Dr (E/W). Cycle (sec): 100. Critical Vol./Cap.(X): 0.434. Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Base Volume Alternative). Intersection #14 Sycamore St (N/S) / Santa Ana Bl (E/W). Average Delay (sec/veh): 4.1. Worst Case Level Of Service: C[17.0]. Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Base Volume Alternative). Intersection #15 Sycamore St (N/S) / 5th St (E/W). Average Delay (sec/veh): 3.1. Worst Case Level Of Service: B[12.8]. Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis. Level Of Service Computation Report. 2000 HCM 4-Way Stop Method (Base Volume Alternative). Intersection #16 Sycamore St (N/S) / 4th St (E/W). Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative). Intersection #17 Main St (N/S) / Civic Center Dr (E/W). Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative). Intersection #18 Main St (N/S) / Santa Ana Dr (E/W). Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative). Intersection #19 Main St (N/S) / 5th St (E/W). Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #20 Main St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.561
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 27 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 0 0 1 1 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0
Volume Module:
Base Vol: 0 1124 50 0 1072 46 0 126 45 0 222 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 Base: 0 1124 50 0 1072 46 0 126 45 0 222 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: 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: 0 1124 50 0 1072 46 0 126 45 0 222 60
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1124 50 0 1072 46 0 126 45 0 222 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: 0 1124 50 0 1072 46 0 126 45 0 222 60
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: 0.00 1.91 0.09 0.00 1.92 0.08 0.00 0.74 0.26 0.00 0.79 0.21
Final Sat.: 0 3255 145 0 3260 140 0 1253 447 0 1338 362
Capacity Analysis Module:
Vol/Sat: 0.00 0.35 0.35 0.00 0.33 0.33 0.00 0.10 0.10 0.00 0.17 0.17
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #21 Main St (N/S) / 3rd St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.535
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 25 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0 1 1 0 0
Volume Module:
Base Vol: 0 1096 40 0 1080 52 42 149 39 37 177 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 Base: 0 1096 40 0 1080 52 42 149 39 37 177 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: 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: 0 1096 40 0 1080 52 42 149 39 37 177 36
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1096 40 0 1080 52 42 149 39 37 177 36
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 1096 40 0 1080 52 42 149 39 37 177 36
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: 0.00 1.93 0.07 0.00 1.91 0.09 1.00 0.79 0.21 1.00 0.83 0.17
Final Sat.: 0 3280 120 0 3244 156 1598 1347 353 1598 1413 287
Capacity Analysis Module:
Vol/Sat: 0.00 0.33 0.33 0.00 0.33 0.33 0.03 0.11 0.11 0.02 0.13 0.13
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #22 Main St (N/S) / 1st St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.765
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 46 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 1 0 1 1 0 1 0 2 0 1 1 0 2 1 0 1 0 2 1 0 1 0 2 1 0
Volume Module:
Base Vol: 194 913 80 172 808 141 156 944 86 104 1039 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 Base: 194 913 80 172 808 141 156 944 86 104 1039 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: 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: 194 913 80 172 808 141 156 944 86 104 1039 70
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 194 913 80 172 808 141 156 944 86 104 1039 70
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: 194 913 80 172 808 141 156 944 86 104 1039 70
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 0.94 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 1.00 1.84 0.16 1.00 2.00 1.00 1.00 2.75 0.25 1.00 2.81 0.19
Final Sat.: 1598 3126 274 1598 3400 1598 1598 4674 426 1598 4778 322
Capacity Analysis Module:
Vol/Sat: 0.12 0.29 0.29 0.11 0.24 0.09 0.10 0.20 0.20 0.07 0.22 0.22
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #23 Bush St (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.365
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 19 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 1 0 1 0 0 0 0 0 1 0 0 0 0 0 0 1 1 1 0 0 1 1 1 0
Volume Module:
Base Vol: 39 293 0 0 192 33 0 0 0 0 31 641 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 Base: 39 293 0 0 192 33 0 0 0 0 31 641 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: 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: 39 293 0 0 192 33 0 0 0 0 31 641 57
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 39 293 0 0 192 33 0 0 0 0 31 641 57
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: 39 293 0 0 192 33 0 0 0 0 31 641 57
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00
Lanes: 1.00 1.00 0.00 0.00 0.85 0.15 0.00 0.00 0.00 0.13 2.64 0.23
Final Sat.: 1598 1700 0 0 1451 249 0 0 0 0 217 4484 399
Capacity Analysis Module:
Vol/Sat: 0.02 0.17 0.00 0.00 0.13 0.13 0.00 0.00 0.00 0.02 0.14 0.14
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU l(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #24 Bush St (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.395
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU l(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #25 Bush St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.394
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)
Intersection #26 Spurgeon St (N/S) / 1st St (E/W)
Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B [12.8]
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 0 0 0 0 0 1 0 0 3 0 0 0 0 2 1 0 0

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)
Intersection #27 French St (N/S) / Santa Ana Bl (E/W)
Average Delay (sec/veh): 3.8 Worst Case Level Of Service: C [15.6]
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 1 0

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative) Intersection #28 French St (N/S) / 4th St (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.393 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 20 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative) Intersection #29 Lacy St (N/S) / Civic Center Dr (E/W) Average Delay (sec/veh): 2.3 Worst Case Level Of Service: C[16.8] Approach: North Bound South Bound East Bound West Bound

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative) Intersection #30 Lacy at (N/S) / Santa Ana Bl (E/W) Average Delay (sec/veh): 2.9 Worst Case Level Of Service: D[33.4] Approach: North Bound South Bound East Bound West Bound

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis Level Of Service Computation Report 2000 HCM 4-Way Stop Method (Base Volume Alternative) Intersection #31 Lacy St (N/S) / Brown St (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.192 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 7.7 Optimal Cycle: 20 Level Of Service: C

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative) Intersection #32 Lacy St (N/S) / 4th St (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.486 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 23 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis Level Of Service Computation Report 2000 HCM Unsignalized Method (Base Volume Alternative) Intersection #33 Lacy St (N/S) / 1st St (E/W) Average Delay (sec/veh): 2.0 Worst Case Level of Service: C [23.2] Approach: North Bound South Bound East Bound West Bound

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis Level Of Service Computation Report 2000 HCM 4-Way Stop Method (Base Volume Alternative) Intersection #34 Santiago St (N/S) / Washington Av (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.788 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 18.1 Optimal Cycle: 100 Level Of Service: C

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis Level Of Service Computation Report 2000 HCM 4-Way Stop Method (Base Volume Alternative) Intersection #35 Santiago St (N/S) / Civic Center Dr (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.639 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 17.4 Optimal Cycle: 100 Level Of Service: C

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #36 Santiago St (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.579
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 28 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 1 0 1 0 1 0 1 0 1 0 2 0 1
Volume Module:
Base Vol: 32 90 70 306 179 99 59 687 48 109 601 278
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 Base: 32 90 70 306 179 99 59 687 48 109 601 278
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: 32 90 70 306 179 99 59 687 48 109 601 278
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 32 90 70 306 179 99 59 687 48 109 601 278
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: 32 90 70 306 179 99 59 687 48 109 601 278
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.87 0.13 1.00 2.00 1.00
Final Sat.: 1598 1700 1598 1598 1700 1598 1598 3178 222 1598 3400 1598
Capacity Analysis Module:
Vol/Sat: 0.02 0.05 0.04 0.19 0.11 0.06 0.04 0.22 0.22 0.07 0.18 0.17
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #40 Standard Av (N/S) / 1st St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.719
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 39 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 1 0 0 1 0 0 1 1 0 1 0 1 1 0
Volume Module:
Base Vol: 184 285 135 17 224 25 78 1076 76 93 1106 11
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 Base: 184 285 135 17 224 25 78 1076 76 93 1106 11
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: 184 285 135 17 224 25 78 1076 76 93 1106 11
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 184 285 135 17 224 25 78 1076 76 93 1106 11
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: 184 285 135 17 224 25 78 1076 76 93 1106 11
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 1.00 1.00 0.94 1.00 1.00 0.94 1.00 1.00 1.00
Lanes: 1.00 0.68 0.32 0.06 0.85 0.09 1.00 1.87 0.13 1.00 1.98 0.02
Final Sat.: 1598 1154 546 109 1432 160 1598 3176 224 1598 3367 33
Capacity Analysis Module:
Vol/Sat: 0.12 0.25 0.25 0.01 0.16 0.16 0.05 0.34 0.34 0.06 0.33 0.33
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #42 Grand Av (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.888
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 80 Level Of Service: D
Approach: North Bound South Bound East Bound West Bound
Control: Split Phase Split Phase Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 1 0 2 1 0 1 0 2 0 2 2 0 1 0 2 0 1 0 1 0
Volume Module:
Base Vol: 231 1853 12 48 880 610 286 107 398 39 191 74
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 Base: 231 1853 12 48 880 610 286 107 398 39 191 74
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: 231 1853 12 48 880 610 286 107 398 39 191 74
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 231 1853 12 48 880 610 286 107 398 39 191 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: 231 1853 12 48 880 610 286 107 398 39 191 74
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 0.94 1.00 1.00 0.94
Lanes: 1.00 2.98 0.02 1.00 2.00 2.00 2.00 1.00 2.00 0.26 1.25 0.49
Final Sat.: 1598 5067 33 1598 3400 3196 3196 1700 3196 436 2136 828
Capacity Analysis Module:
Vol/Sat: 0.14 0.37 0.37 0.03 0.26 0.19 0.09 0.06 0.12 0.09 0.09 0.09
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #43 Grand Av (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.717
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 39 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 1 0 2 0 1 1 0 2 0 1 1 0 1 1 0 2 0 1 0
Volume Module:
Base Vol: 146 1051 47 98 753 80 162 495 80 204 666 131
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 Base: 146 1051 47 98 753 80 162 495 80 204 666 131
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: 146 1051 47 98 753 80 162 495 80 204 666 131
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 146 1051 47 98 753 80 162 495 80 204 666 131
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: 146 1051 47 98 753 80 162 495 80 204 666 131
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94
Lanes: 1.00 2.00 1.00 1.00 2.00 1.00 1.00 1.72 0.28 1.00 2.00 1.00
Final Sat.: 1598 3400 1598 1598 3400 1598 1598 2927 473 1598 3400 1598
Capacity Analysis Module:
Vol/Sat: 0.09 0.31 0.03 0.06 0.22 0.05 0.10 0.17 0.17 0.13 0.20 0.08
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Base Volume Alternative)
Intersection #44 Grand Av (N/S) / 1st St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.808
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 54 Level Of Service: D
Approach: North Bound South Bound East Bound West Bound
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 2 0 1 1 0 2 0 1 2 0 2 1 0 2 0 1 1 0
Volume Module:
Base Vol: 119 1261 57 95 966 85 179 985 111 142 883 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 Base: 119 1261 57 95 966 85 179 985 111 142 883 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: 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: 119 1261 57 95 966 85 179 985 111 142 883 42
Reduct Vol: 0
Reduced Vol: 119 1261 57 95 966 85 179 985 111 142 883 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: 119 1261 57 95 966 85 179 985 111 142 883 42
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 1.00 2.00 1.00 1.00 2.00 1.00 2.00 2.70 0.30 2.00 1.91 0.09
Final Sat.: 1598 3400 1598 1598 3400 1598 3196 4583 517 3196 3246 154
Capacity Analysis Module:
Vol/Sat: 0.07 0.37 0.04 0.06 0.28 0.05 0.06 0.21 0.21 0.04 0.27 0.27
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)
Intersection #45 Penn Way (NS) at I-5 SB Ramps (EW)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.370
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 21.6
Optimal Cycle: 34 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Split Phase Split Phase Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 2 0 1 2 0 2 0 0 0 0 0 0 0 0 1 0 0 0 2
Volume Module:PM Peak
Base Vol: 0 173 134 547 64 0 0 0 0 0 126 0 234
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 Base: 0 173 134 547 64 0 0 0 0 0 126 0 234
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: 0 173 134 547 64 0 0 0 0 0 126 0 234
Reduct Vol: 0
Reduced Vol: 0 173 134 547 64 0 0 0 0 0 126 0 234
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: 0 173 134 547 64 0 0 0 0 0 126 0 234
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.95 0.85 0.92 0.95 1.00 1.00 1.00 1.00 0.77 1.00 0.75
Lanes: 0.00 2.00 1.00 2.00 2.00 0.00 0.00 0.00 0.00 1.00 0.00 2.00
Final Sat.: 0 3610 1615 3502 3610 0 0 0 0 1461 0 2842
Capacity Analysis Module:
Vol/Sat: 0.00 0.05 0.08 0.16 0.02 0.00 0.00 0.00 0.00 0.09 0.00 0.08
Crit Moves: ****
Green/Cycle: 0.00 0.22 0.22 0.42 0.42 0.00 0.00 0.00 0.00 0.23 0.00 0.66
Volume/Cap: 0.00 0.21 0.37 0.37 0.04 0.00 0.00 0.00 0.00 0.37 0.00 0.13
Delay/Veh: 0.0 31.7 33.4 19.9 17.0 0.0 0.0 0.0 0.0 32.9 0.0 6.5
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 31.7 33.4 19.9 17.0 0.0 0.0 0.0 0.0 32.9 0.0 6.5
LOS by Move: A C C B B A A A A C A A
HCM2kAvqQ: 0 2 4 6 1 0 0 0 0 0 4 0 2
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)
Intersection #46 I-5 SB Ramps (NS) / Santa Ana Bl (EW)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.450
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 27.4
Optimal Cycle: 38 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Split Phase Split Phase Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 0 0 0 2 0 0 0 1 2 0 3 0 0 0 0 0 2 1 0
Volume Module:PM Peak
Base Vol: 0 0 0 268 0 131 361 631 0 0 755 215
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 Base: 0 0 0 268 0 131 361 631 0 0 755 215
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: 0 0 0 268 0 131 361 631 0 0 755 215
Reduct Vol: 0
Reduced Vol: 0 0 0 268 0 131 361 631 0 0 755 215
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: 0 0 0 268 0 131 361 631 0 0 755 215
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.92 1.00 0.85 0.92 0.91 1.00 1.00 0.88 0.88
Lanes: 0.00 0.00 0.00 2.00 0.00 1.00 2.00 3.00 0.00 0.00 2.34 0.66
Final Sat.: 0 0 0 3502 0 1615 3502 5187 0 0 3904 1112
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.08 0.00 0.08 0.10 0.12 0.00 0.00 0.19 0.19
Crit Moves: ****
Green/Cycle: 0.00 0.00 0.00 0.18 0.00 0.18 0.27 0.27 0.00 0.00 0.43 0.43
Volume/Cap: 0.00 0.00 0.00 0.42 0.00 0.45 0.38 0.45 0.00 0.00 0.45 0.45
Delay/Veh: 0.0 0.0 0.0 36.9 0.0 37.7 29.9 30.5 0.0 0.0 20.3 20.3
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 0.0 0.0 36.9 0.0 37.7 29.9 30.5 0.0 0.0 20.3 20.3
LOS by Move: A A A D A D C C A A C C
HCM2kAvqQ: 0 0 0 4 0 4 5 6 0 0 8 8
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)
Intersection #47 I-5 NB Ramps (NS) / 17th St. (EW)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.851
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 32.3
Optimal Cycle: 38 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Split Phase Split Phase Protected Protected
Rights: Include Include Ignore Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 1 0 0 1 1 0 0 0 1 1 0 3 0 1 0 0 0 2 1 0
Volume Module:
Base Vol: 730 67 26 107 0 108 129 1118 294 0 1752 87
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 Base: 730 67 26 107 0 108 129 1118 294 0 1752 87
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: 730 67 26 107 0 108 129 1118 0 0 1752 87
Reduct Vol: 0
Reduced Vol: 730 67 26 107 0 108 129 1118 0 0 1752 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: 730 67 26 107 0 108 129 1118 0 0 1752 87
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.96 0.96 0.85 0.95 1.00 0.85 0.95 0.91 1.00 1.00 0.90 0.90
Lanes: 1.83 0.17 1.00 1.00 0.00 1.00 1.00 3.00 1.00 0.00 2.86 0.14
Final Sat.: 3327 305 1615 1805 0 1615 1805 5187 1900 0 4907 244
Capacity Analysis Module:
Vol/Sat: 0.22 0.22 0.02 0.06 0.00 0.07 0.07 0.22 0.00 0.00 0.36 0.36
Crit Moves: ****
Green/Cycle: 0.26 0.26 0.26 0.08 0.00 0.08 0.08 0.50 0.00 0.00 0.42 0.42
Volume/Cap: 0.85 0.85 0.06 0.75 0.00 0.85 0.85 0.43 0.00 0.00 0.85 0.85
Delay/Veh: 42.8 42.8 28.1 65.4 0.0 84.5 79.4 15.8 0.0 0.0 29.6 29.6
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 42.8 42.8 28.1 65.4 0.0 84.5 79.4 15.8 0.0 0.0 29.6 29.6
LOS by Move: D D C E A F E B A A C C
HCM2kAvqQ: 14 14 1 5 0 6 6 8 0 0 21 21
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)
Intersection #48 I-5 NB Ramps (NS) / Grand Ave (EW)
Cycle (sec): 100 Critical Vol./Cap.(X): 1.119
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 62.3
Optimal Cycle: 100 Level Of Service: E
Approach: North Bound South Bound East Bound West Bound
Control: Protected Protected Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 2 0 1 1 0 3 0 0 0 0 0 0 0 0 2 0 0 0 1
Volume Module: PM Peak
Base Vol: 0 1786 571 40 1051 0 0 0 0 514 0 755
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 Base: 0 1786 571 40 1051 0 0 0 514 0 755
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 Volume: 0 1786 571 40 1051 0 0 0 514 0 755
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1786 571 40 1051 0 0 0 514 0 755
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 1786 571 40 1051 0 0 0 514 0 755
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.95 0.85 0.95 0.91 1.00 1.00 1.00 1.00 0.92 1.00 0.85
Lanes: 0.00 2.00 1.00 1.00 3.00 0.00 0.00 0.00 0.00 2.00 0.00 1.00
Final Sat.: 0 3610 1615 1805 5187 0 0 0 3502 0 1615
Capacity Analysis Module:
Vol/Sat: 0.00 0.49 0.35 0.02 0.20 0.00 0.00 0.00 0.00 0.15 0.00 0.47
Crit Moves: ****
Green/Cycle: 0.00 0.44 0.44 0.02 0.46 0.00 0.00 0.00 0.00 0.42 0.00 0.42
Volume/Cap: 0.00 1.12 0.80 1.12 0.44 0.00 0.00 0.00 0.00 0.35 0.00 1.12
Delay/Veh: 0.0 90.4 30.4 237.1 18.3 0.0 0.0 0.0 0.0 20.0 0.0 101.1
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 90.4 30.4 237.1 18.3 0.0 0.0 0.0 0.0 20.0 0.0 101.1
LOS by Move: A F C F B A A A C A F
HCM2kAvgQ: 0 45 17 4 8 0 0 0 0 6 0 37
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)
Intersection #49 Mortimer St. / Santa Ana Blvd
Average Delay (sec/veh): 7.6 Worst Case Level Of Service: Bf 15.0]
Street Name: Mortimer St. Santa Ana Blvd
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 1 1 0 0 0 0 1 1 0 0 1 0 0 1 0
Volume Module:
Base Vol: 1 0 507 1 0 2 0 0 0 0 41 435 6
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 Base: 1 0 507 1 0 2 0 0 0 0 41 435 6
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 Volume: 1 0 507 1 0 2 0 0 0 0 41 435 6
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 1 0 507 1 0 2 0 0 0 0 41 435 6
Critical Gap Module:
Critical Gap: 7.1 6.5 6.2 7.1 6.5 6.2 xxxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx
Capacity Module:
Conflict Vol: 521 523 0 520 520 438 xxxxx xxxxx xxxxxx 0 xxxxx xxxxxx
Potent Cap.: 469 462 900 470 463 623 xxxxx xxxxx xxxxxx 900 xxxxx xxxxxx
Move Cap.: 451 441 900 198 442 623 xxxxx xxxxx xxxxxx 900 xxxxx xxxxxx
Volume/Cap: 0.00 0.00 0.56 0.01 0.00 0.00 xxxxx xxxxx xxxxx 0.05 xxxxx xxxxx
Level Of Service Module:
ZWay95thQ: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx
Control Del: xxxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 9.2 xxxxx xxxxxx
LOS by Move: *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx 898 xxxxxx xxxxx 363 xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
SharedQueue: xxxxxx 3.6 xxxxxx xxxxxx 0.0 xxxxxx xxxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shrd ConDel: xxxxxx 14.1 xxxxxx xxxxxx 15.0 xxxxxx xxxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: * B * * B * * B *
ApproachDel: 14.1 * * B *
ApproachLOS: B B *
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study Existing PM Peak Hour Analysis

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)
Intersection #50 Mortimer St. / 5th St.
Cycle (sec): 100 Critical Vol./Cap.(X): 0.715
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 15.5
Optimal Cycle: 100 Level Of Service: C
Street Name: Mortimer St. 5th 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 Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 0 1 0 0 1 0 0 0 1 0 0 1 0 0 0 0 1 0 0 0
Volume Module:
Base Vol: 0 170 5 5 27 0 454 81 48 10 0 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 Base: 0 170 5 5 27 0 454 81 48 10 0 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 Volume: 0 170 5 5 27 0 454 81 48 10 0 43
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 170 5 5 27 0 454 81 48 10 0 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 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 1.00
FinalVolume: 0 170 5 5 27 0 454 81 48 10 0 43
Saturation Flow Module:
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 1.00
Lanes: 0.00 0.97 0.03 0.16 0.84 0.00 1.00 0.63 0.37 0.19 0.00 0.81
Final Sat.: 0 608 18 91 489 0 635 461 273 134 0 577
Capacity Analysis Module:
Vol/Sat: xxxxx 0.28 0.28 0.06 0.06 xxxxx 0.72 0.18 0.18 0.07 xxxxx 0.07
Crit Moves: ****
Delay/Veh: 0.0 10.4 10.4 9.0 9.0 0.0 20.8 8.6 8.6 8.2 0.0 8.2
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 10.4 10.4 9.0 9.0 0.0 20.8 8.6 8.6 8.2 0.0 8.2
LOS by Move: * B B A A * C A A A * A
ApproachDel: 10.4 9.0 18.1 18.1 8.2
Delay Adj: 1.00 1.00 1.00 1.00
ApprAdjDel: 10.4 9.0 18.1 8.2
LOS by Appr: B A C A
AllWayAvgQ: 0.3 0.3 0.3 0.0 0.0 0.0 2.2 0.2 0.2 0.1 0.1 0.1
Note: Queue reported is the number of cars per lane.

APPENDIX C
Signal Warrant Worksheets

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project PM

Peak Hour Delay Signal Warrant Report

Intersection #30 Lacy st (N/S) / Santa Ana Bl (E/W)

Future Volume Alternative: Peak Hour Warrant Met

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		
Lanes:	0	0	1	0	0	1	0	0	1	0	1	0
Initial Vol:	20	49	25	39	62	17	3	890	9	79	847	14
ApproachDel:	xxxxxx			1548.1			xxxxxx			xxxxxx		

Approach[northbound] [lanes=1] [control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=OVERFLOW]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=94]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4] [total volume=2054]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound] [lanes=1] [control=Stop Sign]
Signal Warrant Rule #1: [vehicle-hours=50.7]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=118]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4] [total volume=2054]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project PM

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #30 Lacy st (N/S) / Santa Ana Bl (E/W)

Future Volume Alternative: Peak Hour Warrant Met

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		
Lanes:	0	0	1	0	0	1	0	0	1	0	1	0
Initial Vol:	20	49	25	39	62	17	3	890	9	79	847	14

Major Street Volume: 1842
Minor Approach Volume: 118
Minor Approach Volume Threshold: 74 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project PM

Peak Hour Delay Signal Warrant Report

Intersection #33 Lacy St (N/S) / 1st St (E/W)

Future Volume Alternative: Peak Hour Warrant Met

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
Lanes:	0 0 1 0 0	0 0 1 0 0	1 0 3 0 0	0 0 2 1 0
Initial Vol:	0 2 0	11 1 151	216 1757 0	0 1817 47
ApproachDel:	6092.4	xxxxxx	xxxxxx	xxxxxx

Approach[northbound][lanes=1][control=Stop Sign]
 Signal Warrant Rule #1: [vehicle-hours=3.4]
 FAIL - Vehicle-hours less than 4 for one lane approach.
 Signal Warrant Rule #2: [approach volume=2]
 FAIL - Approach volume less than 100 for one lane approach.
 Signal Warrant Rule #3: [approach count=4][total volume=4002]
 SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop Sign]
 Signal Warrant Rule #1: [vehicle-hours=OVERFLOW]
 SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
 Signal Warrant Rule #2: [approach volume=163]
 SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
 Signal Warrant Rule #3: [approach count=4][total volume=4002]
 SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

SIGNAL WARRANT DISCLAIMER
 This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project PM

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #33 Lacy St (N/S) / 1st St (E/W)

Future Volume Alternative: Peak Hour Warrant Met

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
Lanes:	0 0 1 0 0	0 0 1 0 0	1 0 3 0 0	0 0 2 1 0
Initial Vol:	0 2 0	11 1 151	216 1757 0	0 1817 47

Major Street Volume: 3837
 Minor Approach Volume: 163
 Minor Approach Volume Threshold: -178 [less than minimum of 100]

SIGNAL WARRANT DISCLAIMER
 This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project PM

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #34 Santiago St (N/S) / Washington Av (E/W)

Future Volume Alternative: Peak Hour Warrant Met

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			Stop Sign			Stop Sign		
Lanes:	1	0	1	0	1	0	1	0	1	0	0	1
Initial Vol:	96	591	248	30	539	155	333	222	49	103	171	46
Major Street Volume:	1659											
Minor Approach Volume:	604											
Minor Approach Volume Threshold:	110											

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project PM

Peak Hour Volume Signal Warrant Report [Urban]

Intersection #35 Santiago St (N/S) / Civic Center Dr (E/W)

Future Volume Alternative: Peak Hour Warrant Met

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			Stop Sign			Stop Sign		
Lanes:	1	0	0	1	0	0	0	1	0	0	0	1
Initial Vol:	265	719	61	26	666	179	375	68	500	58	42	21
Major Street Volume:	1916											
Minor Approach Volume:	943											
Minor Approach Volume Threshold:	94 [less than minimum of 150]											

SIGNAL WARRANT DISCLAIMER

This peak hour signal warrant analysis should be considered solely as an "indicator" of the likelihood of an unsignalized intersection warranting a traffic signal in the future. Intersections that exceed this warrant are probably more likely to meet one or more of the other volume based signal warrant (such as the 4-hour or 8-hour warrants).

The peak hour warrant analysis in this report is not intended to replace a rigorous and complete traffic signal warrant analysis by the responsible jurisdiction. Consideration of the other signal warrants, which is beyond the scope of this software, may yield different results.

APPENDIX D
Cumulative Projects Related Information

TABLE I

Trip Generation Rate for Cumulative Projects

Proj. Id	Project Name	Land Use Description	ITE Code	Quantity	Unit	Daily	AM Total	AM In	AM Out	PM Total	PM In	PM Out
		Office	710	508.2	TSF				By Formula (1)			
1	One Broadway Plaza	Office (Rehab Structures)	710	9.803	TSF	11.01	1.00	0.88	0.12	1.00	0.17	0.83
		Retail	814	8.525	TSF	44.32	6.84	3.28	3.56	5.02	2.81	2.21
		Casual Dining	932	2.681	TSF	127.15	11.52	5.99	5.53	10.92	6.66	4.26
		Formal Dining	931	15.915	TSF	89.95	0.81	0.54	0.27	7.49	5.02	2.47
3	Santiago Street Lofts	Proposed Live-work Loft (Apartment)	220	108	DU	6.72	0.51	0.1	0.41	0.62	0.4	0.22
		Existing Manufacture ⁵	140	-2.1	TSF	3.82	0.73	0.56	0.17	0.74	0.27	0.47
		Existing out-reach Educational (R&D) ⁵	760	-19	TSF	8.11	1.24	1.03	0.21	1.08	0.16	0.92
10	Bower's Museum	Museum Expansion		33.1	TSF	Data used is from the traffic impact study, which didn't specify the ITE Code)						
15	Walgreen's	Proposed Shopping Center	820	12.4	TSF	42.94	1.03	0.63	0.4	3.75	1.8	1.95
19	Cobblesstone	Shopping Center	820	11	TSF	42.94	1.03	0.63	0.4	3.75	1.8	1.95
23	Xerox Tower II	General Office Building	710	210	TSF	11.01	1.00	0.88	0.12	1.00	0.17	0.83
27	Ist & Cabrillo Towers	High Rise Resid. Condo/Townhouse	232	374	DU	4.18	0.34	0.065	0.275	0.38	0.236	0.144
		Health / Fitness Club ⁵	492	-5.5	TSF	32.93	1.21	0.51	0.7	4.05	2.07	1.98
26	Metro East Overlay Zone	High Rise Resid. Condo/Townhouse	232	5.551	DU	4.18	0.34	0.06	0.28	0.38	0.24	0.14
		Specialty Retail Center (AM ⁶)	814	1275.44	TSF	44.32	1.76	0.99	0.77	2.71	1.19	1.52
		General Office Building	710	3410.51	TSF	11.01	1.00	0.88	0.12	1.00	0.17	0.83
		Shopping Center ⁵	820	-65.96	TSF	42.94	1.03	0.63	0.4	3.75	1.8	1.95
		General Office Building ⁵	710	-2720.17	TSF	11.01	1	0.88	0.12	1	0.17	0.83
		Motel ⁵	320	-180	ROOMS	5.63	0.45	0.17	0.28	0.47	0.25	0.22
		Automobile Part-Sales ⁵	843	-49.96	TSF	61.91	2.21	1.13	1.08	5.98	2.93	3.05
		Medical-Dental Office ⁵	720	-40.85	TSF	36.13	2.48	1.96	0.52	3.72	1	2.72
33	Olen Properties	Nursing Home ⁵	620	-99	BEDS	2.37	0.17	0.09	0.08	0.22	0.07	0.15
		General Office Building	710	2.5	TSF	11.01	1.00	0.88	0.12	1.00	0.17	0.83
13	Santa Ana Industrial	General Light Industrial	110	31	TSF	6.97	0.92	0.81	0.11	0.98	0.12	0.86
29	Town & Country Manor	Residential Condo/Townhouse	230	174	DU	5.86	0.44	0.07	0.37	0.52	0.35	0.17
5	City Place	Residential Condo/Townhouse	230	185	DU	5.86	0.44	0.07	0.37	0.52	0.35	0.17
		Shopping Center	820	60	TSF	42.94	1.03	0.63	0.4	3.75	1.8	1.95
34	River View Villas	Residential Condo/Townhouse	230	41	DU	5.86	0.44	0.07	0.37	0.52	0.35	0.17
37	City Place Sky Lofts	Apartment	220	355	DU	9.57	0.51	0.1	0.41	0.62	0.4	0.22
25	Shea Homes	Single Family Detached	210	36	DU	9.57	0.75	0.19	0.56	1.01	0.64	0.37
39	Retail (Tustin)	Replacement of Commercial buidng	820	15	TSF	42.94	1.03	0.63	0.4	3.75	1.8	1.95

J:\2009\A93181_SA Renaissance TIS Revision\Analysis\Trip Generation\TripGenCumulative.xls]REV TripGen

TABLE 2

Total Trip Generation for Cumulative Projects

Proj. Id	Project Name	Land Use Description	ITE Code	Quantity	Unit	Daily	AM Total	AM In	Out	PM Total	PM In	PM Out
1	One Broadway Plaza	Office	710	508.2	TSF	4,625	681	600	82	649	110	539
		Office (Rehab Structures)	710	9,803	TSF	108	10	9	1	10	2	8
		Retail ²	814	8,525	TSF	378	58	28	30	43	24	19
		Casual Dining ³	932	2,681	TSF	341	31	16	15	29	18	11
		Formal Dining ⁴	931	15,915	TSF	1,432	13	9	4	119	80	39
		Subtotal				6,884	793	661	132	850	234	616
3	Santiago Street Lofts	Proposed Live-work Loft (Apartment)	220	108	DU	726	55	11	44	67	43	24
		Existing Manufacture ⁵	140	2.1	TSF	-8	-2	-1	0	-2	-1	-1
		Existing out-reach Educational (R&D) ⁵	760	19	TSF	-154	-24	-20	-4	-21	-3	-17
		Subtotal				564	30	-10	41	45	40	5
10	Bower's Museum	Museum Expansion	443	33.1	TSF	560	0	0	0	143	13	130
15	Walgreen's	Proposed Shopping Center	820	12.4	TSF	532	13	8	5	47	22	24
19	Cobblesstone	Shopping Center	820	11	TSF	472	11	7	4	41	20	21
23	Xerox Tower II	General Office Building	710	210	TSF	2,312	210	185	25	210	36	174
27	1st & Cabrillo Towers	High Rise Resid. Condo/Townhouse	232	374	DU	1,563	127	24	103	142	88	54
		Specialty Retail Center	814	8.97	TSF	398	16	9	7	24	11	14
		Health / Fitness Club ⁵	492	-5.5	TSF	-181	-7	-3	-4	-22	-11	-11
		Subtotal				1,780	136	30	106	144	88	57
		Internal Trip Capture (5%)				-89	-7	-2	-5	-7	-4	-3
		Net Project Vehicle Trip				1,691	129	29	101	137	83	54
26	Metro East Overlay Zone	High Rise Resid. Condo/Townhouse	232	5,551	DU	23,203	1,887	333	1,554	2,109	1,332	777
		Specialty Retail Center	814	1,275.44	TSF	54,767	1,314	802	512	4,783	2,296	2,487
		General Office Building	710	3,410.51	TSF	37,550	3,411	3,001	409	3,411	580	2,831
		Shopping Center ⁵	820	-65.96	TSF	-2,832	-68	-42	-26	-247	-119	-129
		General Office Building ⁵	710	-2,720.17	TSF	-29,949	-2,720	-2,394	-326	-2,720	-462	-2,258
		Motel ⁵	320	-180	ROOMS	-1,013	-81	-31	-50	-85	-45	-40
		Automobile Part-Sales ⁵	843	-49.96	TSF	-3,093	-110	-56	-54	-299	-146	-152
		Medical-Dental Office ⁵	720	-40.85	TSF	-1,476	-101	-80	-21	-152	-41	-111
		Nursing Home ⁵	620	-99	BEDS	-235	-17	-9	-8	-22	-7	-15
				Subtotal			76,922	3,514	1,525	1,989	6,778	3,388	3,391
		Internal Trip Capture (5%)			-9,232	-661	-545	-116	-988	-316	-672	
		Net Project Vehicle Trip			67,690	2,853	980	1,873	5,790	3,072	2,719	
33	Olen Properties	General Office Building	710	2.5	TSF	28	3	2	0	3	0	2
		Subtotal				28	3	2	0	3	0	2
13	Santa Ana Industrial	General Light Industrial	110	31	TSF	216	29	25	3	30	4	27
29	Town & Country Manor	Residential Condo/Townhouse	230	174	DU	1,020	77	12	64	90	61	30
5	City Place	Residential Condo/Townhouse	230	185	DU	1,084	81	13	68	96	65	31
		Shopping Center	820	60	TSF	2,576	62	38	24	225	108	117
		Subtotal				3,661	143	51	92	321	173	148
34	River View Villas	Residential Condo/Townhouse	230	41	DU	240	18	3	15	21	14	7
37	City Place Sky Lofts	Apartment	220	355	DU	3,397	181	36	146	220	142	78
25	Shea Homes	Single Family Detached	210	36	DU	345	27	7	20	36	23	13
39	Retail (Tustin)	Replacement of Commercial buiding	820	15	TSF	644	15	9	6	56	27	29
Project Trips (Proposed - Existing)						90,261	4,533	2,004	2,529	8,042	3,964	4,079

Note:

- ² ITE Trip Generation does not have AM rate for peak hour of adjacent traffic for specialty retail. Instead, PM rates with 50/50 directional split were used.
- ³ Trip Generation rates for high-turnover restaurant assume 50 percent internal capture rate
- ⁴ ITE Trip Generation does not have AM rate for peak hour of adjacent traffic for quality restaurant. Instead, PM rates with 50/50 directional split were used.
- ⁵ Existing uses to be removed
- ⁶ ITE Code 814 rate not available. Average rate for similar uses used

Note: Totals may not add up 100% due to rounding in calculations.

APPENDIX E
2030 Without Project Analysis Worksheets

Santa Ana Renaissance Specific Plan Traffic Study
2030 Without Project AM

Scenario Report
Scenario: 2030NPAM
Command: 2030NP AM
Volume: 2030NPAM
Geometry: Future
Impact Fee: Default Impact Fee
Trip Generation: Default Trip Generation
Trip Distribution: Default Trip Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Santa Ana Renaissance Specific Plan Traffic Study
2030 Without Project AM

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS Veh	V/ C	Del/ LOS Veh	V/ C	
# 1 Flower St (NS) / Civic Center D	B	xxxxxx 0.683	B	xxxxxx 0.683	+ 0.000 V/C
# 2 Flower St (N/S) / Santa Ana Bl	A	xxxxxx 0.572	A	xxxxxx 0.572	+ 0.000 V/C
# 3 Parton St (E/W) / Santa Ana Bl	A	xxxxxx 0.278	A	xxxxxx 0.278	+ 0.000 V/C
# 4 Ross St (N/S) / Civic Center D	A	xxxxxx 0.517	A	xxxxxx 0.517	+ 0.000 V/C
# 5 Ross St (N/S) / Santa Ana Bl (	A	xxxxxx 0.475	A	xxxxxx 0.475	+ 0.000 V/C
# 6 Ross St (N/S) / 4th St (E/W)	B	10.8 0.000	B	10.8 0.000	+ 0.000 D/V
# 7 Broadway (N/S) / Civic Center	B	xxxxxx 0.614	B	xxxxxx 0.614	+ 0.000 V/C
# 8 Broadway (N/S) / Santa Ana Bl	A	xxxxxx 0.468	A	xxxxxx 0.468	+ 0.000 V/C
# 9 Broadway (N/S) / 5th St (E/W)	A	xxxxxx 0.349	A	xxxxxx 0.349	+ 0.000 V/C
# 10 Broadway (N/S) / 4th St (E/W)	A	xxxxxx 0.298	A	xxxxxx 0.298	+ 0.000 V/C
# 11 Broadway (N/S) / 3rd st (E/W)	A	xxxxxx 0.336	A	xxxxxx 0.336	+ 0.000 V/C
# 12 Broadway (N/S) / 1st St (E/W)	B	xxxxxx 0.651	B	xxxxxx 0.651	+ 0.000 V/C
# 13 Sycamore St (N/S) / Civic Cent	A	xxxxxx 0.420	A	xxxxxx 0.420	+ 0.000 V/C
# 14 Sycamore St (N/S) / Santa Ana	C	21.8 0.000	C	21.8 0.000	+ 0.000 D/V
# 15 Sycamore St (N/S) / 5th St (E/	C	15.7 0.000	C	15.7 0.000	+ 0.000 D/V
# 16 Sycamore St (N/S) / 4th St (E/	A	7.9 0.211	A	7.9 0.211	+ 0.000 V/C
# 17 Main St (N/S) / Civic Center D	C	xxxxxx 0.751	C	xxxxxx 0.751	+ 0.000 V/C
# 18 Main St (N/S) / Santa Ana Dr (	B	xxxxxx 0.654	B	xxxxxx 0.654	+ 0.000 V/C
# 19 Main St (N/S) / 5th St (E/W)	A	xxxxxx 0.499	A	xxxxxx 0.499	+ 0.000 V/C
# 20 Main St (N/S) / 4th St (E/W)	A	xxxxxx 0.508	A	xxxxxx 0.508	+ 0.000 V/C
# 21 Main St (N/S) / 3rd St (E/W)	A	xxxxxx 0.464	A	xxxxxx 0.464	+ 0.000 V/C
# 22 Main St (N/S) / 1st St (E/W)	C	xxxxxx 0.773	C	xxxxxx 0.773	+ 0.000 V/C
# 23 Bush St (N/S) / Santa Ana Bl (	A	xxxxxx 0.295	A	xxxxxx 0.295	+ 0.000 V/C
# 24 Bush St (N/S) / 5th St (E/W)	A	xxxxxx 0.242	A	xxxxxx 0.242	+ 0.000 V/C

Santa Ana Renaissance Specific Plan Traffic Study
2030 Without Project AM

Intersection	Base		Future		Change in
	Del/ LOS Veh	V/ C	Del/ LOS Veh	V/ C	
# 25 Bush St (N/S) / 4th St (E/W)	A	xxxxxx 0.270	A	xxxxxx 0.270	+ 0.000 V/C
# 26 Spurgeon St (N/S) / 1st St (E/	B	10.5 0.000	B	10.5 0.000	+ 0.000 D/V
# 27 French St (N/S) / Santa Ana Bl	C	19.7 0.000	C	19.7 0.000	+ 0.000 D/V
# 28 French St (N/S) / 4th St (E/W)	A	xxxxxx 0.291	A	xxxxxx 0.291	+ 0.000 V/C
# 29 Lacy St (N/S) / Civic Center D	C	20.3 0.000	C	20.3 0.000	+ 0.000 D/V
# 30 Lacy st (N/S) / Santa Ana Bl (	D	34.2 0.000	D	34.2 0.000	+ 0.000 D/V
# 31 Lacy St (N/S) / Brown St (E/W)	A	7.2 0.092	A	7.2 0.092	+ 0.000 V/C
# 32 Lacy St (N/S) / 4th St (E/W)	A	xxxxxx 0.407	A	xxxxxx 0.407	+ 0.000 V/C
# 33 Lacy St (N/S) / 1st St (E/W)	C	23.3 0.000	C	23.3 0.000	+ 0.000 D/V
# 34 Santiago St (N/S) / Washington	C	17.1 0.695	C	17.1 0.695	+ 0.000 V/C
# 35 Santiago St (N/S) / Civic Cent	D	26.2 0.901	D	26.2 0.901	+ 0.000 V/C
# 36 Santiago St (N/S) / Santa Ana	A	xxxxxx 0.541	A	xxxxxx 0.541	+ 0.000 V/C
# 40 Standard Av (N/S) / 1st St (E/	D	xxxxxx 0.808	D	xxxxxx 0.808	+ 0.000 V/C
# 42 Grand Av (N/S) / Santa Ana Bl	D	xxxxxx 0.866	D	xxxxxx 0.866	+ 0.000 V/C
# 43 Grand Av (N/S) / 4th St (E/W)	B	xxxxxx 0.646	B	xxxxxx 0.646	+ 0.000 V/C
# 44 Grand Av (N/S) / 1st St (E/W)	B	xxxxxx 0.700	B	xxxxxx 0.700	+ 0.000 V/C
# 45 Penn Way (NS) at I-5 SB Ramps	C	22.2 0.462	C	22.2 0.462	+ 0.000 D/V
# 46 I-5 SB Ramps (NS) / Santa Ana	C	27.2 0.499	C	27.2 0.499	+ 0.000 D/V
# 47 I-5 NB Ramps (NS) / 17th St. (	C	33.3 0.782	C	33.3 0.782	+ 0.000 D/V
# 48 I-5 NB Ramps (NS) / Grand Ave	C	21.2 0.648	C	21.2 0.648	+ 0.000 D/V
# 49 Mortimer (N/S) / Santa Ana Blv	C	20.3 0.000	C	20.3 0.000	+ 0.000 D/V
# 50 Mortimer (N/S) / 5th St (E/W)	A	9.0 0.287	A	9.0 0.287	+ 0.000 V/C

Santa Ana Renaissance Specific Plan Traffic Study
2030 Without Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Flower St (NS) / Civic Center Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.683
 Loss Time (sec): 5 (Y+R*4.0 sec) Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 35 Level Of Service: B

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: Include Include Include Include
 Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0

Volume Module:
 Base Vol: 155 688 165 120 634 180 133 554 158 140 459 41
 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 Base: 155 688 165 120 634 180 133 554 158 140 459 41
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 155 688 165 120 634 180 133 554 158 140 459 41
 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: 155 688 165 120 634 180 133 554 158 140 459 41
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 155 688 165 120 634 180 133 554 158 140 459 41
 PCF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 MLP Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Final Volume: 1598 2742 658 1598 2648 752 1598 2646 754 1598 3121 279

Saturation Flow Module:
 Sat/Lane: 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 1.61 0.39 1.00 1.56 0.44 1.00 1.56 0.44 1.00 1.84 0.16
 Vol/Sat: 1598 2742 658 1598 2648 752 1598 2646 754 1598 3121 279

Capacity Analysis Module:
 Vol/Sat: 0.10 0.25 0.25 0.08 0.24 0.24 0.08 0.21 0.21 0.09 0.15 0.15
 Crit Moves: ****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Flower St (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.572
 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 27 Level Of Service: A

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

Volume Module:
 Base Vol: 65 957 71 163 850 80 88 502 153 67 284 117
 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 Base: 65 957 71 163 850 80 88 502 153 67 284 117
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 65 957 71 163 850 80 88 502 153 67 284 117
 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: 65 957 71 163 850 80 88 502 153 67 284 117
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 65 957 71 163 850 80 88 502 153 67 284 117
 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: 65 957 71 163 850 80 88 502 153 67 284 117

Saturation Flow Module:
 Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
 Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 0.94
 Lanes: 1.00 2.00 1.00 1.00 2.00 1.00 1.00 3.00 1.00 1.00 2.00 1.00
 Final Sat.: 1598 1700 1598 1598 3400 1598 1598 5100 1598 1598 3400 1598

Capacity Analysis Module:
 Vol/Sat: 0.04 0.28 0.04 0.10 0.25 0.05 0.06 0.10 0.10 0.04 0.08 0.07
 Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #3 Parton St (E/W) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.278
 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 17 Level Of Service: A

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

Volume Module:
 Base Vol: 14 4 32 21 7 22 31 596 114 75 489 84
 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 Base: 14 4 32 21 7 22 31 596 114 75 489 84
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 14 4 32 21 7 22 31 596 114 75 489 84
 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: 14 4 32 21 7 22 31 596 114 75 489 84
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 14 4 32 21 7 22 31 596 114 75 489 84
 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: 14 4 32 21 7 22 31 596 114 75 489 84

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 0.94 0.94 1.00 1.00 0.94 1.00 1.00
 Lanes: 0.28 0.08 0.64 0.75 0.25 1.00 1.00 2.52 0.48 1.00 2.56 0.44
 Final Sat.: 476 136 1088 1275 425 1598 1598 4281 819 1598 4352 748

Capacity Analysis Module:
 Vol/Sat: 0.01 0.03 0.03 0.01 0.02 0.01 0.02 0.14 0.14 0.05 0.11 0.11
 Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #4 Ross St (N/S) / Civic Center Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.517
 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 24 Level Of Service: A

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
 Lanes: 1 0 1 0 1 1 0 0 1 1 0 1 0 1 1 0

Volume Module:
 Base Vol: 92 195 66 65 217 56 48 607 97 66 704 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 Base: 92 195 66 65 217 56 48 607 97 66 704 50
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 92 195 66 65 217 56 48 607 97 66 704 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: 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: 92 195 66 65 217 56 48 607 97 66 704 50
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 92 195 66 65 217 56 48 607 97 66 704 50
 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: 92 195 66 65 217 56 48 607 97 66 704 50

Saturation Flow Module:
 Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
 Adjustment: 0.94 1.00 0.94 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 0.79 0.21 1.00 1.72 0.28 1.00 1.87 0.13
 Final Sat.: 1598 1700 1598 1598 1351 349 1598 2932 468 1598 3175 225

Capacity Analysis Module:
 Vol/Sat: 0.06 0.11 0.04 0.04 0.16 0.16 0.03 0.21 0.21 0.04 0.22 0.22
 Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #5 Ross St (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.475
 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 23 Level Of Service: A

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 Ignore
 Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
 Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 2 0 1 1 0 3 0 1

Volume Module:
 Base Vol: 23 157 64 59 169 108 76 577 21 201 387 101
 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 Base: 23 157 64 59 169 108 76 577 21 201 387 101
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 23 157 64 59 169 108 76 577 21 201 387 101
 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: 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 Volume: 23 157 64 59 169 108 76 577 0 201 387 0
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 23 157 64 59 169 108 76 577 0 201 387 0
 PCE 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
 MLF 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
 FinalVolume: 23 157 64 59 169 108 76 577 0 201 387 0

Saturation Flow Module:
 Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
 Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94 0.94 1.00 0.94
 Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 2.00 1.00 1.00 3.00 1.00
 Final Sat.: 1598 1700 1598 1598 1700 1598 1598 3400 1598 1598 5100 1598

Capacity Analysis Module:
 Vol/Sat: 0.01 0.09 0.04 0.04 0.10 0.07 0.05 0.17 0.00 0.13 0.08 0.00
 Crit Moves: ****

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #6 Ross St (N/S) / 4th St (E/W)
Average Delay (sec/veh): 1.9 Worst Case Level Of Service: B [10.8]
Approach: North Bound South Bound East Bound West Bound
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 0 1 0 1 0 1 0 0 0 0 0 0 1 0 0 0 1

Level Of Service Computation Report
ICU (Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #7 Broadway (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.614
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 30 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Ignore Ignore Include Include
Lanes: 1 0 2 0 1 1 0 2 0 1 1 0 1 1 0 1 0 1 1 0

Level Of Service Computation Report
ICU (Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #8 Broadway (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.468
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 19 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Lanes: 1 0 2 0 0 0 0 0 1 1 0 0 0 0 1 1 1 0 0

Level Of Service Computation Report
ICU (Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #9 Broadway (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.349
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 19 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Protected Permitted Permitted
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 1 0 2 0 0 0 0 1 1 1 0 0 0 0 0 0

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #10 Broadway (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.298
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 17 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Volume Module: Base Vol: 10 489 24 17 455 76 17 56 17 22 94 12
Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Capacity Analysis Module: Vol/Sat: 0.01 0.15 0.15 0.01 0.16 0.16 0.01 0.05 0.05 0.01 0.08 0.08

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #11 Broadway (N/S) / 3rd St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.336
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 18 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Volume Module: Base Vol: 24 373 8 24 315 21 12 51 18 10 36 18
Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Capacity Analysis Module: Vol/Sat: 0.02 0.22 0.22 0.02 0.19 0.01 0.01 0.04 0.04 0.01 0.03 0.03

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #12 Broadway (N/S) / 1st St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.651
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 33 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Protected Include Protected Include Protected Include Protected Include
Volume Module: Base Vol: 59 345 102 57 336 54 180 1355 69 140 917 61
Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Capacity Analysis Module: Vol/Sat: 0.04 0.20 0.06 0.04 0.20 0.03 0.11 0.28 0.28 0.09 0.19 0.19

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #13 Sycamore St (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.420
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 21 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Volume Module: Base Vol: 22 88 28 29 21 22 68 454 61 29 692 88
Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Capacity Analysis Module: Vol/Sat: 0.01 0.08 0.08 0.02 0.04 0.04 0.04 0.15 0.15 0.02 0.23 0.23

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project AM
Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #14 Sycamore St (N/S) / Santa Ana Bl (E/W)
Average Delay (sec/veh): 3.0 Worst Case Level Of Service: C [21.8]
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 1 0 0 0 0 0 1 1 1 0 0
Volume Module:
Base Vol: 9 34 0 0 50 22 0 0 0 68 808 29
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 Base: 9 34 0 0 50 22 0 0 0 68 808 29
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 9 34 0 0 50 22 0 0 0 68 808 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: 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: 9 34 0 0 50 22 0 0 0 68 808 29
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 9 34 0 0 50 22 0 0 0 68 808 29
Critical Gap Module:
Critical Gap: 7.1 6.5 xxxxx 6.5 6.2 xxxxx xxxxx xxxxx 4.1 xxxxx xxxxx
FollowUpTim: 3.5 4.0 xxxxx xxxxx 4.0 3.3 xxxxx xxxxx xxxxx 2.2 xxxxx xxxxx
Capacity Module:
Conflict Vol: 430 973 xxxxx xxxxx 959 284 xxxxx xxxxx xxxxx 0 xxxxx xxxxx
Potent Cap.: 539 254 xxxxx xxxxx 259 760 xxxxx xxxxx xxxxx 900 xxxxx xxxxx
Move Cap.: 413 234 xxxxx xxxxx 238 760 xxxxx xxxxx xxxxx 900 xxxxx xxxxx
Volume/Cap: 0.02 0.15 xxxxx xxxxx 0.21 0.03 xxxxx xxxxx xxxxx 0.08 xxxxx xxxxx
Level of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.2 xxxxx xxxxx
Control Del: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 9.3 xxxxx xxxxx
LOS by Move: * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: 257 xxxxx xxxxx xxxxx xxxxx 302 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue: 0.6 xxxxx xxxxx xxxxx xxxxx 0.9 xxxxx xxxxx xxxxx 0.2 xxxxx xxxxx
Shrd Condel: 21.8 xxxxx xxxxx xxxxx xxxxx 20.6 xxxxx xxxxx xxxxx 9.3 xxxxx xxxxx
Shared LOS: * * * * *
ApproachDel: 21.8 * 20.6 * xxxxxxx xxxxxxx
ApproachLOS: C * * * * *
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project AM
Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #15 Sycamore St (N/S) / 5th St (E/W)
Average Delay (sec/veh): 3.1 Worst Case Level Of Service: C [15.7]
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 0 1 0 0 0 1 0 0 0 0 0 1 1 1 0 0
Volume Module:
Base Vol: 0 30 23 97 35 0 17 766 17 0 0 0 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 Base: 0 30 23 97 35 0 17 766 17 0 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 30 23 97 35 0 17 766 17 0 0 0 0
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: 0 30 23 97 35 0 17 766 17 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 30 23 97 35 0 17 766 17 0 0 0 0
Critical Gap Module:
Critical Gap: xxxxxx 6.5 6.2 7.1 6.5 xxxxx 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx
FollowUpTim: xxxxxx 4.0 3.3 3.5 4.0 xxxxx 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx
Capacity Module:
Conflict Vol: xxxxx 809 264 304 817 xxxxxx 0 xxxxx xxxxx xxxxx xxxxx xxxxx
Potent Cap.: xxxxx 317 780 652 313 xxxxxx 900 xxxxx xxxxx xxxxx xxxxx xxxxx
Move Cap.: xxxxx 311 780 578 307 xxxxxx 900 xxxxx xxxxx xxxxx xxxxx xxxxx
Volume/Cap: xxxxx 0.10 0.03 0.17 0.11 xxxxx 0.02 xxxxx xxxxx xxxxx xxxxx xxxxx
Level of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.1 xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del: xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 9.1 xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx 420 468 xxxxx xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue: xxxxxx xxxxx 0.4 1.1 xxxxx xxxxxx 0.1 xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd Condel: xxxxxx xxxxx 14.8 15.7 xxxxx xxxxxx 9.1 xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * * *
ApproachDel: 14.8 * 15.7 * xxxxxxx xxxxxxx
ApproachLOS: B * C * * * * *
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project AM
Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)
Intersection #16 Sycamore St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.211
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 7.9
Optimal Cycle: 0 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0
Volume Module:
Base Vol: 1 9 28 15 12 12 14 48 8 72 80 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 Base: 1 9 28 15 12 12 14 48 8 72 80 30
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 1 9 28 15 12 12 14 48 8 72 80 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: 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: 1 9 28 15 12 12 14 48 8 72 80 30
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 1 9 28 15 12 12 14 48 8 72 80 30
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
MFL Adj: 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 9 28 15 12 12 14 48 8 72 80 30
Saturation Flow Module:
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: 0.02 0.24 0.74 0.38 0.31 0.31 0.20 0.69 0.11 0.40 0.44 0.16
Final Sat.: 22 200 622 302 241 241 167 573 96 340 378 142
Capacity Analysis Module:
Vol/Sat: 0.05 0.05 0.05 0.05 0.05 0.05 0.08 0.08 0.08 0.21 0.21 0.21
Crit Moves: ****
Delay/Veh: 7.2 7.2 7.2 7.6 7.6 7.6 7.6 7.6 7.6 8.2 8.2 8.2
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 7.2 7.2 7.2 7.6 7.6 7.6 7.6 7.6 7.6 8.2 8.2 8.2
LOS by Move: A A A A A A A A A A A A
ApproachDel: 7.2 * 7.6 * 7.6 * 8.2 *
Delay Adj: 1.00 * 1.00 * 1.00 * 1.00 *
ApprAdjDel: 7.2 * 7.6 * 7.6 * 8.2 *
LOS by Appr: A * A * A * A *
AllWayAvgQ: 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1 0.3 0.3 0.3
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project AM
Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #17 Main St (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.751
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 0 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module:
Base Vol: 169 934 81 101 1016 189 94 459 136 65 571 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 Base: 169 934 81 101 1016 189 94 459 136 65 571 47
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 169 934 81 101 1016 189 94 459 136 65 571 47
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: 169 934 81 101 1016 189 94 459 136 65 571 47
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 169 934 81 101 1016 189 94 459 136 65 571 47
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
MFL Adj: 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: 169 934 81 101 1016 189 94 459 136 65 571 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 1.00 0.94 1.00 1.00
Lanes: 1.00 1.84 0.16 1.00 1.69 0.31 1.00 1.54 0.46 1.00 1.85 0.15
Final Sat.: 1598 3129 271 1598 2867 533 1598 2623 777 1598 3141 259
Capacity Analysis Module:
Vol/Sat: 0.11 0.30 0.30 0.06 0.35 0.35 0.06 0.18 0.17 0.04 0.18 0.18
Crit Moves: ****
Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #18 Main St (N/S) / Santa Ana Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.654
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 33 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Rights: Include Include Include Include Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 2 0 0 0 0 1 1 0 0 0 0 0 0 0 1 1 1 0 0
Volume Module:
Base Vol: 63 987 0 0 1138 88 0 0 0 0 63 904 75
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 Base: 63 987 0 0 1138 88 0 0 0 0 63 904 75
Added Vol: 0
PasserByVol: 0
Initial Fut: 63 987 0 0 1138 88 0 0 0 0 63 904 75
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 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 1.00
PHF Volume: 63 987 0 0 1138 88 0 0 0 0 63 904 75
Reduct Vol: 0
Reduced Vol: 63 987 0 0 1138 88 0 0 0 0 63 904 75
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 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 1.00
FinalVolume: 63 987 0 0 1138 88 0 0 0 0 63 904 75
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94 1.00 0.94 1.00 0.94
Lanes: 1.00 2.00 0.00 0.00 1.86 0.14 0.00 0.00 0.00 0.18 2.60 0.22
Final Sat.: 1598 3400 0 0 3156 244 0 0 0 308 4425 367
Capacity Analysis Module:
Vol/Sat: 0.04 0.29 0.00 0.00 0.36 0.36 0.00 0.00 0.00 0.04 0.20 0.20
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #19 Main St (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.499
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 24 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Protected Include Permitted Include Permitted Include
Rights: Include Include Include Include Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 1 0 2 0 0 0 1 1 1 0 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 963 45 69 1055 0 65 460 32 0 0 0 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 1.00
Initial Base: 0 963 45 69 1055 0 65 460 32 0 0 0 0
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 963 45 69 1055 0 65 460 32 0 0 0 0
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 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 1.00
PHF Volume: 0 963 45 69 1055 0 65 460 32 0 0 0 0
Reduct Vol: 0
Reduced Vol: 0 963 45 69 1055 0 65 460 32 0 0 0 0
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 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 1.00
FinalVolume: 0 963 45 69 1055 0 65 460 32 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 0.94 1.00 0.94 1.00 0.94
Lanes: 0.00 1.91 0.09 1.00 2.00 0.00 0.35 2.48 0.17 0.00 0.00 0.00
Final Sat.: 0 3248 152 1598 3400 0 595 4212 293 0 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.00 0.30 0.30 0.04 0.31 0.00 0.04 0.11 0.11 0.00 0.00 0.00
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #20 Main St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.508
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 24 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Rights: Include Include Include Include Include Include Include Include
Min. Green: 0 0 1 1 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 0 0 1 1 0 0 0 0 1 0 0 0 0 1 0 0 0
Volume Module:
Base Vol: 0 966 24 0 1120 18 0 116 20 0 167 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 1.00
Initial Base: 0 966 24 0 1120 18 0 116 20 0 167 42
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 966 24 0 1120 18 0 116 20 0 167 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 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 1.00
PHF Volume: 0 966 24 0 1120 18 0 116 20 0 167 42
Reduct Vol: 0
Reduced Vol: 0 966 24 0 1120 18 0 116 20 0 167 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 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 1.00
FinalVolume: 0 966 24 0 1120 18 0 116 20 0 167 42
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 0.94 1.00 0.94 1.00 0.94
Lanes: 0.00 1.95 0.05 0.00 1.97 0.03 0.00 0.85 0.15 0.00 0.80 0.20
Final Sat.: 0 3318 82 0 3346 54 0 1450 250 0 1358 342
Capacity Analysis Module:
Vol/Sat: 0.00 0.29 0.29 0.00 0.33 0.33 0.00 0.08 0.08 0.00 0.12 0.12
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #21 Main St (N/S) / 3rd St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.464
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 22 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Rights: Include Include Include Include Include Include Include Include
Min. Green: 0
Lanes: 0 0 1 1 0 0 0 1 1 0 1 0 0 1 0 1 0 0 1 0 0 1 0
Volume Module:
Base Vol: 0 970 15 0 1104 22 39 95 32 13 73 13
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 Base: 0 970 15 0 1104 22 39 95 32 13 73 13
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 970 15 0 1104 22 39 95 32 13 73 13
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 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 1.00
PHF Volume: 0 970 15 0 1104 22 39 95 32 13 73 13
Reduct Vol: 0
Reduced Vol: 0 970 15 0 1104 22 39 95 32 13 73 13
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 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 1.00
FinalVolume: 0 970 15 0 1104 22 39 95 32 13 73 13
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 0.94 1.00 0.94 1.00 0.94
Lanes: 0.00 1.97 0.03 0.00 1.96 0.04 1.00 0.75 0.25 1.00 0.85 0.15
Final Sat.: 0 3348 52 0 3334 66 1598 1272 428 1598 1443 257
Capacity Analysis Module:
Vol/Sat: 0.00 0.29 0.29 0.00 0.33 0.33 0.02 0.07 0.07 0.01 0.05 0.05
Crit Moves: ****

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #22 Main St (N/S) / 1st St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.773
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 47 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 1 0 1 0 2 0 1 1 0 2 1 0 1 0 2 1 0
Volume Module:
Base Vol: 165 763 79 129 893 86 131 1425 107 91 945 89
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 Base: 165 763 79 129 893 86 131 1425 107 91 945 89
Added Vol: 0
PasserByVol: 0
Initial Fut: 165 763 79 129 893 86 131 1425 107 91 945 89
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: 165 763 79 129 893 86 131 1425 107 91 945 89
Reduced Vol: 0
Reduced Vol: 165 763 79 129 893 86 131 1425 107 91 945 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: 165 763 79 129 893 86 131 1425 107 91 945 89
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 0.94 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 1.00 1.81 0.19 1.00 2.00 1.00 1.00 2.79 0.21 1.00 2.74 0.26
Final Sat.: 1598 3081 319 1598 3400 1598 1598 4744 356 1598 4661 439
Capacity Analysis Module:
Vol/Sat: 0.10 0.25 0.25 0.08 0.26 0.05 0.08 0.30 0.30 0.06 0.20 0.20
Crit Moves: ****

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #23 Bush St (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.295
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 17 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0 0 1 1 1 0
Volume Module:
Base Vol: 23 135 0 0 95 37 0 0 0 0 25 665 89
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 Base: 23 135 0 0 95 37 0 0 0 0 25 665 89
Added Vol: 0
PasserByVol: 0
Initial Fut: 23 135 0 0 95 37 0 0 0 0 25 665 89
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: 23 135 0 0 95 37 0 0 0 0 25 665 89
Reduced Vol: 0
Reduced Vol: 23 135 0 0 95 37 0 0 0 0 25 665 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: 23 135 0 0 95 37 0 0 0 0 25 665 89
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00
Lanes: 1.00 1.00 0.00 0.00 0.72 0.28 0.00 0.00 0.00 0.10 2.56 0.34
Final Sat.: 1598 1700 0 0 1223 477 0 0 0 164 4354 583
Capacity Analysis Module:
Vol/Sat: 0.01 0.08 0.00 0.00 0.08 0.08 0.00 0.00 0.00 0.01 0.15 0.15
Crit Moves: ****

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #24 Bush St (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.242
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 16 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 0 1 0 1 0 1 0 0 0 1 1 1 0 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 134 31 30 103 0 24 351 14 0 0 0 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 Base: 0 134 31 30 103 0 24 351 14 0 0 0 0
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 134 31 30 103 0 24 351 14 0 0 0 0
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: 0 134 31 30 103 0 24 351 14 0 0 0 0
Reduced Vol: 0
Reduced Vol: 0 134 31 30 103 0 24 351 14 0 0 0 0
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: 0 134 31 30 103 0 24 351 14 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00 0.94 1.00 0.94
Lanes: 0.00 0.81 0.19 1.00 1.00 0.00 0.18 2.71 0.11 0.00 0.00 0.00
Final Sat.: 0 1381 319 1598 1700 0 315 4602 184 0 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.00 0.10 0.10 0.02 0.06 0.00 0.01 0.08 0.08 0.00 0.00 0.00
Crit Moves: ****

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #25 Bush St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.270
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 17 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 0 1 0 1 0 0 1 0 0 1 0 0 0 0 0 1 0 0 0 0
Volume Module:
Base Vol: 8 135 9 18 97 4 8 102 11 11 172 20
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 Base: 8 135 9 18 97 4 8 102 11 11 172 20
Added Vol: 0
PasserByVol: 0
Initial Fut: 8 135 9 18 97 4 8 102 11 11 172 20
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: 8 135 9 18 97 4 8 102 11 11 172 20
Reduced Vol: 0
Reduced Vol: 8 135 9 18 97 4 8 102 11 11 172 20
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: 8 135 9 18 97 4 8 102 11 11 172 20
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 0.94 1.00 1.00
Lanes: 1.00 0.94 0.06 1.00 0.96 0.04 0.07 0.84 0.09 0.05 0.85 0.10
Final Sat.: 1598 1594 106 1598 1633 67 112 1433 155 92 1440 167
Capacity Analysis Module:
Vol/Sat: 0.01 0.08 0.08 0.01 0.06 0.06 0.00 0.07 0.07 0.01 0.12 0.12
Crit Moves: ****

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #26 Spurgeon St (N/S) / 1st St (E/W)
Average Delay (sec/veh): 0.2 Worst Case Level Of Service: B(10.5)
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 Include Stop Sign Include Uncontrolled Include Uncontrolled Include
Rights: Stop Sign Include Stop Sign Include Uncontrolled Include Uncontrolled Include
Lanes: 0 0 0 0 0 0 0 0 1 0 0 3 0 0 0 0 2 1 0
Volume Module:
Base Vol: 0 0 0 0 0 0 39 0 1741 0 0 915 7
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 Base: 0 0 0 0 0 0 39 0 1741 0 0 915 7
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 0 0 0 39 0 1741 0 0 915 7
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 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 1.00
PHF Volume: 0 0 0 0 0 0 39 0 1741 0 0 915 7
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 0 0 0 0 0 39 0 1741 0 0 915 7
Critical Gap Module:
Critical Gap: xxxxxx xxxxxx xxxxxx 6.9 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
FollowUpTim: xxxxxx xxxxxx xxxxxx xxxxxx 3.3 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Capacity Module:
Conflict Vol: xxxxx xxxxx xxxxxx xxxxx xxxxx 309 xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Potent Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx 693 xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Move Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx 693 xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Volume/Cap: xxxxx xxxxx xxxxx xxxxx xxxxx 0.06 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del: xxxxxx xxxxx xxxxxx xxxxxx xxxxxx 10.5 xxxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx
LOS by Move: * * * * * B * * * * * A * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Shrd ConDel: xxxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Shared LOS: * * * * * * * * * * * C * * * * * A * * * * *
ApproachDel: xxxxxx 10.5 xxxxxx xxxxxx
ApproachLOS: * * * * * B * * * * *
Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #27 French St (N/S) / Santa Ana Bl (E/W)
Average Delay (sec/veh): 1.9 Worst Case Level Of Service: C(19.7)
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 Include Stop Sign Include Uncontrolled Include Uncontrolled Include
Rights: Stop Sign Include Stop Sign Include Uncontrolled Include Uncontrolled Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 1 0
Volume Module:
Base Vol: 55 21 0 0 0 26 2 0 0 0 0 13 907 11
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 Base: 55 21 0 0 0 26 2 0 0 0 0 13 907 11
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 55 21 0 0 0 26 2 0 0 0 0 13 907 11
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 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 1.00 1.00
PHF Volume: 55 21 0 0 0 26 2 0 0 0 0 13 907 11
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 55 21 0 0 0 26 2 0 0 0 0 13 907 11
Critical Gap Module:
Critical Gap: 7.1 6.5 xxxxxx xxxxxx 6.5 6.2 xxxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx
FollowUpTim: 3.5 4.0 xxxxxx xxxxxx 4.0 3.3 xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx
Capacity Module:
Conflict Vol: 493 944 xxxxxx xxxxx 939 459 xxxxx xxxxx xxxxxx 0 xxxxx xxxxxx
Potent Cap.: 490 264 xxxxxx xxxxx 266 606 xxxxx xxxxx xxxxxx 900 xxxxx xxxxxx
Move Cap.: 446 260 xxxxxx xxxxx 262 606 xxxxx xxxxx xxxxxx 900 xxxxx xxxxxx
Volume/Cap: 0.12 0.08 xxxxx xxxxx 0.10 0.00 xxxxx xxxxx xxxxx 0.01 xxxxx xxxxx
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del: xxxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
LOS by Move: * * * * * * * * * * * A * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: 373 xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue: 0.8 xxxxx xxxxxx xxxxxx xxxxx 0.3 xxxxxx xxxxx xxxxxx 0.0 xxxxx xxxxxx
Shrd ConDel: 17.1 xxxxx xxxxxx xxxxxx xxxxx 19.7 xxxxxx xxxxx xxxxxx 9.1 xxxxx xxxxxx
Shared LOS: * * * * * * * * * * * C * * * * * A * * * * *
ApproachDel: 17.1 19.7 xxxxxx xxxxxx
ApproachLOS: C * * * * *
Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #28 French St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.291
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 17 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Rights: Permitted Include Permitted Include Permitted Include Permitted Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 0 1 0 0 1 1 0 0 0 1 0 0 1 0
Volume Module:
Base Vol: 3 20 33 67 34 13 1 79 4 41 240 46
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 Base: 3 20 33 67 34 13 1 79 4 41 240 46
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 3 20 33 67 34 13 1 79 4 41 240 46
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: 3 20 33 67 34 13 1 79 4 41 240 46
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 3 20 33 67 34 13 1 79 4 41 240 46
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: 3 20 33 67 34 13 1 79 4 41 240 46
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 1.00 1.00
Lanes: 0.05 0.36 0.59 1.00 0.72 0.28 0.01 0.94 0.05 0.15 0.85 1.00
Final Sat.: 91 607 1002 1598 1230 470 20 1599 81 248 1452 1598
Capacity Analysis Module:
Vol/Sat: 0.00 0.03 0.03 0.04 0.03 0.03 0.00 0.05 0.05 0.02 0.17 0.03
Crit Moves: **** * * * * *

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #29 Lacy St (N/S) / Civic Center Dr (E/W)
Average Delay (sec/veh): 2.7 Worst Case Level Of Service: C(20.3)
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 Include Stop Sign Include Uncontrolled Include Uncontrolled Include
Rights: Stop Sign Include Stop Sign Include Uncontrolled Include Uncontrolled Include
Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0
Volume Module:
Base Vol: 25 17 32 25 23 31 3 385 30 7 415 155
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 Base: 25 17 32 25 23 31 3 385 30 7 415 155
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 25 17 32 25 23 31 3 385 30 7 415 155
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 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 1.00
PHF Volume: 25 17 32 25 23 31 3 385 30 7 415 155
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 25 17 32 25 23 31 3 385 30 7 415 155
Critical Gap Module:
Critical Gap: 7.1 6.5 6.2 7.1 6.5 6.2 4.1 xxxxx xxxxxx 4.1 xxxxx xxxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxxx 2.2 xxxxx xxxxxx
Capacity Module:
Conflict Vol: 940 990 400 937 928 493 570 xxxxx xxxxxx 415 xxxxx xxxxxx
Potent Cap.: 246 248 654 247 270 580 1013 xxxxx xxxxxx 1155 xxxxx xxxxxx
Move Cap.: 216 246 654 221 268 580 1013 xxxxx xxxxxx 1155 xxxxx xxxxxx
Volume/Cap: 0.12 0.07 0.05 0.11 0.09 0.05 0.00 xxxxx xxxxx 0.01 xxxxx xxxxx
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del: xxxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx 8.6 xxxxx xxxxxx 8.1 xxxxx xxxxxx
LOS by Move: * * * * * A * * * * * A * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx 317 xxxxxx xxxxx 313 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue: xxxxxx 0.9 xxxxxx xxxxxx 1.0 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Shrd ConDel: xxxxxx 19.8 xxxxxx xxxxxx 20.3 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Shared LOS: * * * * * * * * * * * C * * * * * A * * * * *
ApproachDel: 19.8 20.3 xxxxxx xxxxxx
ApproachLOS: C * * * * *
Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #30 Lacy at (N/S) / Santa Ana Bl (E/W)
Average Delay (sec/veh): 2.8 Worst Case Level Of Service: D [34.2]
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 1 0 0 1 0 0 1 0

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)
Intersection #31 Lacy St (N/S) / Brown St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.092
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 7.2
Optimal Cycle: 20 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #32 Lacy St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.407
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 20 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 1 0 0 1 0 1 0 1 0 1

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #33 Lacy St (N/S) / 1st St (E/W)
Average Delay (sec/veh): 1.5 Worst Case Level Of Service: C [23.3]
Cycle (sec): 100 Critical Vol./Cap.(X): 0.407
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 20 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 1 0 3 0 0 0 0 0 2 1 0 1

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Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)
Intersection #34 Santiago St (N/S) / Washington Av (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.695
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 17.1
Optimal Cycle: 0 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 1 0 1 0 1 0 1 0 1 0 0 1 0 0 1 0 0 0

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Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)
Intersection #35 Santiago St (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.901
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 26.2
Optimal Cycle: 0 Level Of Service: D
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 1 0 0 1 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0 0

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #36 Santiago St (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.541
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 26 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 1 0 1 0 1 0 1 0 1 0 1 0 2 0 1 1

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project AM
Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #40 Standard Av (N/S) / 1st St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.808
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 54 Level Of Service: D
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 1 0 0 1 0 0 0 1 0 0 1 0 1 1 0 1 0 1 1 0

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #42 Grand Av (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.866
 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 71 Level Of Service: D

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 Split Phase Split Phase
 Rights: Include Include Include Include
 Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
 Lanes: 1 0 2 1 0 1 0 2 0 2 2 0 1 0 1 0

Volume Module:
 Base Vol: 176 895 15 69 1368 1099 189 152 624 23 97 15
 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 Base: 176 895 15 69 1368 1099 189 152 624 23 97 15
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 176 895 15 69 1368 1099 189 152 624 23 97 15
 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: 176 895 15 69 1368 1099 189 152 624 23 97 15
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 176 895 15 69 1368 1099 189 152 624 23 97 15
 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: 176 895 15 69 1368 1099 189 152 624 23 97 15

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 0.94 0.94 1.00 0.94 1.00 1.00 0.94
 Lanes: 1.00 2.95 0.05 1.00 2.00 2.00 2.00 1.00 2.00 0.34 1.44 0.22
 Final Sat.: 1598 5016 84 1598 3400 3196 3196 1700 3196 579 2443 378

Capacity Analysis Module:
 Vol/Sat: 0.11 0.18 0.18 0.04 0.40 0.34 0.06 0.09 0.20 0.04 0.04 0.04
 Crit Moves: ****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #43 Grand Av (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.646
 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 32 Level Of Service: B

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: Include Include Include Include
 Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
 Lanes: 1 0 3 0 1 1 0 2 1 0 1 0 1 1 0 2 0 1

Volume Module:
 Base Vol: 99 298 117 131 483 91 109 1078 103 119 338 125
 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 Base: 99 298 117 131 483 91 109 1078 103 119 338 125
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 99 298 117 131 483 91 109 1078 103 119 338 125
 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: 99 298 117 131 483 91 109 1078 103 119 338 125
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 99 298 117 131 483 91 109 1078 103 119 338 125
 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: 99 298 117 131 483 91 109 1078 103 119 338 125

Saturation Flow Module:
 Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
 Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 1.00 0.94 1.00 0.94
 Lanes: 1.00 3.00 1.00 1.00 2.52 0.48 1.00 1.83 0.17 1.00 2.00 1.00
 Final Sat.: 1598 5100 1598 1598 4291 809 1598 3103 297 1598 3400 1598

Capacity Analysis Module:
 Vol/Sat: 0.06 0.06 0.07 0.08 0.11 0.11 0.07 0.35 0.35 0.07 0.10 0.08
 Crit Moves: ****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #44 Grand Av (N/S) / 1st St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.700
 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 37 Level Of Service: B

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: Include Include Include Include
 Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
 Lanes: 2 0 2 1 0 2 0 3 0 1 2 0 2 1 0 2 0 2 0 1

Volume Module:
 Base Vol: 120 515 77 117 1319 86 303 1059 224 326 671 69
 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 Base: 120 515 77 117 1319 86 303 1059 224 326 671 69
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 120 515 77 117 1319 86 303 1059 224 326 671 69
 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: 120 515 77 117 1319 86 303 1059 224 326 671 69
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 120 515 77 117 1319 86 303 1059 224 326 671 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: 120 515 77 117 1319 86 303 1059 224 326 671 69

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 0.94 0.94 1.00 1.00 0.94 1.00 0.94
 Lanes: 2.00 2.61 0.39 2.00 3.00 1.00 2.00 2.48 0.52 2.00 2.00 1.00
 Final Sat.: 3196 4437 663 3196 5100 1598 3196 4210 890 3196 3400 1598

Capacity Analysis Module:
 Vol/Sat: 0.04 0.12 0.12 0.04 0.26 0.05 0.09 0.25 0.25 0.10 0.20 0.04
 Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #45 Penn Way (NS) at I-5 SB Ramps (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.462
 Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 22.2
 Optimal Cycle: 38 Level Of Service: B

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 Permitted Permitted
 Rights: Include Include Include Include
 Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
 Lanes: 0 0 2 0 1 2 0 2 0 0 0 0 0 0 0 2

Volume Module:
 Base Vol: 0 111 82 647 84 0 0 0 0 250 0 219
 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 Base: 0 111 82 647 84 0 0 0 0 250 0 219
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 0 111 82 647 84 0 0 0 0 250 0 219
 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: 0 111 82 647 84 0 0 0 0 250 0 219
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 0 111 82 647 84 0 0 0 0 250 0 219
 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: 0 111 82 647 84 0 0 0 0 250 0 219

Saturation Flow Module:
 Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
 Adjustment: 1.00 0.95 0.85 0.92 0.95 1.00 1.00 1.00 1.00 0.77 1.00 0.75
 Lanes: 0.00 2.00 1.00 2.00 2.00 0.00 0.00 0.00 0.00 1.00 0.00 2.00
 Final Sat.: 0 3610 1615 3502 3610 0 0 0 0 1461 0 2842

Capacity Analysis Module:
 Vol/Sat: 0.00 0.03 0.05 0.18 0.02 0.00 0.00 0.00 0.00 0.17 0.00 0.08
 Crit Moves: ****

Green/Cycle: 0.00 0.11 0.11 0.40 0.40 0.00 0.00 0.00 0.00 0.37 0.00 0.77
 Volume/Cap: 0.00 0.28 0.46 0.46 0.06 0.00 0.00 0.00 0.00 0.46 0.00 0.10
 Delay/Veh: 0.0 41.3 43.6 22.3 18.5 0.0 0.0 0.0 0.0 24.5 0.0 2.9
 User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 AdjDel/Veh: 0.0 41.3 43.6 22.3 18.5 0.0 0.0 0.0 0.0 24.5 0.0 2.9
 LOS by Move: A D D C B A A A C A
 HCM2kAvgQ: 0 2 3 8 1 0 0 0 0 6 0 1

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

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
Intersection #46 I-5 SB Ramps (NS) / Santa Ana Bl (EW)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.499
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 27.2
Optimal Cycle: 41 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Split Phase Split Phase Split Phase Split Phase
Rights: Include Include Include Include
Lanes: 0 0 0 0 2 0 0 0 1 2 0 3 0 0 0 0 2 1 0
Volume Module:
Base Vol: 0 0 0 432 0 131 218 431 0 0 1015 166
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 Base: 0 0 0 432 0 131 218 431 0 0 1015 166
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 432 0 131 218 431 0 0 1015 166
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: 0 0 0 432 0 131 218 431 0 0 1015 166
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 432 0 131 218 431 0 0 1015 166
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 0 0 432 0 131 218 431 0 0 1015 166
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.92 1.00 0.85 0.92 0.91 1.00 1.00 0.89 0.89
Lanes: 0.00 0.00 0.00 2.00 0.00 1.00 2.00 3.00 0.00 0.00 2.58 0.42
Final Sat.: 0 0 0 3502 0 1615 3502 5187 0 0 4364 714
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.12 0.00 0.08 0.06 0.08 0.00 0.00 0.23 0.23
Crit Moves: ****
Green/Cycle: 0.00 0.00 0.00 0.25 0.00 0.25 0.17 0.17 0.00 0.00 0.47 0.47
Volume/Cap: 0.00 0.00 0.00 0.50 0.00 0.33 0.37 0.50 0.00 0.00 0.50 0.50
Delay/Veh: 0.0 0.0 0.0 32.8 0.0 31.3 37.4 38.3 0.0 0.0 18.7 18.7
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 0.0 0.0 32.8 0.0 31.3 37.4 38.3 0.0 0.0 18.7 18.7
LOS by Move: A A A C A C D D A A B B
HCM2AvgQ: 0 0 0 6 0 3 3 5 0 0 9 9
Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
Intersection #47 I-5 NB Ramps (NS) / 17th St. (EW)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.782
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 33.3
Optimal Cycle: 83 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Split Phase Split Phase Protected Protected
Rights: Include Include Ignore Include
Lanes: 1 1 0 0 1 1 0 0 0 1 1 0 3 0 1 0 0 2 1 0
Volume Module:
Base Vol: 665 85 38 37 0 197 130 909 255 0 1277 48
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 Base: 665 85 38 37 0 197 130 909 255 0 1277 48
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 665 85 38 37 0 197 130 909 255 0 1277 48
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: 665 85 38 37 0 197 130 909 255 0 1277 48
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 665 85 38 37 0 197 130 909 255 0 1277 48
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: 665 85 38 37 0 197 130 909 255 0 1277 48
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.96 0.96 0.85 0.85 0.95 1.00 0.85 0.95 0.91 1.00 1.00 0.91 0.91
Lanes: 1.77 0.23 1.00 1.00 0.00 1.00 1.00 3.00 1.00 0.00 2.89 0.11
Final Sat.: 3228 413 1615 1805 0 1615 1805 5187 1900 0 4974 187
Capacity Analysis Module:
Vol/Sat: 0.21 0.21 0.02 0.02 0.00 0.12 0.07 0.18 0.00 0.00 0.26 0.26
Crit Moves: ****
Green/Cycle: 0.26 0.26 0.26 0.16 0.00 0.16 0.09 0.42 0.00 0.00 0.33 0.33
Volume/Cap: 0.78 0.78 0.09 0.13 0.00 0.78 0.78 0.42 0.00 0.00 0.78 0.78
Delay/Veh: 38.4 38.4 27.9 36.6 0.0 55.2 65.3 20.5 0.0 0.0 32.8 32.8
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 38.4 38.4 27.9 36.6 0.0 55.2 65.3 20.5 0.0 0.0 32.8 32.8
LOS by Move: D D C D A E C A A C C
HCM2AvgQ: 13 13 1 1 0 8 6 7 0 0 15 15
Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
Intersection #48 I-5 NB Ramps (NS) / Grand Ave (EW)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.648
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 21.2
Optimal Cycle: 53 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Protected Protected Split Phase Split Phase
Rights: Ignore Include Include Include
Lanes: 0 0 3 0 1 1 0 3 0 0 0 0 0 0 0 2 0 0 0 1
Volume Module:
Base Vol: 0 762 408 34 1669 0 0 0 0 871 0 139
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 Base: 0 762 408 34 1669 0 0 0 0 871 0 139
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 762 408 34 1669 0 0 0 0 871 0 139
User Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 0 762 0 34 1669 0 0 0 0 871 0 139
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 762 0 34 1669 0 0 0 0 871 0 139
PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 0 762 0 34 1669 0 0 0 0 871 0 139
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.91 1.00 0.90 0.91 1.00 1.00 1.00 1.00 0.92 1.00 0.85
Lanes: 0.00 3.00 1.00 1.00 3.00 0.00 0.00 0.00 0.00 2.00 0.00 1.00
Final Sat.: 0 5187 1900 1805 5187 0 0 0 0 3502 0 1615
Capacity Analysis Module:
Vol/Sat: 0.00 0.15 0.00 0.02 0.32 0.00 0.00 0.00 0.00 0.25 0.00 0.09
Crit Moves: ****
Green/Cycle: 0.00 0.44 0.00 0.06 0.50 0.00 0.00 0.00 0.00 0.38 0.00 0.38
Volume/Cap: 0.00 0.33 0.00 0.33 0.65 0.00 0.00 0.00 0.00 0.65 0.00 0.22
Delay/Veh: 0.0 18.5 0.0 47.3 19.3 0.0 0.0 0.0 0.0 26.4 0.0 21.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 18.5 0.0 47.3 19.3 0.0 0.0 0.0 0.0 26.4 0.0 21.0
LOS by Move: A B A D B A A A A C A C
HCM2AvgQ: 0 6 0 1 14 0 0 0 0 12 0 3
Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsimplified Method (Future Volume Alternative)
Intersection #49 Mortimer (N/S) / Santa Ana Blvd (E/W)
Average Delay (sec/veh): 2.2 Worst Case Level Of Service: [C 20.3]
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 0 0 1 0 0 1 1 0 0 0 0 0 0 1 0 0 1 0
Volume Module:
Base Vol: 0 0 192 3 4 1 0 0 0 0 31 846 3
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 Base: 0 0 192 3 4 1 0 0 0 0 31 846 3
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 192 3 4 1 0 0 0 0 31 846 3
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: 0 0 192 3 4 1 0 0 0 0 31 846 3
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 192 3 4 1 0 0 0 0 31 846 3
Critical Gap Module:
Critical Gap: xxxxxx xxxxx 6.2 7.1 6.5 6.2 xxxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx
FollowUpTim: xxxxxx xxxxx 3.3 3.5 4.0 3.3 xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx
Capacity Module:
Conflict Vol: xxxxx xxxxx 0 910 910 848 xxxxx xxxxx xxxxxx 0 xxxxx xxxxxx
Potent Cap.: xxxxx xxxxx 900 258 277 365 xxxxx xxxxx xxxxxx 900 xxxxx xxxxxx
Move Cap.: xxxxx xxxxx 900 197 267 365 xxxxx xxxxx xxxxxx 900 xxxxx xxxxxx
Volume/Cap: xxxxx xxxxx 0.21 0.02 0.01 0.00 xxxxx xxxxx xxxxx 0.03 xxxxx xxxxx
Level Of Service Module:
2Way95thQ: xxxxx xxxxx 0.8 xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx
Control Del: xxxxxx xxxxx 10.1 xxxxxx xxxxx xxxxxx xxxxxx xxxxxx 9.1 xxxxx xxxxxx
LOS by Move: * * B * * * * * * * * * * A * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx 243 xxxxxx xxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Shared Queue: xxxxxx xxxxx xxxxxx xxxxxx 0.1 xxxxxx xxxxxx xxxxxx xxxxxx xxxxx xxxxx xxxxxx
Shred ConDel: xxxxxx xxxxx xxxxxx xxxxxx 20.3 xxxxxx xxxxxx xxxxxx xxxxxx xxxxx xxxxx xxxxxx
Shred LOS: * * * * * C * * * * * * * * * * * * * * *
ApproachDel: 10.1 20.3 xxxxxx xxxxxx xxxxxx
ApproachLOS: B C * * * * *
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study
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Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #50 Mortimer (N/S) / 5th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.287
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 9.0
Optimal Cycle: 0 Level Of Service: A

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 Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0

Volume Module:
Base Vol: 0 129 4 3 19 0 189 28 37 6 0 10
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 Base: 0 129 4 3 19 0 189 28 37 6 0 10
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 129 4 3 19 0 189 28 37 6 0 10
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: 0 129 4 3 19 0 189 28 37 6 0 10
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 129 4 3 19 0 189 28 37 6 0 10
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: 0 129 4 3 19 0 189 28 37 6 0 10

Saturation Flow Module:
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: 0.00 0.97 0.03 0.14 0.86 0.00 1.00 0.43 0.57 0.37 0.00 0.63
Final Sat.: 0 735 23 98 623 0 658 339 448 298 0 496

Capacity Analysis Module:
Vol/Sat: xxxxx 0.18 0.18 0.03 0.03 xxxxx 0.29 0.08 0.08 0.02 xxxxx 0.02
Crit Moves: **** **

Delay/Veh: 0.0 8.5 8.5 7.9 7.9 0.0 10.2 7.6 7.6 7.4 0.0 7.4
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 8.5 8.5 7.9 7.9 0.0 10.2 7.6 7.6 7.4 0.0 7.4
LOS by Move: * A A A * B A A * A
ApproachDel: 8.5 7.9 9.5 7.4
Delay Adj: 1.00 1.00 1.00 1.00
ApprAdjDel: 8.5 7.9 9.5 7.4
LOS by Appr: A A A A
AllWayAvgQ: 0.2 0.2 0.2 0.0 0.0 0.0 0.4 0.1 0.1 0.0 0.0 0.0

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

Traffic 7.9.0415 (c) 2007 Dowling Assoc. Licensed to KATZ OKITSU, TUSTIN, CA

Santa Ana Renaissance Specific Plan Traffic Study
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Scenario Report
Scenario: 2030NPPM
Command: 2030NP PM
Volume: 2030NPPM
Geometry: Future
Impact Fee: Default Impact Fee
Trip Generation: Default Trip Generation
Trip Distribution: Default Trip Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Santa Ana Renaissance Specific Plan Traffic Study
2030 Without Project PM

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change
	Del/ LOS	V/ Veh	Del/ LOS	V/ Veh	
# 1 Flower St (NS) / Civic Center D	A	0.734	C	0.734	+ 0.000 V/C
# 2 Flower St (N/S) / Santa Ana Bl	A	0.587	A	0.587	+ 0.000 V/C
# 3 Parton St (E/W) / Santa Ana Bl	A	0.372	A	0.372	+ 0.000 V/C
# 4 Ross St (N/S) / Civic Center D	A	0.474	A	0.474	+ 0.000 V/C
# 5 Ross St (N/S) / Santa Ana Bl (	A	0.395	A	0.395	+ 0.000 V/C
# 6 Ross St (N/S) / 4th St (E/W)	B	12.3 0.000	B	12.3 0.000	+ 0.000 D/V
# 7 Broadway (N/S) / Civic Center	B	0.643	B	0.643	+ 0.000 V/C
# 8 Broadway (N/S) / Santa Ana Bl	A	0.522	A	0.522	+ 0.000 V/C
# 9 Broadway (N/S) / 5th St (E/W)	A	0.462	A	0.462	+ 0.000 V/C
# 10 Broadway (N/S) / 4th St (E/W)	A	0.409	A	0.409	+ 0.000 V/C
# 11 Broadway (N/S) / 3rd st (E/W)	B	0.613	B	0.613	+ 0.000 V/C
# 12 Broadway (N/S) / 1st St (E/W)	C	0.729	C	0.729	+ 0.000 V/C
# 13 Sycamore St (N/S) / Civic Cent	A	0.495	A	0.495	+ 0.000 V/C
# 14 Sycamore St (N/S) / Santa Ana	C	20.8 0.000	C	20.8 0.000	+ 0.000 D/V
# 15 Sycamore St (N/S) / 5th St (E/	B	13.7 0.000	B	13.7 0.000	+ 0.000 D/V
# 16 Sycamore St (N/S) / 4th St (E/	A	9.1 0.365	A	9.1 0.365	+ 0.000 V/C
# 17 Main St (N/S) / Civic Center D	C	0.750	C	0.750	+ 0.000 V/C
# 18 Main St (N/S) / Santa Ana Dr (	B	0.693	B	0.693	+ 0.000 V/C
# 19 Main St (N/S) / 5th St (E/W)	B	0.633	B	0.633	+ 0.000 V/C
# 20 Main St (N/S) / 4th St (E/W)	B	0.654	B	0.654	+ 0.000 V/C
# 21 Main St (N/S) / 3rd St (E/W)	B	0.603	B	0.603	+ 0.000 V/C
# 22 Main St (N/S) / 1st St (E/W)	D	0.872	D	0.872	+ 0.000 V/C
# 23 Bush St (N/S) / Santa Ana Bl (	A	0.403	A	0.403	+ 0.000 V/C
# 24 Bush St (N/S) / 5th St (E/W)	A	0.442	A	0.442	+ 0.000 V/C

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM

Table with columns: Intersection, Base Del/V LOS Veh, Future Del/V LOS Veh, Change in. Rows include intersections like # 25 Bush St (N/S) / 4th St (E/W) through # 50 Mortimer (N/S) / 5th St (E/W).

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Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM

Level Of Service Computation Report for Intersection #1 Flower St (NS) / Civic Center Dr (E/W). Includes Cycle (sec), Loss Time (sec), Optimal Cycle, Approach, Control, Saturation Flow Module, and Capacity Analysis Module.

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Level Of Service Computation Report for Intersection #2 Flower St (N/S) / Santa Ana Bl (E/W). Includes Cycle (sec), Loss Time (sec), Optimal Cycle, Approach, Control, Saturation Flow Module, and Capacity Analysis Module.

Traffic 7.9.0415 (c) 2007 Dowling Assoc. Licensed to KATZ OKITSU, TUSTIN, CA

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM

Level Of Service Computation Report for Intersection #3 Parton St (E/W) / Santa Ana Bl (E/W). Includes Cycle (sec), Loss Time (sec), Optimal Cycle, Approach, Control, Saturation Flow Module, and Capacity Analysis Module.

Traffic 7.9.0415 (c) 2007 Dowling Assoc. Licensed to KATZ OKITSU, TUSTIN, CA

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. Intersection #4 Ross St (N/S) / Civic Center Dr (E/W). Table with columns for North Bound, South Bound, East Bound, West Bound. Rows include Cycle, Loss Time, Optimal Cycle, Approach, Movement, Control, Rights, Lanes, Volume Module, Sat/Lane, Adjustment, Lanes, Final Sat., Capacity Analysis Module, Vol/Sat, Crit Moves.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. Intersection #5 Ross St (N/S) / Santa Ana Bl (E/W). Table with columns for North Bound, South Bound, East Bound, West Bound. Rows include Cycle, Loss Time, Optimal Cycle, Approach, Movement, Control, Rights, Lanes, Volume Module, Sat/Lane, Adjustment, Lanes, Final Sat., Capacity Analysis Module, Vol/Sat, Crit Moves.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. Intersection #6 Ross St (N/S) / 4th St (E/W). Table with columns for North Bound, South Bound, East Bound, West Bound. Rows include Average Delay, Approach, Movement, Control, Rights, Lanes, Volume Module, Sat/Lane, Adjustment, Lanes, Final Sat., Capacity Analysis Module, Vol/Sat, Crit Moves, Critical Gap Module, Capacity Module, Conflict Vol, Potent Cap, Move Cap, Volume/Cap, Level Of Service Module, 2Way95thp, Control Del, LOS by Move, Movement, Shared Cap, Shared Queue, Shared ConDel, Shared LOS, ApproachDel, ApproachLOS.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. Intersection #7 Broadway (N/S) / Civic Center Dr (E/W). Table with columns for North Bound, South Bound, East Bound, West Bound. Rows include Cycle, Loss Time, Optimal Cycle, Approach, Movement, Control, Rights, Lanes, Volume Module, Sat/Lane, Adjustment, Lanes, Final Sat., Capacity Analysis Module, Vol/Sat, Crit Moves, Critical Gap Module, Capacity Module, Conflict Vol, Potent Cap, Move Cap, Volume/Cap, Level Of Service Module, 2Way95thp, Control Del, LOS by Move, Movement, Shared Cap, Shared Queue, Shared ConDel, Shared LOS, ApproachDel, ApproachLOS.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative) Intersection #8 Broadway (N/S) / Santa Ana Bl (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.522 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 25 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative) Intersection #9 Broadway (N/S) / 5th St (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.462 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 22 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative) Intersection #10 Broadway (N/S) / 4th St (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.409 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 20 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative) Intersection #11 Broadway (N/S) / 3rd St (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.613 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 30 Level Of Service: B

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. Intersection #12 Broadway (N/S) / 1st St (E/W). Table with columns for Approach (North, South, East, West Bound), Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. Intersection #13 Sycamore St (N/S) / Civic Center Dr (E/W). Table with columns for Approach (North, South, East, West Bound), Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. Intersection #14 Sycamore St (N/S) / Santa Ana Bl (E/W). Table with columns for Approach (North, South, East, West Bound), Control, Rights, Lanes, Volume Module, Critical Gap Module, Capacity Module, Level Of Service Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. Intersection #15 Sycamore St (N/S) / 5th St (E/W). Table with columns for Approach (North, South, East, West Bound), Control, Rights, Lanes, Volume Module, Critical Gap Module, Capacity Module, Level Of Service Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)
Intersection #16 Sycamore St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.365
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 9.1
Optimal Cycle: 36 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 0 0 1 0 0 0 1 0 0 0 1 0 0 0
Volume Module:
Base Vol: 3 8 81 19 9 23 20 139 19 88 179 22
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: 3 8 81 19 9 23 20 139 19 88 179 22
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 3 8 81 19 9 23 20 139 19 88 179 22
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: 3 8 81 19 9 23 20 139 19 88 179 22
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 3 8 81 19 9 23 20 139 19 88 179 22
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: 3 8 81 19 9 23 20 139 19 88 179 22
Saturation Flow Module:
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: 0.03 0.09 0.88 0.37 0.18 0.45 0.11 0.78 0.11 0.30 0.62 0.08
Final Sat.: 24 64 650 253 120 306 87 604 83 241 490 60
Capacity Analysis Module:
Vol/Sat: 0.12 0.12 0.12 0.08 0.08 0.08 0.23 0.23 0.23 0.37 0.37 0.37
Crit Moves: ****
Delay/Veh: 8.0 8.0 8.0 8.2 8.2 8.2 8.8 8.8 8.8 9.9 9.9 9.9
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 8.0 8.0 8.0 8.2 8.2 8.2 8.8 8.8 8.8 9.9 9.9 9.9
LOS by Move: A A A A A A A A A A A A
ApproachDel: 8.0 8.2 8.8 8.8 9.9
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 8.0 8.2 8.8 9.9
LOS by Appr: A A A A
AllWayAvgQ: 0.1 0.1 0.1 0.1 0.1 0.1 0.3 0.3 0.3 0.5 0.5 0.5
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #17 Main St (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.750
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 43 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 1
Volume Module:
Base Vol: 108 1044 89 72 1009 89 138 804 119 61 405 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: 108 1044 89 72 1009 89 138 804 119 61 405 70
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 108 1044 89 72 1009 89 138 804 119 61 405 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: 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: 108 1044 89 72 1009 89 138 804 119 61 405 70
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 108 1044 89 72 1009 89 138 804 119 61 405 70
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 1044 89 72 1009 89 138 804 119 61 405 70
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 1.84 0.16 1.00 1.84 0.16 1.00 1.74 0.26 1.00 1.71 0.29
Final Sat.: 1598 3133 267 1598 3124 276 1598 2962 438 1598 2899 501
Capacity Analysis Module:
Vol/Sat: 0.07 0.33 0.33 0.05 0.32 0.32 0.09 0.27 0.27 0.04 0.14 0.14
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #18 Main St (N/S) / Santa Ana Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.693
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 36 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 1 0 2 0 0 0 0 1 1 0 0 1 1 1 0
Volume Module:
Base Vol: 80 1273 0 0 1263 70 0 0 0 84 833 108
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 1273 0 0 1263 70 0 0 0 84 833 108
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 80 1273 0 0 1263 70 0 0 0 84 833 108
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: 80 1273 0 0 1263 70 0 0 0 84 833 108
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 80 1273 0 0 1263 70 0 0 0 84 833 108
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: 80 1273 0 0 1263 70 0 0 0 84 833 108
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 2.00 0.00 0.00 1.89 0.11 0.00 0.00 0.00 0.24 2.44 0.32
Final Sat.: 1598 3400 0 0 3221 179 0 0 0 418 4145 537
Capacity Analysis Module:
Vol/Sat: 0.05 0.37 0.00 0.00 0.39 0.39 0.00 0.00 0.00 0.05 0.20 0.20
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #19 Main St (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.633
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 31 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 0 0 1 1 0 1 0 2 0 0 0 1 1 1 0 0 0 0
Volume Module:
Base Vol: 0 1251 26 84 1222 0 109 611 69 0 0 0 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 1.00
Initial Bse: 0 1251 26 84 1222 0 109 611 69 0 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 1251 26 84 1222 0 109 611 69 0 0 0 0
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 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 1.00
PHF Volume: 0 1251 26 84 1222 0 109 611 69 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1251 26 84 1222 0 109 611 69 0 0 0 0
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 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 1.00
FinalVolume: 0 1251 26 84 1222 0 109 611 69 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1700 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 0.94
Lanes: 0.00 1.96 0.04 1.00 2.00 0.00 0.41 2.33 0.26 0.00 0.00 0.00 0.00
Final Sat.: 0 3331 69 1598 3400 0 705 3949 446 0 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.00 0.38 0.38 0.05 0.36 0.00 0.06 0.15 0.15 0.00 0.00 0.00 0.00
Crit Moves: ****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #20 Main St (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.654
 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 33 Level Of Service: B

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
 Lanes: 0 0 1 1 0 0 0 1 1 0 0 0 0 1 0

Volume Module:
 Base Vol: 0 1260 55 0 1247 51 0 203 50 0 303 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
 Initial Base: 0 1260 55 0 1247 51 0 203 50 0 303 66
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 0 1260 55 0 1247 51 0 203 50 0 303 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
 PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Volume: 0 1260 55 0 1247 51 0 203 50 0 303 66
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 0 1260 55 0 1247 51 0 203 50 0 303 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
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 FinalVolume: 0 1260 55 0 1247 51 0 203 50 0 303 66

Saturation Flow Module:
 Sat/Lane: 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: 0.00 1.92 0.08 0.00 1.92 0.08 0.00 0.80 0.20 0.00 0.82 0.18
 Final Sat.: 0 3258 142 0 3266 134 0 1364 336 0 1396 304

Capacity Analysis Module:
 Vol/Sat: 0.00 0.39 0.39 0.00 0.38 0.38 0.00 0.15 0.15 0.00 0.22 0.22
 Crit Moves: ****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #21 Main St (N/S) / 3rd St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.603
 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 29 Level Of Service: B

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
 Lanes: 0 0 1 1 0 0 0 1 1 0 1 0 0 1 0

Volume Module:
 Base Vol: 0 1230 44 0 1256 57 46 164 43 41 195 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
 Initial Base: 0 1230 44 0 1256 57 46 164 43 41 195 40
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 0 1230 44 0 1256 57 46 164 43 41 195 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
 PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Volume: 0 1230 44 0 1256 57 46 164 43 41 195 40
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 0 1230 44 0 1256 57 46 164 43 41 195 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
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 FinalVolume: 0 1230 44 0 1256 57 46 164 43 41 195 40

Saturation Flow Module:
 Sat/Lane: 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: 0.00 1.93 0.07 0.00 1.91 0.09 1.00 0.79 0.21 1.00 0.83 0.17
 Final Sat.: 0 3283 117 0 3252 148 1598 1347 353 1598 1411 289

Capacity Analysis Module:
 Vol/Sat: 0.00 0.37 0.37 0.00 0.39 0.39 0.03 0.12 0.12 0.03 0.14 0.14
 Crit Moves: ****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #22 Main St (N/S) / 1st St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.872
 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 73 Level Of Service: D

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: Include Include Include Include
 Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
 Lanes: 1 0 1 1 0 1 0 2 0 1 1 0 2 1 0

Volume Module:
 Base Vol: 213 1028 88 189 957 155 172 1198 95 114 1290 77
 Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Initial Base: 213 1028 88 189 957 155 172 1198 95 114 1290 77
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 213 1028 88 189 957 155 172 1198 95 114 1290 77
 User Adj: 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
 PHF Volume: 213 1028 88 189 957 155 172 1198 95 114 1290 77
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 213 1028 88 189 957 155 172 1198 95 114 1290 77
 PCE Adj: 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
 FinalVolume: 213 1028 88 189 957 155 172 1198 95 114 1290 77

Saturation Flow Module:
 Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
 Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 1.00
 Lanes: 1.00 1.84 0.16 1.00 2.00 1.00 1.00 2.78 0.22 1.00 2.83 0.17
 Final Sat.: 1598 3132 268 1598 3400 1598 1598 4725 375 1598 4813 287

Capacity Analysis Module:
 Vol/Sat: 0.13 0.33 0.33 0.12 0.28 0.10 0.11 0.25 0.25 0.07 0.27 0.27
 Crit Moves: ****

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Santa Ana Renaissance Specific Plan Traffic Study
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #23 Bush St (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.403
 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 20 Level Of Service: A

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
 Lanes: 1 0 1 0 0 0 0 0 1 0 0 0 0 0 1 1 1 0

Volume Module:
 Base Vol: 43 327 0 0 211 36 0 0 0 34 724 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
 Initial Base: 43 327 0 0 211 36 0 0 0 34 724 63
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 43 327 0 0 211 36 0 0 0 34 724 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
 PHF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 PHF Volume: 43 327 0 0 211 36 0 0 0 34 724 63
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 43 327 0 0 211 36 0 0 0 34 724 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
 MLF Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 FinalVolume: 43 327 0 0 211 36 0 0 0 34 724 63

Saturation Flow Module:
 Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
 Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00
 Lanes: 1.00 1.00 0.00 0.00 0.85 0.15 0.00 0.00 0.00 0.12 2.65 0.23
 Final Sat.: 1598 1700 0 0 1452 248 0 0 0 211 4497 391

Capacity Analysis Module:
 Vol/Sat: 0.03 0.19 0.00 0.00 0.15 0.15 0.00 0.00 0.00 0.02 0.16 0.16
 Crit Moves: ****

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Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. Intersection #24 Bush St (N/S) / 5th St (E/W). Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. Intersection #25 Bush St (N/S) / 4th St (E/W). Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. Intersection #26 Spurgeon St (N/S) / 1st St (E/W). Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Critical Gap Module, Capacity Module, Level Of Service Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. Intersection #27 French St (N/S) / Santa Ana Bl (E/W). Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Critical Gap Module, Capacity Module, Level Of Service Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #28 French St (N/S) / 4th St (E/W). Table with columns for North Bound, South Bound, East Bound, West Bound. Rows include Cycle, Loss Time, Optimal Cycle, Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #29 Lacy St (N/S) / Civic Center Dr (E/W). Table with columns for North Bound, South Bound, East Bound, West Bound. Rows include Average Delay, Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #30 Lacy at (N/S) / Santa Ana Bl (E/W). Table with columns for North Bound, South Bound, East Bound, West Bound. Rows include Average Delay, Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #31 Lacy St (N/S) / Brown St (E/W). Table with columns for North Bound, South Bound, East Bound, West Bound. Rows include Cycle, Loss Time, Optimal Cycle, Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. 2000 HCM 4-Way Stop Method (Future Volume Alternative). Intersection #32 Lacy St (N/S) / 4th St (E/W). Cycle (sec): 100. Critical Vol./Cap.(X): 0.567. Loss Time (sec): 5 (Y+R=4.0 sec). Average Delay (sec/veh): xxxxxxx. Optimal Cycle: 27. Level Of Service: A. Approach: North Bound, South Bound, East Bound, West Bound. Control: Stop Sign. Rights: Include. Lanes: 1 0 1 0 1. Volume Module: Base Vol: 45 79 68 56 32 11. Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00. Initial Base: 45 79 68 56 32 11. Added Vol: 0 0 0 0 0 0. PasserByVol: 0 0 0 0 0 0. Initial Fut: 45 79 68 56 32 11. User Adj: 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. PHF Volume: 45 79 68 56 32 11. Reduced Vol: 0 0 0 0 0 0. Reduced Vol: 45 79 68 56 32 11. PCE Adj: 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. FinalVolume: 45 79 68 56 32 11. Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700. Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00. Lanes: 0.23 0.42 0.35 0.57 0.32 0.11. Final Sat.: 398 699 602 962 549 189. Capacity Analysis Module: Vol/Sat: 0.03 0.11 0.11 0.03 0.06 0.06 0.00 0.28 0.28 0.09 0.35 0.07. Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #33 Lacy St (N/S) / 1st St (E/W). Cycle (sec): 100. Critical Vol./Cap.(X): 0.567. Loss Time (sec): 5 (Y+R=4.0 sec). Average Delay (sec/veh): xxxxxxx. Optimal Cycle: 27. Level Of Service: A. Approach: North Bound, South Bound, East Bound, West Bound. Control: Stop Sign. Rights: Include. Lanes: 1 0 1 0 1. Volume Module: Base Vol: 0 0 0 10 0 130 184 1427 0 0 0 1457 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 1.00. Initial Base: 0 0 0 10 0 130 184 1427 0 0 0 1457 40. Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0. PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0. Initial Fut: 0 0 0 10 0 130 184 1427 0 0 0 1457 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 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 1.00. PHF Volume: 0 0 0 10 0 130 184 1427 0 0 0 1457 40. Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0. FinalVolume: 0 0 0 10 0 130 184 1427 0 0 0 1457 40. Critical Gap Module: Critical Gap: 7.5 6.5 6.9 6.8 6.5 6.9 4.1 xxxxx xxxxxx xxxxxx xxxxxx xxxxxx. FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxxx xxxxxx xxxxxx xxxxxx. Capacity Module: Right of Way: 2281 3292 476 2321 3272 506 1497 xxxxx xxxxxx xxxxx xxxxx xxxxxx. Potent Cap.: 22 9 541 32 9 517 454 xxxxx xxxxxx xxxxx xxxxx xxxxxx. Move Cap.: 11 5 541 22 5 517 454 xxxxx xxxxxx xxxxx xxxxx xxxxxx. Volume/Cap: 0.00 0.00 0.00 0.45 0.00 0.25 0.41 xxxxx xxxxx xxxxx xxxxx xxxxx. Level of Service Module: Wway55HQ: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx 1.9 xxxxx xxxxxx xxxxx xxxxx xxxxxx. Control Del: xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 18.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx. LOS by Move: * * * * * C * * * * *. Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT. Shared Cap.: xxxxx 0 xxxxxx xxxxx 199 xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx. SharedQueue: xxxxxx xxxxx xxxxxx xxxxxx 4.4 xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx. Shared Comb: xxxxxx xxxxx xxxxxx xxxxxx 57.2 xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx. Shared LOS: * * * * * F * * * * *. ApproachDel: xxxxxx 57.2 xxxxxx xxxxxx. ApproachLOS: * * * * * F * * * * *. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. 2000 HCM 4-Way Stop Method (Future Volume Alternative). Intersection #34 Santiago St (N/S) / Washington Av (E/W). Cycle (sec): 100. Critical Vol./Cap.(X): 0.930. Loss Time (sec): 5 (Y+R=4.0 sec). Average Delay (sec/veh): 26.9. Optimal Cycle: 27. Level Of Service: D. Approach: North Bound, South Bound, East Bound, West Bound. Control: Stop Sign. Rights: Include. Lanes: 1 0 1 0 1. Volume Module: Base Vol: 65 312 174 24 200 125 260 190 21 50 146 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 Base: 65 312 174 24 200 125 260 190 21 50 146 36. Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0. PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0. Initial Fut: 65 312 174 24 200 125 260 190 21 50 146 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: 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: 65 312 174 24 200 125 260 190 21 50 146 36. Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0. Reduced Vol: 65 312 174 24 200 125 260 190 21 50 146 36. 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: 65 312 174 24 200 125 260 190 21 50 146 36. Saturation Flow Module: 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 0.56 0.40 0.04 0.22 0.63 0.15. Final Sat.: 429 458 502 407 432 472 280 204 23 97 282 69. Capacity Analysis Module: Vol/Sat: 0.15 0.68 0.35 0.06 0.46 0.27 0.93 0.93 0.93 0.52 0.52 0.52. Crit Moves: ****. Delay/Veh: 12.2 24.1 13.1 11.7 16.9 12.4 49.3 49.3 49.3 17.8 17.8 17.8. Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. AdjDel/Veh: 12.2 24.1 13.1 11.7 16.9 12.4 49.3 49.3 49.3 17.8 17.8 17.8. LOS by Move: B C B B C B E E E C C C. ApproachDel: 19.3 14.9 49.3 17.8. Delay Adj: 1.00 1.00 1.00 1.00. ApprAdjDel: 19.3 14.9 49.3 17.8. LOS by Appr: C B E C B. AllWayAvg: 0.2 1.8 0.5 0.1 0.7 0.3 5.5 5.5 5.5 0.9 0.9 0.9. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM. Level Of Service Computation Report. 2000 HCM 4-Way Stop Method (Future Volume Alternative). Intersection #35 Santiago St (N/S) / Civic Center Dr (E/W). Cycle (sec): 100. Critical Vol./Cap.(X): 0.795. Loss Time (sec): 5 (Y+R=4.0 sec). Average Delay (sec/veh): 26.3. Optimal Cycle: 27. Level Of Service: D. Approach: North Bound, South Bound, East Bound, West Bound. Control: Stop Sign. Rights: Include. Lanes: 1 0 1 0 1. Volume Module: Base Vol: 203 240 34 15 235 143 311 57 408 32 34 13. 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 Base: 203 240 34 15 235 143 311 57 408 32 34 13. Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0. PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0. Initial Fut: 203 240 34 15 235 143 311 57 408 32 34 13. 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: 203 240 34 15 235 143 311 57 408 32 34 13. Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0. Reduced Vol: 203 240 34 15 235 143 311 57 408 32 34 13. 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: 203 240 34 15 235 143 311 57 408 32 34 13. Saturation Flow Module: 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 0.88 0.12 1.00 0.62 0.38 0.85 0.15 1.00 0.41 0.43 0.16. Final Sat.: 437 413 59 424 295 180 392 72 541 158 168 64. Capacity Analysis Module: Vol/Sat: 0.46 0.58 0.58 0.04 0.80 0.80 0.79 0.79 0.75 0.20 0.20 0.20. Crit Moves: ****. Delay/Veh: 17.4 19.7 19.7 11.2 32.3 32.3 33.5 33.5 26.2 13.6 13.6 13.6. Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. AdjDel/Veh: 17.4 19.7 19.7 11.2 32.3 32.3 33.5 33.5 26.2 13.6 13.6 13.6. LOS by Move: C C C C B D D D D D B B. ApproachDel: 18.7 29.6 31.5 29.6. Delay Adj: 1.00 1.00 1.00 1.00. ApprAdjDel: 18.7 29.6 31.5 29.6. LOS by Appr: C D D B. AllWayAvg: 0.8 1.2 1.2 0.0 2.9 2.9 3.0 3.0 2.5 0.2 0.2 0.2. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study
2030 Without Project PM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #36 Santiago St (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.677
 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 35 Level Of Service: B

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

Volume Module:
 Base Vol: 35 99 77 395 197 109 65 784 53 120 677 322
 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: 35 99 77 395 197 109 65 784 53 120 677 322
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 35 99 77 395 197 109 65 784 53 120 677 322
 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: 35 99 77 395 197 109 65 784 53 120 677 322
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 35 99 77 395 197 109 65 784 53 120 677 322
 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: 35 99 77 395 197 109 65 784 53 120 677 322

Saturation Flow Module:
 Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
 Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94
 Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
 Final Sat.: 1598 1700 1598 1598 1700 1598 1598 1815 215 1598 3400 1598

Capacity Analysis Module:
 Vol/Sat: 0.02 0.06 0.05 0.25 0.12 0.07 0.04 0.25 0.25 0.08 0.20 0.20
 Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
2030 Without Project PM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #40 Standard Av (N/S) / 1st St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.833
 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 60 Level Of Service: D

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
 Lanes: 1 0 0 1 0 0 0 1 1 0 1 0 1 1 0 1

Volume Module:
 Base Vol: 202 314 149 19 246 28 86 1344 84 102 1364 12
 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: 202 314 149 19 246 28 86 1344 84 102 1364 12
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 202 314 149 19 246 28 86 1344 84 102 1364 12
 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: 202 314 149 19 246 28 86 1344 84 102 1364 12
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 202 314 149 19 246 28 86 1344 84 102 1364 12
 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: 202 314 149 19 246 28 86 1344 84 102 1364 12

Saturation Flow Module:
 Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
 Adjustment: 0.94 1.00 1.00 1.00 1.00 1.00 0.94 1.00 1.00 0.94 1.00 1.00
 Lanes: 1.00 0.68 0.32 0.06 0.84 0.10 1.00 1.88 0.12 1.00 1.98 0.02
 Final Sat.: 1598 1153 547 110 1427 162 1598 3200 200 1598 3370 30

Capacity Analysis Module:
 Vol/Sat: 0.13 0.27 0.27 0.01 0.17 0.17 0.05 0.42 0.42 0.06 0.40 0.40
 Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
2030 Without Project PM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #42 Grand Av (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.972
 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 100 Level Of Service: E

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 Split Phase Split Phase
 Rights: Include Include Include Include
 Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
 Lanes: 1 0 2 1 0 1 0 2 0 2 2 0 1 0 2 0 1 0 1 0

Volume Module:
 Base Vol: 254 2038 13 53 968 687 358 118 438 43 210 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: 254 2038 13 53 968 687 358 118 438 43 210 81
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 254 2038 13 53 968 687 358 118 438 43 210 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: 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: 254 2038 13 53 968 687 358 118 438 43 210 81
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 254 2038 13 53 968 687 358 118 438 43 210 81
 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: 254 2038 13 53 968 687 358 118 438 43 210 81

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 0.94 0.94 1.00 0.94 1.00 0.94 1.00
 Lanes: 1.00 2.98 0.02 1.00 2.00 2.00 2.00 1.00 2.00 0.26 1.26 0.48
 Final Sat.: 1598 5068 32 1598 3400 3196 3196 1700 3196 438 2138 825

Capacity Analysis Module:
 Vol/Sat: 0.16 0.40 0.40 0.03 0.28 0.21 0.11 0.07 0.14 0.10 0.10 0.10
 Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
2030 Without Project PM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #43 Grand Av (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.728
 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
 Optimal Cycle: 40 Level Of Service: C

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: Include Include Include Include
 Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
 Lanes: 1 0 3 0 1 1 0 2 1 0 1 0 1 1 0 2 0 1

Volume Module:
 Base Vol: 161 1159 84 140 830 88 178 609 88 253 792 173
 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: 161 1159 84 140 830 88 178 609 88 253 792 173
 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
 Initial Fut: 161 1159 84 140 830 88 178 609 88 253 792 173
 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: 161 1159 84 140 830 88 178 609 88 253 792 173
 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
 Reduced Vol: 161 1159 84 140 830 88 178 609 88 253 792 173
 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: 161 1159 84 140 830 88 178 609 88 253 792 173

Saturation Flow Module:
 Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
 Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 1.00 0.94 1.00 0.94
 Lanes: 1.00 3.00 1.00 1.00 2.71 0.29 1.00 1.75 0.25 1.00 2.00 1.00
 Final Sat.: 1598 5100 1598 1598 4611 489 1598 2971 429 1598 3400 1598

Capacity Analysis Module:
 Vol/Sat: 0.10 0.23 0.05 0.09 0.18 0.18 0.11 0.20 0.21 0.16 0.23 0.11
 Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
Intersection #44 Grand Av (N/S) / 1st St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.777
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 48 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 2 0 2 1 0 2 0 3 0 1 2 0 2 1 0 2 0 2 0 1
Volume Module:
Base Vol: 131 1390 159 105 1065 94 197 1244 122 244 1118 46
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: 131 1390 159 105 1065 94 197 1244 122 244 1118 46
Added Vol: 0
PasserByVol: 0
Initial Fut: 131 1390 159 105 1065 94 197 1244 122 244 1118 46
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: 131 1390 159 105 1065 94 197 1244 122 244 1118 46
Reduct Vol: 0
Reduced Vol: 131 1390 159 105 1065 94 197 1244 122 244 1118 46
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: 131 1390 159 105 1065 94 197 1244 122 244 1118 46
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94
Lanes: 2.00 2.69 0.31 2.00 3.00 1.00 2.00 2.73 0.27 2.00 2.00 1.00
Final Sat.: 3196 4577 523 3196 5100 1598 3196 4645 455 3196 3400 1598
Capacity Analysis Module:
Vol/Sat: 0.04 0.30 0.30 0.03 0.21 0.06 0.06 0.27 0.27 0.08 0.33 0.03
Crit Moves: ****

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Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
Intersection #45 Penn Way (NS) at I-5 SB Ramps (EW)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.458
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 23.5
Optimal Cycle: 38 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Split Phase Split Phase Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 2 0 1 2 0 2 0 0 0 0 0 0 0 0 1 0 0 0 2
Volume Module:
Base Vol: 0 190 173 617 71 0 0 0 0 0 175 0 257
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: 0 190 173 617 71 0 0 0 0 0 175 0 257
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 190 173 617 71 0 0 0 0 0 175 0 257
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: 0 190 173 617 71 0 0 0 0 0 175 0 257
Reduct Vol: 0
Reduced Vol: 0 190 173 617 71 0 0 0 0 0 175 0 257
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: 0 190 173 617 71 0 0 0 0 0 175 0 257
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.95 0.85 0.92 0.95 1.00 1.00 1.00 1.00 0.77 1.00 0.75
Lanes: 0.00 2.00 1.00 2.00 2.00 0.00 0.00 0.00 0.00 1.00 0.00 2.00
Final Sat.: 0 3610 1615 3502 3610 0 0 0 0 1461 0 2842
Capacity Analysis Module:
Vol/Sat: 0.00 0.05 0.11 0.18 0.02 0.00 0.00 0.00 0.00 0.12 0.00 0.09
Crit Moves: ****
Green/Cycle: 0.00 0.23 0.23 0.38 0.38 0.00 0.00 0.00 0.00 0.26 0.00 0.65
Volume/Cap: 0.00 0.23 0.46 0.46 0.05 0.00 0.00 0.00 0.46 0.00 0.14
Delay/Veh: 0 31.1 33.8 23.2 19.3 0.0 0.0 0.0 0.0 31.9 0.0 6.9
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 31.1 33.8 23.2 19.3 0.0 0.0 0.0 0.0 31.9 0.0 6.9
LOS by Move: A C C C B A A A A C A A
HCM2kAvgQ: 0 3 5 7 1 0 0 0 0 5 0 2
Note: Queue reported is the number of cars per lane.

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Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
Intersection #46 I-5 SB Ramps (NS) / Santa Ana Bl (EW)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.520
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 28.3
Optimal Cycle: 42 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Split Phase Split Phase Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 0 0 0 2 0 0 0 1 2 0 3 0 0 0 0 0 2 1 0
Volume Module:
Base Vol: 0 0 0 295 0 160 440 737 0 0 847 237
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 0 295 0 160 440 737 0 0 847 237
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 0 0 295 0 160 440 737 0 0 847 237
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: 0 0 0 295 0 160 440 737 0 0 847 237
Reduct Vol: 0
Reduced Vol: 0 0 0 295 0 160 440 737 0 0 847 237
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: 0 0 0 295 0 160 440 737 0 0 847 237
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.92 1.00 0.85 0.92 0.91 1.00 1.00 0.88 0.88
Lanes: 0.00 0.00 0.00 2.00 0.00 1.00 2.00 3.00 0.00 0.00 2.34 0.66
Final Sat.: 0 0 0 3502 0 1615 3502 5187 0 0 3919 1097
Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.08 0.00 0.10 0.13 0.14 0.00 0.00 0.22 0.22
Crit Moves: ****
Green/Cycle: 0.00 0.00 0.00 0.19 0.00 0.19 0.27 0.27 0.00 0.00 0.42 0.42
Volume/Cap: 0.00 0.00 0.00 0.44 0.00 0.52 0.46 0.52 0.00 0.00 0.52 0.52
Delay/Veh: 0.0 0.0 0.0 36.2 0.0 37.9 30.5 31.1 0.0 0.0 22.0 22.0
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 0.0 0.0 36.2 0.0 37.9 30.5 31.1 0.0 0.0 22.0 22.0
LOS by Move: A A A D A D C C A A C C
HCM2kAvgQ: 0 0 0 5 0 5 6 7 0 0 9 9
Note: Queue reported is the number of cars per lane.

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Santa Ana Renaissance Specific Plan Traffic Study 2030 Without Project PM

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
Intersection #47 I-5 NB Ramps (NS) / 17th St. (EW)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.958
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 40.7
Optimal Cycle: 100 Level Of Service: D
Approach: North Bound South Bound East Bound West Bound
Control: Split Phase Split Phase Protected Protected
Rights: Include Include Ignore Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 1 0 0 1 1 0 0 0 1 1 0 3 0 1 0 0 0 2 1 0
Volume Module:
Base Vol: 806 73 31 118 0 119 142 1341 398 0 2020 96
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: 806 73 31 118 0 119 142 1341 398 0 2020 96
Added Vol: 0
PasserByVol: 0
Initial Fut: 806 73 31 118 0 119 142 1341 398 0 2020 96
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: 806 73 31 118 0 119 142 1341 0 0 2020 96
Reduct Vol: 0
Reduced Vol: 806 73 31 118 0 119 142 1341 0 0 2020 96
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: 806 73 31 118 0 119 142 1341 0 0 2020 96
Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.96 0.96 0.85 0.95 1.00 0.85 0.95 0.91 1.00 1.00 0.90 0.90
Lanes: 1.83 0.17 1.00 1.00 0.00 1.00 1.00 3.00 1.00 0.00 2.86 0.14
Final Sat.: 3331 302 1615 1805 0 1615 1805 5187 1900 0 4917 234
Capacity Analysis Module:
Vol/Sat: 0.24 0.24 0.02 0.07 0.00 0.07 0.08 0.26 0.00 0.00 0.41 0.41
Crit Moves: ****
Green/Cycle: 0.25 0.25 0.25 0.08 0.00 0.08 0.08 0.51 0.00 0.00 0.43 0.43
Volume/Cap: 0.96 0.96 0.08 0.85 0.00 0.96 0.96 0.51 0.00 0.00 0.96 0.96
Delay/Veh: 57.1 57.1 28.6 82.0 0.0 113.6 107.0 16.3 0.0 0.0 38.8 38.8
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 57.1 57.1 28.6 82.0 0.0 113.6 107.0 16.3 0.0 0.0 38.8 38.8
LOS by Move: E E C F A F B A A D
HCM2kAvgQ: 18 18 1 6 0 7 8 10 0 0 29 29
Note: Queue reported is the number of cars per lane.

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APPENDIX F

General Plan Model Refinement Process

Location (Intersection) N/S Street / E/W Street / Civic Centre	Link	Base Year Model			Year 2030 Model			DIR*	0.36			Calib Adj Yr			Existing Count			Full Adjusted Volume		
		IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)		IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)
11 Broadway / 3rd	NB	0	2685	2312	3042	832	129	638	99	351	308	403	407							
	SB	3518	600	2988	2294	-191	610	-146	468	324	349	373	816							
	EB	1048	1282	9	64	-374	-439	-287	374	75	58	85	86							
	WB	0	0	118	27	43	10	33	8	58	76	67	87							
	Total	4567	4567	5427	5427	310	310	238	238	807	807	1045	1045							
		NB	236	1084	324	1018	32	-27	24	-21	439	452	505	520						
12 Broadway / 1st	NB	0	0	0	0	0	0	0	0	0	0	0	0							
	SB	2685	0	2442	2564	-87	923	-67	708	-403	515	463	592							
	EB	3812	3997	3133	3167	-244	-299	-187	-229	1407	886	1619	1018							
	WB	3700	5342	5121	4276	512	-384	392	-294	925	1322	1317	1520							
	Total	10433	10433	11021	11024	212	213	162	163	3175	3175	3651	3651							
		NB	0	0	776	652	279	235	214	180	125	94	144	108						
13 Sycamore / Civic Centre	NB	0	0	39	0	14	0	11	0	58	222	67	255							
	SB	0	0	1370	1812	483	652	378	500	531	657	610	756							
	EB	0	0	1039	761	374	274	287	210	723	464	831	534							
	WB	0	0	3224	3224	1161	1161	890	890	1437	1437	1652	1652							
	Total	0	0	545	612	196	220	151	169	39	100	45	115							
		NB	0	0	652	776	235	279	180	214	58	57	67	66						
14 Sycamore / Santa Ana	NB	0	0	0	0	0	0	0	0	0	0	0	0							
	SB	0	0	3488	0	1256	0	963	0	774	0	880	0							
	EB	0	0	4685	4688	1687	1688	1293	1294	871	871	1002	1002							
	WB	0	0	545	1039	196	374	151	287	48	47	55	54							
	Total	0	0	612	545	220	196	169	151	113	42	130	48							
		NB	0	0	2776	0	999	0	766	0	725	0	834	0						
15 Sycamore / 5th	NB	0	0	3933	3930	1416	1415	1086	1085	886	886	1019	1019							
	SB	0	0	0	0	6	0	2	0	2	13	47	41							
	EB	0	0	1039	545	374	196	287	151	36	48	15	54							
	WB	0	0	445	1973	160	710	123	544	64	85	148	71							
	Total	0	0	2518	1479	907	532	695	408	129	62	74	96							
		NB	0	0	4003	4003	1441	1441	1105	1105	229	195	263	224						
17 Main / Civic Centre	NB	3021	4085	3094	3591	26	-178	20	-136	1017	1094	1169	1258							
	SB	3933	2648	3188	2436	-268	-76	-206	-59	1173	917	1349	1054							
	EB	1015	1358	761	1039	-92	-115	-70	-88	626	833	720	958							
	WB	1009	885	770	742	-86	-51	-66	-39	610	580	701	867							
	Total	8979	8976	7612	7609	-420	-322	-322	-322	3424	3424	3938	3938							
		NB	3045	3597	3282	3170	85	-154	65	-118	895	1079	1241							
18 Main / Santa Ana	NB	4085	3021	3591	3094	-178	26	-136	20	1101	905	1266	925							
	SB	0	2048	0	3488	0	518	0	397	0	911	0	1047							
	EB	1536	0	2876	0	482	0	370	0	899	0	1268	0							
	WB	2506	3997	2597	3170	33	-154	25	-118	956	976	985	1123							
	Total	8667	8667	9748	9752	389	351	299	299	2895	2895	2895	3329							
		NB	3597	3045	3170	3282	-154	85	-118	65	1010	875	1161	940						
19 Main / 5th	NB	1527	0	2345	0	295	0	226	0	499	0	725	0							
	SB	0	985	0	1658	0	242	0	186	0	514	0	591							
	EB	7630	7627	8112	8109	173	173	133	133	2365	2365	2719	2719							
	Total	3273	3118	2797	3152	-171	12	-131	9	940	1025	966	1178							
		NB	3597	2506	3170	2597	-154	33	-118	25	1023	856	1176	881						
		SB	906	2842	1479	2518	206	-117	158	-89	102	131	260	151						
20 Main / 4th	NB	2185	1497	2161	1338	-9	-57	-7	-43	153	106	176	122							
	SB	9951	9954	9606	9606	-128	-129	-98	-99	2118	2118	2435	2435							
	Total	9951	9954	9606	9606	-128	-129	-98	-99	2118	2118	2435	2435							

Location (Intersection) N/S Street / E/W Street / Civic Centre	Link	Base Year Model			Year 2030 Model			DIR*	0.36			Calib Adj Yr			Existing Count			Full Adjusted Volume		
		IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)		IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)
1 Flower	NB	1094	1897	527	1245	-204	-235	-180	916	846	1053	973								
	SB	2355	921	2220	1012	-45	33	-34	25	846	783	900	843							
	EB	1748	2482	1973	2770	81	104	62	79	738	715	849	823							
	WB	2345	2239	2455	2155	39	-31	30	-23	575	731	662	841							
	Total	7542	7539	7185	7182	-129	-129	-99	3076	3076	3537	3537								
		NB	3315	3409	3542	4121	82	256	63	197	988	972	1137	1109						
2 Flower / Santa Ana	NB	1839	1348	1242	739	-215	-219	-165	168	993	1056	1142	1214							
	SB	1485	1476	2203	1779	259	109	198	84	675	390	873	474							
	EB	2852	3281	2891	3242	14	-7	11	-5	424	863	488	762							
	Total	9491	9494	8979	9882	140	140	107	107	3081	3081	3543	3543							
		NB	106	115	79	58	-10	-21	-8	16	916	846	1053	973						
		SB	0	0	1015	2439	365	878	280	673	846	783	973	900						
3 Parlon / Santa Ana	NB	3261	2852	3242	2891	-7	14	-5	11	738	715	849	823							
	SB	2967	3367	0	0	-1068	-1212	-819	-929	575	731	662	841							
	EB	6333	6333	4336	5386	-719	-340	-551	-261	3076	3076	3537	3537							
	Total	8118	2233	15	42	-289	-789	-222	-605	321	346	370	397							
		NB	1624	894	515	130	-389	-275	-306	-211	308	267	355	307						
		SB	2239	1348	1794	3279	-160	372	-123	285	654	769	752	1054						
4 Ross / Civic Centre	NB	3182	2394	3455	2230	98	-59	75	-45	740	642	850	738							
	SB	7864	7867	5779	5782	-751	-751	-575	-575	2023	2023	2327	2327							
	Total	776	1700	809	225	158	172	121	223	357	395	410								
		NB	970	2345	42	15	-334	-839	-256	-643	306	303	352	349						
		SB	3367	2967	2991	4048	-135	389	-104	289	606	469	666	768						
		WB	3417	2845																

Location (Intersection) N/S Street / EW Street	Link (In/Out)	Base Year Model (In/Out)	Year 2030 Model (In/Out)	Diff* (In/Out)	0.36		0.36		Existing Count (In/Out)	Fit Adjusted Volume (In/Out)				
					Callb Adj Yr (In/Out)	7 (In/Out)	30 (In/Out)	7 (In/Out)			30 (In/Out)			
31 Lacey / N/S Street / EW Street	NB	0	0	0	539	476	194	171	149	131	78	35	90	40
	SB	0	0	0	403	330	145	119	111	91	21	26	24	30
	EB	0	0	0	173	0	62	0	48	15	39	17	45	45
	WB	0	0	0	76	36	27	1	21	10	33	47	38	54
	Total	0	0	0	1018	1015	367	365	281	280	147	147	169	169
32 Lacey / N/S Street / EW Street	NB	0	0	0	167	470	60	169	46	130	120	54	138	63
	SB	0	0	0	476	579	171	194	131	148	59	43	68	50
	EB	0	0	0	1379	2136	496	769	381	590	284	408	327	469
	WB	0	0	0	2503	1382	901	497	691	381	385	343	443	394
	Total	0	0	0	4524	4527	1629	1630	1249	1250	848	848	976	976
33 Lacey / N/S Street / EW Street	NB	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB	0	0	0	421	206	152	74	116	57	85	182	98	209
	EB	0	0	0	3624	4497	1305	1619	1000	1241	1533	899	1763	1054
	WB	0	0	0	4188	3527	1508	1270	1156	974	845	1386	972	1594
	Total	0	0	0	8233	8230	2964	2963	2272	2272	2463	2467	2832	2837
34 Santeja / N/S Street / EW Street	NB	1239	1948	1976	3639	265	609	203	467	221	342	424	808	
	SB	1891	1197	3585	1700	610	181	468	139	292	244	760	383	
	EB	886	1057	167	521	-259	-193	-198	-148	245	324	282	373	
	WB	0	0	0	221	94	80	34	61	26	342	189	393	
	Total	4016	4203	5948	5955	696	631	533	483	1099	1099	1633	1563	
35 Santeja / N/S Street / EW Street	NB	1742	2121	2752	3964	363	663	279	509	406	453	685	961	
	SB	1948	1239	3936	2203	716	347	549	266	349	248	898	514	
	EB	173	506	15	345	-57	-58	-43	-44	339	428	300	493	
	WB	0	0	0	352	539	127	194	97	149	98	64	113	
	Total	3864	3867	7055	7052	1149	1147	881	879	1193	1193	2073	2072	
36 Santeja / N/S Street / EW Street	NB	0	0	0	2218	3370	799	1213	612	930	137	293	158	337
	SB	2121	1742	3964	2752	663	363	509	279	439	405	948	683	
	EB	1367	1718	2524	3203	417	535	319	410	450	942	769	1083	
	WB	3145	3173	4118	3500	350	118	268	90	121	657	1539	747	
	Total	6633	6633	12824	12824	2229	2229	1709	1709	2297	2297	4006	4006	
37 Santeja / N/S Street / EW Street	NB	0	0	0	0	0	0	0	0	0	25	20	29	23
	SB	0	0	0	0	0	0	0	0	0	197	86	227	99
	EB	0	0	0	0	0	0	0	0	0	89	142	102	163
	WB	0	0	0	0	0	0	0	0	0	0	63	0	72
	Total	0	0	0	0	0	0	0	0	0	311	311	358	358
38 Santeja / N/S Street / EW Street	NB	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
39 Santeja / N/S Street / EW Street	NB	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0
40 Santeja / N/S Street / EW Street	NB	0	0	0	1167	1673	420	602	322	462	341	440	392	506
	SB	0	0	0	2687	2048	971	737	744	565	292	257	336	295
	EB	0	0	0	3561	4300	1282	1548	983	1187	1506	933	1732	1073
	WB	0	0	0	5470	4873	1969	1754	1510	1345	934	1443	1074	1659
	Total	0	0	0	12894	12894	4642	4642	3559	3559	3073	3073	3534	3534

Location (Intersection) N/S Street / EW Street	Link (In/Out)	Base Year Model (In/Out)	Year 2030 Model (In/Out)	Diff* (In/Out)	0.36		0.36		Existing Count (In/Out)	Fit Adjusted Volume (In/Out)			
					Callb Adj Yr (In/Out)	7 (In/Out)	30 (In/Out)	7 (In/Out)			30 (In/Out)		
21 Main / N/S Street / EW Street	NB	0	0	0	2909	3173	1047	1142	803	836	1034	962	1189
	SB	0	0	0	3152	2797	1135	1007	870	772	1013	869	1164
	EB	0	0	0	118	10	43	8	33	150	87	173	100
	WB	0	0	0	6	3	2	1	2	1	91	100	104
	Total	0	0	0	6094	6091	2194	2193	1682	1681	2090	2090	2403
22 Main / N/S Street / EW Street	NB	3318	3870	2991	3639	-118	-83	-50	-64	855	979	984	1126
	SB	3118	3273	3006	2273	-40	-360	-31	-276	994	833	1144	958
	EB	5342	3700	4282	5121	-293	392	1457	995	1675	1388	1675	1388
	WB	3821	4755	4758	4003	337	-271	258	-207	931	1430	1189	1644
	Total	15600	15597	15036	15036	-203	-202	-156	-155	4238	4238	4873	4873
23 Bush / N/S Street / EW Street	NB	0	0	0	0	0	0	0	0	132	109	152	125
	SB	0	0	0	0	0	0	0	0	120	191	138	220
	EB	0	0	0	0	0	0	0	0	612	0	703	0
	WB	0	0	0	0	0	0	0	0	660	0	759	0
	Total	0	0	0	0	0	0	0	0	912	912	1049	1049
24 Bush / N/S Street / EW Street	NB	455	924	112	61	-123	-311	-95	-238	138	107	139	123
	SB	924	1439	61	58	-311	-897	-238	-381	121	132	139	152
	EB	985	0	1658	0	242	0	186	0	349	0	534	0
	WB	0	0	0	1712	0	616	0	473	0	369	0	424
	Total	2364	2364	1830	1830	-192	-192	-147	-147	608	608	699	699
25 Bush / N/S Street / EW Street	NB	333	338	100	106	-84	-101	-64	-78	138	108	159	124
	SB	924	455	61	112	-311	-123	-238	-95	108	148	124	170
	EB	1497	2185	1339	2161	-57	-9	-43	-7	88	131	101	151
	WB	2339	2084	2215	1339	-45	-281	-34	-200	148	95	170	109
	Total	5094	5091	3715	3718	-496	-494	-381	-379	482	482	554	554
26 Spurgeon / N/S Street / EW Street	NB	0	0	0	0	0	0	0	0	0	0	0	0
	SB	0	0	0	891	515	321	185	246	142	35	6	40
	EB	0	0	0	4052	4824	1459	1737	1118	1331	1528	776	1757
	WB	0	0	0	4776	4382	1719	1577	1318	1209	747	1528	859
	Total	0	0	0	9718	9721	3499	3500	2682	2683	2310	2310	2657
27 French / N/S Street / EW Street	NB	0	0	0	1952	458	703	165	539	126	63	36	72
	SB	0	0	0	361	230	130	83	100	64	26	29	30
	EB	0	0	0	2870	0	1033	0	792	0	829	0	953
	WB	0	0	0	3102	1854	1117	667	856	512	805	0	926
	Total	0	0	0	5414	5412	1949	1948	1494	1494	894	894	1028
28 French / N/S Street / EW Street	NB	0	0	0	279	385	100	139	77	106	51	72	59
	SB	0	0	0	458	236	165	85	126	65	104	61	120
	EB	0	0	0	1339	2215	482	797	370	611	55	197	63
	WB	0	0	0	2136	1379	769	496	590	381	261	141	300
	Total	0	0	0	4212	4215	1516	1517	1163	1163	471	471	542
29 Lacey / N/S Street / EW Street	NB	0	0	0	445	821	160	296	123	227	68	55	78
	SB	0	0	0	467	364	168	131	129	100	58	21	67
	EB	0	0	0	536	721	193	260	148	199	379	428	435
	WB	0	0	0	706	254	91	195	69	386	396	444	444
	Total	0	0	0	2155	2156	776	777	595				

Location Intersection: NS Street / EW Street	Link	Base Year Model		Year 2030 Model		Diff *		0.27		Calib Adj Yr		Existing Count		Full Adjusted Volume	
		IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	7	30	IN (F)	OUT (T)	IN (F)	OUT (T)
1 Flower / Santa Ana	NB	2576	1335	1394	712	-168	-245	-129	1245	764	798	1503			
	SB	1733	3195	1801	2843	18	-73	694	1432	1307	1432	878			
	EB	3356	2551	3360	3131	1	157	1	120	814	1066	1208			
	WB	2958	3542	3419	3288	125	-69	96	-53	1051	668	936			
	Total	10623	10623	9975	9975	-175	-175	-134	2753	3136	4375	4395			
2 Flower / Santa Ana	NB	140	186	123	140	-5	-13	-4	-10	953	634	1096			
	SB	0	0	3449	2407	931	650	714	498	586	991	674			
	EB	3716	4631	4267	4767	149	37	114	28	872	857	1003			
	WB	4818	3856	0	0	-1301	-1041	-997	-798	822	752	945			
	Total	8674	8674	7839	7314	-225	-367	-173	-382	3234	3719	3719			
3 Patton / Santa Ana	NB	3225	1890	34	30	-861	-502	-660	-385	404	228	465			
	SB	1428	2089	331	797	-296	-349	-327	-268	280	352	322			
	EB	3542	2958	4322	3148	211	51	161	39	682	673	843			
	WB	3496	4754	3877	4889	103	-45	79	-34	654	768	752			
	Total	11691	11691	8564	8564	-844	-844	-647	-647	2020	2020	2323			
4 Ross / Santa Ana	NB	915	758	1695	483	211	-74	161	-57	404	250	565			
	SB	3263	2178	30	34	-873	-579	-669	-444	280	332	382			
	EB	4754	3496	4589	3877	-45	103	-34	79	924	655	1062			
	WB	4287	4568	3812	5551	-128	285	-98	203	682	830	784			
	Total	12321	12321	11096	11097	-331	-331	-254	-253	2147	2147	2469			
5 Ross / Santa Ana	NB	0	0	165	525	45	142	34	109	305	258	351			
	SB	0	0	483	1695	130	456	100	351	282	341	324			
	EB	0	0	0	0	0	0	0	0	0	0	0			
	WB	0	0	1686	106	455	29	349	22	106	94	122			
	Total	0	0	2335	2326	630	628	483	482	693	693	797			
7 Broadway / Santa Ana	NB	4331	4169	3335	2347	-269	-492	-206	-377	665	726	765			
	SB	3407	3987	3021	3500	-104	-132	-80	-101	870	814	1001			
	EB	4754	3496	4589	3877	-45	103	-34	79	924	655	1062			
	WB	1792	2627	1665	2886	-34	70	-26	54	594	858	684			
	Total	14284	14280	12610	12610	-452	-451	-346	-346	3054	3054	3512			
8 Broadway / Santa Ana	NB	4949	3508	3335	2606	-436	-244	-334	-187	666	638	766			
	SB	4169	4331	2347	3335	-92	-269	-377	-206	722	732	830			
	EB	0	4288	0	3814	0	-128	0	-96	0	921	0			
	WB	3008	0	4072	0	287	0	220	0	904	0	1124			
	Total	12127	12127	9754	9754	-641	-641	-491	-491	2292	2292	2636			
9 Broadway / Santa Ana	NB	3737	4682	3847	3750	30	-252	23	-193	563	640	670			
	SB	3508	4949	2606	3335	-244	-438	-187	-334	700	687	805			
	EB	4568	0	5551	0	265	0	203	0	745	0	949			
	WB	0	2188	0	4915	0	737	0	565	0	700	0			
	Total	11814	11818	12004	12000	51	49	39	38	2028	2028	2332			
10 Broadway / Santa Ana	NB	1806	3581	4267	3216	718	-98	551	-75	569	611	1120			
	SB	4682	3737	3750	3847	-252	30	-193	23	592	546	669			
	EB	0	0	106	1686	29	455	22	349	171	158	197			
	WB	3339	2305	2127	1504	-327	-216	-251	-166	203	210	233			
	Total	9627	9623	10250	10254	168	170	129	131	1525	1525	1754			
11 Broadway / Santa Ana	NB	0	3280	4335	3263	1170	-5	897	-4	630	546	724			
	SB	3581	1606	3216	4267	-98	718	-75	551	599	630	689			

Location Intersection: NS Street / EW Street	Link	Base Year Model		Year 2030 Model		Diff *		0.36		Calib Adj Yr		Existing Count		Full Adjusted Volume	
		IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	7	30	IN (F)	OUT (T)	IN (F)	OUT (T)
41 U2-4 / Santa Ana	NB	0	0	0	0	0	0	0	0	0	0	0			
	SB	0	0	0	0	0	0	0	0	0	0	0			
	EB	0	0	0	0	0	0	0	0	0	0	0			
	WB	0	0	0	0	0	0	0	0	0	0	0			
	Total	0	0	0	0	0	0	0	0	0	0	0			
42 Grand / Santa Ana	NB	2848	6052	2033	7082	-293	371	-225	284	927	1507	1066			
	SB	4761	3952	8276	4567	1265	221	970	170	1886	950	2858			
	EB	5270	3133	5230	4018	-14	319	-11	244	728	927	838			
	WB	448	194	365	254	-23	-18	17	108	265	124	305			
	Total	13327	13330	15924	15921	935	933	717	715	3649	3649	4366			
43 U2-4 / Santa Ana	NB	0	0	0	0	0	0	0	0	455	621	524			
	SB	0	0	0	0	0	0	0	0	628	464	722			
	EB	0	0	0	0	0	0	0	0	1151	443	1323			
	WB	0	0	0	0	0	0	0	0	465	1161	524			
	Total	0	0	0	0	0	0	0	0	2689	2689	3092			
44 Grand / Santa Ana	NB	3248	5388	4836	8279	572	1041	438	798	615	1642	1053			
	SB	5052	3318	6533	2588	209	-263	161	-202	1380	807	1587			
	EB	3918	3856	4873	5470	344	588	283	451	1386	705	1650			
	WB	2997	2676	3582	2588	211	-32	161	-24	924	1051	986			
	Total	15215	15218	18924	18924	1335	1334	1024	1023	4205	4205	5229			
45 Penn Way / Santa Ana	NB	1197	1882	1700	3588	174	610	134	468	169	205	303			
	SB	3063	2783	3547	1850	181	-336	139	-258	647	297	786			
	EB	0	0	0	0	0	0	0	0	0	0	0			
	WB	2141	1728	2274	2083	48	128	37	98	327	641	376			
	Total	6401	6403	7521	7519	403	402	309	308	1143	1143	1452			
46 SB Ramp / Santa Ana Bl	NB	0	0	0	0	0	0	0	0	0	0	0			
	SB	2259	0	2000	0	-83	0	-71	0	465	337	535			
	EB	3192	3313	3373	4160	65	305	50	224	568	948	653			
	WB	3134	5270	4017	5231	316	-14	244	-11	1021	789	1285			
	Total	8585	8583	9390	9391	290	291	222	223	2054	2054	2362			
47 NB Ramp / 17th St	NB	1590	0	1542	0	-17	0	-13	0	707	215	813			
	SB	0	1942	0	1921	0	-8	0	-6	210	236	242			
	EB	3411	4917	2315	4698	-395	-79	-302	-60	1117	1871	1285			
	WB	4168	2312	4945	2183	280	-46	214	-36	1139	851	1353			
	Total	9169	9171	8902	8902	-132	-133	-101	-102	3173	3173	3649			
48 Penn Ave / Santa Ana	NB	3951	4760	4588	8276	222	1296	170	970	1088	2338	1258			
	SB	4481	3247	7917	4289	1237	375	948	288	1595	844	2543			
	EB	0	0	0	0	0	0	0	0	0	0	0			
	WB	1371	1795	1554	1475	66	-115	51	-88	903	406	1038			
	Total	9803	9802	14039	14040	1525	1526	1169	1170	3586	3586	4755			

Location (Intersection) N/S Street EW Street	Link (log)	Base Year			Year 2030			Diff *			Calb Adj Yr			Existing Count			Fur Adjusted Volume		
		IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)
22 Main / 1st	NB	4674	4280	4492	4123	-49	-42	-38	-32	1187	997	1365	1147	3163	3163	3163	3163	3163	3163
	SB	3339	4610	2839	3457	-135	-392	-104	-301	1121	1138	1290	1309	1309	1309	1309	1309	1309	1309
	EB	6882	5542	6326	6237	-96	186	74	144	1186	1374	1384	1580	1580	1580	1580	1580	1580	1580
	WB	5822	6089	5538	5678	-77	-111	-89	-85	1212	1196	1394	1375	1375	1375	1375	1375	1375	1375
	Total	20517	20521	19195	19195	-357	-358	-274	-275	4706	4706	5412	5412	5412	5412	5412	5412	5412	5412
23 Bush / Santa Ana	NB	0	0	0	0	0	0	0	0	332	224	382	257	382	382	382	382	382	382
	SB	0	0	0	0	0	0	0	0	226	351	260	403	403	403	403	403	403	403
	EB	0	0	0	0	0	0	0	0	0	0	0	820	820	820	820	820	820	820
	WB	0	0	0	0	0	0	0	0	729	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	1288	1288	1481	1481	1481	1481	1481	1481	1481	1481
24 Bush / 5th	NB	1157	788	148	47	-272	-200	-153	-342	288	393	331	331	331	331	331	331	331	331
	SB	788	2720	47	288	-200	-657	-153	-503	266	324	306	373	373	373	373	373	373	373
	EB	1564	0	3301	0	469	0	360	0	655	0	1014	0	1014	0	1014	0	1014	0
	WB	0	0	0	0	0	0	0	0	654	0	654	0	654	0	654	0	654	0
	Total	3508	3508	3496	3496	-3	-3	-3	-3	1262	1262	1452	1452	1452	1452	1452	1452	1452	1452
25 Bush / 4th	NB	1059	203	34	110	-277	-25	-212	-19	330	250	380	287	380	380	380	380	380	380
	SB	788	1157	47	148	-200	-272	-153	-209	258	339	297	389	389	389	389	389	389	389
	EB	2614	3343	2665	2547	14	-215	11	-165	166	194	191	224	224	224	224	224	224	224
	WB	3441	3195	2733	2665	-191	-143	-146	-110	221	192	254	221	221	221	221	221	221	221
	Total	7903	7898	9479	9479	-654	-656	-502	-303	975	975	1122	1122	1122	1122	1122	1122	1122	1122
26 Spungor / 1st	NB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	SB	0	0	915	1136	247	307	189	235	113	36	130	41	130	130	130	130	130	130
	EB	0	0	5843	5623	1578	1518	1210	1164	1319	1374	1517	1580	1580	1580	1580	1580	1580	1580
	WB	0	0	5915	5915	1597	1597	1224	1224	1297	1319	1482	1517	1517	1517	1517	1517	1517	1517
	Total	0	0	12674	12674	3422	3422	2623	2623	2729	2729	3156	3156	3156	3156	3156	3156	3156	3156
27 French / Santa Ana	NB	0	0	3059	678	826	183	633	140	143	52	164	60	164	164	164	164	164	164
	SB	0	0	542	38	146	10	112	8	36	66	41	76	76	76	76	76	76	76
	EB	0	0	2903	0	784	0	601	0	653	0	681	0	681	0	681	0	681	0
	WB	0	0	3037	3021	820	816	629	625	592	0	681	0	681	0	681	0	681	0
	Total	0	0	6639	6640	1752	1752	1374	1374	771	771	887	887	887	887	887	887	887	887
28 French / 4th	NB	0	0	339	466	92	126	70	96	153	162	176	186	186	186	186	186	186	186
	SB	0	0	678	114	183	31	140	24	198	137	228	158	228	228	228	228	228	228
	EB	0	0	2665	2733	720	738	552	566	152	254	175	292	292	292	292	292	292	292
	WB	0	0	470	1352	127	365	97	280	213	588	244	467	467	467	467	467	467	467
	Total	0	0	3030	3030	818	818	627	627	899	899	1033	1033	1033	1033	1033	1033	1033	1033
29 Lacey / Santa Ana	NB	0	0	831	287	224	72	172	55	63	42	73	48	73	73	73	73	73	73
	SB	0	0	665	589	180	159	138	122	49	59	56	68	68	68	68	68	68	68
	EB	0	0	3021	3038	816	820	625	629	588	617	676	710	710	710	710	710	710	710
	WB	0	0	3284	3903	887	1054	680	808	630	612	725	704	704	704	704	704	704	704
	Total	0	0	7801	7797	2106	2105	1615	1614	1330	1330	1530	1530	1530	1530	1530	1530	1530	1530
31 Lacey / 6th	NB	0	0	1081	297	292	80	224	61	170	57	196	86	196	196	196	196	196	196
	SB	0	0	267	831	72	224	55	172	48	65	55	75	75	75	75	75	75	75
	EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB	0	0	30	250	8	68	6	52	44	71	51	82	82	82	82	82	82	82
	Total	0	0	1377	1377	372	372	285	285	293	293	337	337	337	337	337	337	337	337
32 Lacey / 4th	NB	0	0	568	153	153	-41	118	32	80	36	92	42	92	92	92	92	92	92

Location (Intersection) N/S Street EW Street	Link (log)	Base Year			Year 2030			Diff *			Calb Adj Yr			Existing Count			Fur Adjusted Volume		
		IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)	IN (F)	OUT (T)
12 Broadway / 1st	NB	2852	1547	17	93	-765	-392	-301	160	229	184	263	184	263	263	263	263	263	263
	WB	0	0	140	85	38	23	29	18	213	197	244	227	244	244	244	244	244	244
	Total	6432	6432	7708	7708	344	344	264	1602	1602	1866	1866	1866	1866	1866	1866	1866	1866	1866
13 Sycamore / Civic Centre	NB	1097	958	979	653	-32	-82	-25	-63	459	493	528	567	567	567	567	567	567	567
	SB	3280	0	3246	3797	-9	1025	-7	786	540	520	598	598	598	598	598	598	598	598
	EB	4326	6610	4424	4106	26	-676	20	-518	1203	1438	1383	1653	1653	1653	1653	1653	1653	1653
	WB	5542	6682	6237	6326	188	-96	144	-74	1368	1120	1573	1288	1288	1288	1288	1288	1288	1288
	Total	14246	14250	14886	14881	173	170	132	131	3571	3571	4106	4106	4106	4106	4106	4106	4106	4106
14 Sycamore / Santa Ana	NB	0	0	1208	602	326	182	250	125	92	74	105	86	105	105	105	105	105	105
	SB	0	0	2886	1665	779	450	597	345	809	538	618	114	618	618	618	618	618	618
	EB	0	0	458	2284	124	617	95	473	481	881	530	1013	1013	1013	1013	1013	1013	1013
	WB	0	0	4551	1229	942	942	1591	1591	1591	1830	1830	1830	1830	1830	1830	1830	1830	1830
	Total	0	0	873	602	236	182	125	120	78	138	90	108	108	108	108	108	108	108
15 Sycamore / 5th	NB	0	0	602	1208	162	326	125	250	81	94	93	108	108	108	108	108	108	108
	SB	0	0	4407	0	4072	0	1099	0	843	0	753	0	753	0	753	0	753	0
	EB	0	0	5881	5881	1588	1588	1217	1217	856	856	984	984	984	984	984	984	984	984
	WB	0	0	1102	1203	297	325	228	249	27	44	31	51	51	51	51	51	51	51
	Total	0	0	602	873	162	236	125	125	181	71	64	82	82	82	82	82	82	82
16 Sycamore / 4th	NB	0	0																

Location (Intersection) N/S Street E/W Street	Link (kg)	Base Year		Year 2030		Diff *		0.27		Calb Adj Yr		Existing Count		Fut Adjusted Volume	
		IN (F)	OUT (Tg)	IN (F)	OUT (Tg)	IN (F)	OUT (Tg)	IN (F)	OUT (Tg)	7	30	IN (F)	OUT (Tg)	IN (F)	OUT (Tg)
43 U2-4 / Santa Ana	WB	369	414	326	203	-11	-57	-44	-317	395	385	317	395	365	454
	EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	17640	17643	21508	1045	1044	801	800	3984	3984	3984	3984	3984	3984	4784	4784
44 Grand / Santa Ana	WB	6881	5119	10935	7597	1095	669	839	513	1438	1219	2277	1732	2277	1732
	EB	4856	6470	4699	7153	-42	184	-32	141	1146	1483	1317	1705	1317	1705
	WB	3911	4610	3903	4377	-2	-63	-2	-48	1067	1137	1227	1308	1227	1308
	Total	21013	21013	26458	26458	1470	1470	1127	1127	4926	4926	6053	6053	6053	6053
46 Penn Way / 5 SB Ramp	WB	1900	2168	3524	3536	438	369	336	283	304	189	640	472	640	472
	EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB	2372	2527	2476	2770	28	66	22	50	357	675	411	776	411	776
	Total	8397	8395	10657	10655	510	610	468	468	1267	1267	1735	1735	1735	1735
46 SB Ramp / Santa Ana Bl	WB	1646	0	1730	0	23	0	17	0	396	570	455	656	455	656
	EB	4798	3936	5728	4169	265	63	203	48	982	878	1185	1010	1185	1010
	WB	3823	6330	4112	7450	78	302	60	232	961	891	1105	1123	1105	1123
	Total	10267	10266	11620	11619	365	365	280	280	2339	2339	2690	2690	2690	2690
47 NB Ramp / 17th St	WB	1952	0	1642	0	-84	0	-64	0	615	291	937	335	937	335
	EB	3209	0	2882	0	-88	0	-68	0	213	281	245	323	245	323
	WB	7766	5905	5602	5054	-584	-230	-448	-176	1526	2566	1755	2951	1755	2951
	Total	14964	14964	13344	13344	-356	-356	-273	-273	4377	4377	5034	5034	5034	5034
48 Grand Ave / 5 NB Ramp	WB	4946	5550	6101	5408	312	-36	239	-29	1823	1239	2086	1425	2086	1425
	EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB	7210	5206	10917	7222	501	544	767	417	2334	1550	3101	1967	3101	1967
	Total	14664	14664	13344	13344	-356	-356	-273	-273	4377	4377	5034	5034	5034	5034
48 Grand Ave / 5 NB Ramp	WB	5005	5883	6968	9563	530	994	406	762	1080	2517	1486	3279	1486	3279
	EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB	1660	2985	1775	2875	-23	-30	-18	-23	1257	604	1446	695	1446	695
	Total	14075	14074	19660	19660	1508	1508	1156	1156	4671	4671	5827	5827	5827	5827

Location (Intersection) N/S Street E/W Street	Link (kg)	Base Year		Year 2030		Diff *		0.27		Calb Adj Yr		Existing Count		Fut Adjusted Volume	
		IN (F)	OUT (Tg)	IN (F)	OUT (Tg)	IN (F)	OUT (Tg)	IN (F)	OUT (Tg)	7	30	IN (F)	OUT (Tg)	IN (F)	OUT (Tg)
33 Lacy / 1st	WB	0	0	297	860	80	232	61	178	39	49	45	57	45	57
	EB	0	0	3081	2712	832	732	638	567	225	258	652	258	652	258
	WB	0	0	2771	2987	748	807	574	618	213	588	244	677	244	677
	Total	0	0	6716	6712	1813	1812	1389	899	899	899	1033	1033	1033	1033
34 Santiago / Washington	WB	0	0	148	492	40	133	31	102	127	204	146	235	146	235
	EB	0	0	5517	5085	1490	1373	1142	1053	1333	1369	1533	1505	1533	1505
	WB	0	0	5017	5114	1355	1381	1039	1059	1227	1166	1411	1341	1411	1341
	Total	0	0	10682	10691	2884	2866	2211	2213	2693	2693	3097	3097	3097	3097
35 Santiago / Civic Center	WB	2064	2237	3514	3847	473	435	362	333	479	213	841	546	841	546
	EB	2169	1898	3534	3525	368	439	282	337	284	530	567	867	567	867
	WB	1436	1267	583	250	-227	-274	-174	-210	428	306	492	352	492	352
	Total	5669	5402	8097	8106	656	730	503	560	1402	1402	1905	1962	1905	1962
36 Santiago / Santa Ana	WB	2339	2945	4733	4394	846	391	496	300	419	561	915	861	915	861
	EB	712	275	890	169	48	-29	37	-22	629	297	724	342	724	342
	WB	0	0	59	1025	16	277	12	212	73	97	84	112	84	112
	Total	5288	5284	9547	9547	1150	1151	882	882	1446	1446	2328	2329	2328	2329
37 Santiago / Brown	WB	2945	2339	4394	4733	391	646	300	496	584	427	864	923	864	923
	EB	2042	2095	4072	3326	548	335	420	257	794	733	1214	990	1214	990
	WB	3975	4542	4436	5843	125	351	96	269	988	1063	1136	1332	1136	1332
	Total	8962	8966	17042	17047	2182	2182	1673	1673	2558	2558	4230	4230	4230	4230
38 Santiago / 6th	WB	0	0	0	0	0	0	0	0	25	20	29	23	29	23
	EB	0	0	0	0	0	0	0	0	197	86	227	99	227	99
	WB	0	0	0	0	0	0	0	0	89	142	102	163	102	163
	Total	0	0	0	0	0	0	0	0	63	0	72	0	72	0
39 Santiago / 4th	WB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40 Santiago / 1st	WB	0	0	2119	1826	572	483	439	378	605	392	695	451	695	451
	EB	0	0	2653	3530	716	953	549	731	266	374	306	430	306	430
	WB	0	0	5301	5127	1431	1384	1097	1061	1229	1316	1414	1513	1414	1513
	Total	0	0	7310	6919	1979	1868	1517	1432	1228	1392	1412	1392	1412	1392
41 U2-4 / Santa Ana	WB	0	0	17403	17403	4699	3602	3602	3310	3310	3806	3806	3806	3806	3806
	EB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	WB	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total	0	0	17403	17403	4699	3602	3602	3310	3310	3806	3806	3806	3806	3806
42 Grand / Santa Ana	WB	5733	6195	6513	6280	211	23	161	18	1435	1450	1650	1667	1650	1667
	EB	5208	7212	7220	10915	543	1000	417	767	1566	1401	1982	2168	1982	2168
	WB	6331	3822	7449	4110	-302	78	232	60	665	737	898	848	898	848
	Total	17272	17229	21192	21192	1252	1252	1252	1252	3666	3666	4446	4446	4446	

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South Parson at East/West Sanna Ann Scenario: 2035 Without Project
 Intersection: Ross at Civic Center Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs																					
North		SR	ST	SL	WR	76	EL	ET	WT	444	68	ER	NT	NR	NR	NT	NR	NR	NT	NR	NR	NT	NR
823	973	900	662	841	535	104	535	535	535	535	535	535	535	535	535	535	535	535	535	535	535	535	535
849	973	1053	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
In - Out		3537.282	3537	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
From N	0	6	19	20	45	973.25	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104
From S	4	0	29	13	46	1053.2	92	0	130	411	433	92	0	130	411	433	92	0	130	411	433	92	0
From E	76	68	0	444	588	661.57	86	77	0	664	298	86	77	0	664	298	86	77	0	664	298	86	77
From W	28	104	535	0	667	849.27	36	132	681	0	0	36	132	681	0	0	36	132	681	0	0	36	132
To N	0	373	197	289	859	973	900	973	841	823	823	900	973	841	823	823	900	973	841	823	823	900	973
To S	0	373	197	289	859	973	900	973	841	823	823	900	973	841	823	823	900	973	841	823	823	900	973
To E	0	373	197	289	859	973	900	973	841	823	823	900	973	841	823	823	900	973	841	823	823	900	973
To W	0	373	197	289	859	973	900	973	841	823	823	900	973	841	823	823	900	973	841	823	823	900	973
From N	0	429	205	337	971	973	900	973	841	823	823	900	973	841	823	823	900	973	841	823	823	900	973
From S	471	0	340	238	1049	1053	473	0	430	205	338	473	0	430	205	338	473	0	430	205	338	473	0
From E	273	161	0	248	682	662	265	156	0	341	239	265	156	0	341	239	265	156	0	341	239	265	156
From W	156	383	297	0	835	849	159	389	302	0	0	159	389	302	0	0	159	389	302	0	0	159	389
To N	0	429	205	337	971	973	900	973	841	823	823	900	973	841	823	823	900	973	841	823	823	900	973
To S	0	429	205	337	971	973	900	973	841	823	823	900	973	841	823	823	900	973	841	823	823	900	973
To E	0	429	205	337	971	973	900	973	841	823	823	900	973	841	823	823	900	973	841	823	823	900	973
To W	0	429	205	337	971	973	900	973	841	823	823	900	973	841	823	823	900	973	841	823	823	900	973
From N	0	429	204	340	973	973	900	973	841	823	823	900	973	841	823	823	900	973	841	823	823	900	973
From S	475	0	338	241	1054	1053	475	0	429	204	340	475	0	429	204	340	475	0	429	204	340	475	0
From E	266	156	0	242	664	662	265	155	0	338	240	265	155	0	338	240	265	155	0	338	240	265	155
From W	159	388	299	0	846	849	160	389	300	0	0	160	389	300	0	0	160	389	300	0	0	160	389
To N	0	429	204	340	973	973	900	973	841	823	823	900	973	841	823	823	900	973	841	823	823	900	973
To S	0	429	204	340	973	973	900	973	841	823	823	900	973	841	823	823	900	973	841	823	823	900	973
To E	0	429	204	340	973	973	900	973	841	823	823	900	973	841	823	823	900	973	841	823	823	900	973
To W	0	429	204	340	973	973	900	973	841	823	823	900	973	841	823	823	900	973	841	823	823	900	973
Turn Movements and Traffic Volumes		Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR									
Existing	13	4	29	19	6	20	28	535	104	68	444	76	265	155									
2035	240	475	338	204	429	340	160	300	389	155	241	265	155	241									

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South Ross at East/West Civic Center Scenario: 2035 Without Project
 Intersection: Ross at Civic Center Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs																					
North		SR	ST	SL	WR	45	EL	ET	WT	634	60	ER	NT	NR	NR	NT	NR	NR	NT	NR	NR	NT	NR
1054	355	307	850	738	44	522	88	522	522	522	522	522	522	522	522	522	522	522	522	522	522	522	522
752	397	370	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
In - Out		2326.519	2496	-169.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
From N	0	197	59	51	307	354.54	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88
From S	177	0	60	84	321	369.6	204	0	228	68	59	204	0	228	68	59	204	0	228	68	59	204	0
From E	45	60	0	634	739	850.43	52	69	0	69	97	52	69	0	69	97	52	69	0	69	97	52	69
From W	44	88	522	0	654	751.95	51	101	600	0	0	51	101	600	0	0	51	101	600	0	0	51	101
To N	0	197	59	51	307	354.54	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88
To S	0	197	59	51	307	354.54	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88
To E	0	197	59	51	307	354.54	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88
To W	0	197	59	51	307	354.54	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88	88
From N	0	227	68	70	366	355	204	0	220	66	68	204	0	220	66	68	204	0	220	66	68	204	0
From S	204	0	69	115	389	370	194	0	194	0	110	194	0	194	0	110	194	0	194	0	110	194	0
From E	52	69	0	869	990	850	45	59	0	747	0	45	59	0	747	0	45	59	0	747	0	45	
From W	51	101	600	0	753	752	51	101	600	0	0	51	101	600	0	0	51	101	600	0	0	51	101
To N	0	227	68	70	366	355	204	0	220	66	68	204	0	220	66	68	204	0	220	66	68	204	0
To S	0	227	68	70	366	355	204	0	220	66	68	204	0	220	66	68	204	0	220	66	68	204	0
To E	0	227	68	70	366	355	204	0	220	66	68	204	0	220	66	68	204	0	220	66	68	204	0
To W	0	227	68	70	366	355	204	0	220	66	68	204	0	220	66	68	204	0	220	66	68	204	0
From N	0	230	67	78	374	355	204	0	218	63	73	204	0	218	63	73	204	0	218	63	73	204	0
From S	206	0	66	125	397	370	192	0	192	0	116	192	0	192	0	116	192	0	192	0	116	192	0
From E	47	62	0	851	961	850	42	55	0	754	0	42	55	0	754	0	42	55	0	754	0	42	
From W	54	105	605	0	764	752	53	104	595	0	0	53	104	595	0	0	53	104	595	0	0	53	104
To N	0	230	67	78	374	355	204	0	218	63	73	204	0	218	63	73	204	0	218	63	73	204	0
To S	0	230	67	78	374	355	204	0	218	63	73	204	0	218	63	73	204	0	218	63	73	204	0
To E	0	230	67	78	374	355	204	0	218	63	73	204	0	218	63	73	204	0	218	63	73	204	0
To W	0	230	67	78	374	355	204	0	218	63	73	204	0	218	63	73	204	0	218	63	73	204	0
From N	0	230	65	82	377	355	204	0	216	61	77	204	0	216	61	77	204	0	216	61	77	204	0
From S	205	0	63	130	399	370	191	0	191	0	120	191	0	191	0	120	191	0	191	0	120	191	0
From E	45	58	0	842	945	850	40	52	0	758	0	40	52	0	758	0	40	52	0	758	0	40	
From W	57	110	610	0	776	752	55	106	591	0	0	55	106	591	0	0	55	106	591	0	0	55	106
To N	0	230	65	82	377	355	204	0	216	61	77	204	0	216	61	77	204	0	216	61	77	204	0
To S	0	230	65	82	377	355	204	0	216	61	77	204	0	216	61	77	204	0	216	61	77	204	0
To E	0	230	65	82	377	355	204	0	216	61	77	204	0	216	61	77	204	0	216	61	77	204	0
To W	0	230	65	82	377	355	204	0	216														

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at Ross at Santa Ana East/West Scenario: 2035 Without Project
 Intersection: 768 696 at 4th Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs	
North		North	
From N	0	154	54
From S	143	0	58
From E	92	183	0
From W	69	19	518
To N	154	To S	518
To S	54	To E	518
To E	58	To W	518
To W	19	ColTot	439
ColTot	2163.01	Target	410
Target	-89.27		725
			768

From	To N	To S	To E	To W	RowTl	Target
From N	0	178	59	157	393	352
From S	202	0	98	52	352	395
From E	84	211	0	560	854	720
From W	63	22	568	0	652	696
ColTot	349	364	360	769	670	768
Target	349	410	410	725	768	

From	To N	To S	To E	To W	RowTl	Target
From N	0	181	50	161	392	352
From S	217	0	104	67	388	395
From E	68	202	0	541	811	720
From W	64	27	571	0	662	696
ColTot	349	349	370	752	692	768
Target	349	410	410	725	768	

From	To N	To S	To E	To W	RowTl	Target
From N	0	180	43	160	384	352
From S	221	0	102	75	399	395
From E	60	199	0	532	791	720
From W	68	31	580	0	678	696
ColTot	343	343	378	736	706	768
Target	349	410	410	725	768	
Pct	0.9835	0.9217	1.015	0.91889		

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	21	143	58	54	154	98	69	518	19	183	351	92
2035	75	219	101	40	165	147	69	595	32	181	484	55

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at Ross at 4th East/West Scenario: 2035 Without Project
 Intersection: 0 2 at 4th Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs	
North		North	
From N	0	178	39
From S	238	0	10
From E	48	19	0
From W	0.001	2	0.001
To N	178	To S	229
To S	39	To E	229
To E	10	To W	56
To W	0	ColTot	329
ColTot	614.1	Target	329
Target	-1E-03		56
			56

From	To N	To S	To E	To W	RowTl	Target
From N	0	178	39	0.001	217	249.55
From S	238	0	10	0.001	248	285.2
From E	48	19	0	0.001	67.001	77.05
From W	0.001	2	0.001	0	2.002	2.3
ColTot	329	329	229	56	0	0
Target	329	229	229	56	0	0

From	To N	To S	To E	To W	RowTl	Target
From N	0	205	45	0	250	250
From S	274	0	11	0	285	285
From E	55	22	0	0	77	77
From W	0	2	0	0	2	2
ColTot	329	329	229	56	0	0
Target	329	229	229	56	0	0

From	To N	To S	To E	To W	RowTl	Target
From N	0	205	45	0	250	250
From S	274	0	11	0	285	285
From E	55	22	0	0	77	77
From W	0	2	0	0	2	2
ColTot	329	329	229	56	0	0
Target	329	229	229	56	0	0

From	To N	To S	To E	To W	RowTl	Target
From N	0	205	45	0	250	250
From S	274	0	11	0	285	285
From E	55	22	0	0	77	77
From W	0	2	0	0	2	2
ColTot	329	329	229	56	0	0
Target	329	229	229	56	0	0

From	To N	To S	To E	To W	RowTl	Target
From N	0	205	45	0	250	250
From S	274	0	11	0	285	285
From E	55	22	0	0	77	77
From W	0	2	0	0	2	2
ColTot	329	329	229	56	0	0
Target	329	229	229	56	0	0

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	0	238	10	39	178	0	0	0	2	19	0	48
2035	0	274	11	45	205	0	0	0	2	22	0	55

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2035 Without Project
 Intersection: Broadway at Civic Center Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs		Link Inputs		Turn Move Inputs	
North	South	SR	SL	SR	SL	SR	SL
986	1094	222	616	102	114	421	421
675	623	EL	ST	421	83	64	64
	797	ET	WT	64	550	NR	NR
	682	ER	WL	39	39	NT	NT
	827	NL	NR			NL	NL
	3118	36	410	49	49	36	410
In - Out	3193.494	421	421	49	421	421	421

From	To N	To S	To E	To W	RowT/Target	To N	To S	To E	To W
From N	0	616	114	222	952	64	64	64	64
From S	410	0	49	86	545	0	708	131	255
From E	83	39	0	550	672	472	0	56	99
From W	102	64	421	0	587	98	46	0	653
ColTot	687	828	672	1007	623	117	74	484	0
Target	687	828	672	1007	623	827	682	986	986

From	To N	To S	To E	To W	RowT/Target	To N	To S	To E	To W
From N	0	707	133	250	1090	0	710	133	251
From S	427	0	57	97	581	461	0	62	104
From E	89	46	0	639	775	92	48	0	658
From W	106	74	492	0	672	107	74	495	0
ColTot	659	831	690	1013	623	623	827	682	986
Target	659	831	690	1013	623	827	682	986	986

From	To N	To S	To E	To W	RowT/Target	To N	To S	To E	To W
From N	0	706	132	244	1082	0	714	133	247
From S	435	0	61	102	598	456	0	64	107
From E	87	47	0	640	775	89	49	0	659
From W	101	74	489	0	664	103	75	498	0
ColTot	648	838	695	1012	623	623	827	682	986
Target	648	838	695	1012	623	827	682	986	986

From	To N	To S	To E	To W	RowT/Target	To N	To S	To E	To W
From N	0	705	131	240	1076	0	717	133	244
From S	438	0	63	104	605	454	0	65	108
From E	86	48	0	642	776	88	50	0	660
From W	99	74	488	0	661	101	76	499	0
ColTot	643	842	697	1011	623	623	827	682	986
Target	643	842	697	1011	623	827	682	986	986

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	86	410	49	114	616	222	102	421	64	39	550	83
2035	108	454	65	133	717	244	101	499	76	50	660	88

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2035 Without Project
 Intersection: Broadway at Santa Ana Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs		Link Inputs		Turn Move Inputs	
North	South	SR	SL	SR	SL	SR	SL
830	906	185	602	0	0	0	0
0	717	EL	ST	0	55	0	55
	920	ET	WT	0	500	0	500
	0	ER	WL	0	19	0	19
	715	NL	NR	0	0	0	0
In - Out	2520.914	2262	259.28	36	568	0	0

From	To N	To S	To E	To W	RowT/Target	To N	To S	To E	To W
From N	0	602	0.001	185	787	0	0	0	0
From S	568	0	0.001	36	604	0	693	0	213
From E	55	19	0	500	574	654	0	0	41
From W	0.001	0.001	0.001	0	0.003	88	30	0	801
ColTot	742	724	0	1056	717	715	0	0	830
Target	742	724	0	1056	717	715	0	0	830

From	To N	To S	To E	To W	RowT/Target	To N	To S	To E	To W
From N	0	685	0	167	852	0	728	0	178
From S	632	0	0	33	665	661	0	0	34
From E	85	30	0	630	745	105	37	0	777
From W	0	0	0	0	0	0	0	0	0
ColTot	766	765	0	989	717	715	0	0	830
Target	766	765	0	989	717	715	0	0	830

From	To N	To S	To E	To W	RowT/Target	To N	To S	To E	To W
From N	0	680	0	149	829	0	743	0	163
From S	619	0	0	29	647	665	0	0	31
From E	98	35	0	652	785	115	41	0	764
From W	0	0	0	0	0	0	0	0	0
ColTot	780	784	0	957	717	715	0	0	830
Target	780	784	0	957	717	715	0	0	830

From	To N	To S	To E	To W	RowT/Target	To N	To S	To E	To W
From N	0	678	0	141	819	0	750	0	156
From S	611	0	0	27	638	666	0	0	29
From E	106	37	0	662	805	121	42	0	756
From W	0	0	0	0	0	0	0	0	0
ColTot	787	792	0	941	717	715	0	0	830
Target	787	792	0	941	717	715	0	0	830

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	36	568	0	602	185	0	0	19	500	55	55	55
2035	29	666	0	750	156	0	0	42	756	121	121	121

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West at 5th
 Intersection: Broadway

Scenario: 2035 Without Project
 Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs		North		South		East		West	
From	To	SR	SL	SR	SL	SR	SL	SR	SL	SR	SL
From N	0	472	67	0	472	67	0	0	0	0	0
From S	428	0	35	0	0	0	0	99	334	0	0
From E	0	0	0	0	0	0	0	0	0	0	0
From W	99	6	334	0	0	0	0	6	0	0	0
To N	0	0	0	0	0	0	0	0	0	0	0
To S	6	334	0	0	0	0	0	0	0	0	0
To E	0	0	0	0	0	0	0	0	0	0	0
To W	0	0	0	0	0	0	0	0	0	0	0
ColTot	99	6	334	0	0	0	0	6	0	0	0
Target	607	550	501	0	0	0	0	0	0	0	0

From	To	SR	SL	SR	SL	SR	SL	SR	SL	SR	SL
From N	0	543	77	0	0	0	0	0	0	0	0
From S	493	0	40	0	533	532	0	0	0	0	0
From E	0	0	0	0	0	0	0	0	0	0	0
From W	114	7	384	0	505	505	0	0	0	0	0
To N	0	0	0	0	0	0	0	0	0	0	0
To S	6	334	0	0	0	0	0	0	0	0	0
To E	0	0	0	0	0	0	0	0	0	0	0
To W	0	0	0	0	0	0	0	0	0	0	0
ColTot	99	6	334	0	0	0	0	0	0	0	0
Target	607	550	501	0	0	0	0	0	0	0	0

From	To	SR	SL	SR	SL	SR	SL	SR	SL	SR	SL
From N	0	543	77	0	0	0	0	0	0	0	0
From S	493	0	40	0	533	532	0	0	0	0	0
From E	0	0	0	0	0	0	0	0	0	0	0
From W	114	7	384	0	505	505	0	0	0	0	0
To N	0	0	0	0	0	0	0	0	0	0	0
To S	6	334	0	0	0	0	0	0	0	0	0
To E	0	0	0	0	0	0	0	0	0	0	0
To W	0	0	0	0	0	0	0	0	0	0	0
ColTot	99	6	334	0	0	0	0	0	0	0	0
Target	607	550	501	0	0	0	0	0	0	0	0

From	To	SR	SL	SR	SL	SR	SL	SR	SL	SR	SL
From N	0	543	77	0	0	0	0	0	0	0	0
From S	492	0	40	0	532	532	0	0	0	0	0
From E	0	0	0	0	0	0	0	0	0	0	0
From W	115	7	384	0	505	505	0	0	0	0	0
To N	0	0	0	0	0	0	0	0	0	0	0
To S	6	334	0	0	0	0	0	0	0	0	0
To E	0	0	0	0	0	0	0	0	0	0	0
To W	0	0	0	0	0	0	0	0	0	0	0
ColTot	99	6	334	0	0	0	0	0	0	0	0
Target	607	550	501	0	0	0	0	0	0	0	0
Pct	0.99969	1.0002	1.0001	0.99992							

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	0	428	35	67	472	0	99	334	6	0	0	0
2035	0	492	40	77	543	0	115	384	7	0	0	0

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West at 4th
 Intersection: Broadway

Scenario: 2035 Without Project
 Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs		North		South		East		West	
From	To	SR	SL	SR	SL	SR	SL	SR	SL	SR	SL
From N	0	410	15	69	494	567	726	0	0	0	0
From S	426	0	22	9	457	924	932	0	0	0	0
From E	11	20	0	85	116	133	242	0	0	0	0
From W	15	15	51	0	81	93	8486	0	0	0	0
To N	0	0	0	0	0	0	0	0	0	0	0
To S	6	334	0	0	0	0	0	0	0	0	0
To E	0	0	0	0	0	0	0	0	0	0	0
To W	0	0	0	0	0	0	0	0	0	0	0
ColTot	99	6	334	0	0	0	0	0	0	0	0
Target	607	550	501	0	0	0	0	0	0	0	0

From	To	SR	SL	SR	SL	SR	SL	SR	SL	SR	SL
From N	0	472	15	76	562	568	0	0	0	0	0
From S	503	0	38	17	558	925	0	0	0	0	0
From E	7	23	0	93	124	133	0	0	0	0	0
From W	10	17	50	0	77	94	0	0	0	0	0
To N	0	0	0	0	0	0	0	0	0	0	0
To S	6	334	0	0	0	0	0	0	0	0	0
To E	0	0	0	0	0	0	0	0	0	0	0
To W	0	0	0	0	0	0	0	0	0	0	0
ColTot	99	6	334	0	0	0	0	0	0	0	0
Target	607	550	501	0	0	0	0	0	0	0	0

From	To	SR	SL	SR	SL	SR	SL	SR	SL	SR	SL
From N	0	467	11	69	547	568	0	0	0	0	0
From S	508	0	46	26	580	925	0	0	0	0	0
From E	5	24	0	91	120	133	0	0	0	0	0
From W	7	21	45	0	73	94	0	0	0	0	0
To N	0	0	0	0	0	0	0	0	0	0	0
To S	6	334	0	0	0	0	0	0	0	0	0
To E	0	0	0	0	0	0	0	0	0	0	0
To W	0	0	0	0	0	0	0	0	0	0	0
ColTot	99	6	334	0	0	0	0	0	0	0	0
Target	607	550	501	0	0	0	0	0	0	0	0

From	To	SR	SL	SR	SL	SR	SL	SR	SL	SR	SL
From N	0	461	8	63	532	568	0	0	0	0	0
From S	511	0	53	36	600	925	0	0	0	0	0
From E	5	26	0	88	117	133	0	0	0	0	0
From W	6	25	41	0	73	94	0	0	0	0	0
To N	0	0	0	0	0	0	0	0	0	0	0
To S	6	334	0	0	0	0	0	0	0	0	0
To E	0	0	0	0	0	0	0	0	0	0	0
To W	0	0	0	0	0	0	0	0	0	0	0
ColTot	99	6	334	0	0	0	0	0	0	0	0
Target	607	550	501	0	0	0	0	0	0	0	0
Pct	1.537	1.082	1.4039	1.19434							

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	9	426	22	15	410	69	15	51	15	20	85	11
2035	56	788	81	9	492	67	8	53	33	29	100	4

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South Main at East/West 4th

Scenario: 2035 Without Project
Time Period: 2035 Weekday AM

Link Inputs

From N	0	1176	881	176	0	1006	0	16	1006	0
From S	818	0	22	0	840	966,293	0	SR	ST	SL
From E	38	0	115	153	176,111	0	EL	WR	WT	38
From W	0	18	84	0	102	259,83	1178	ER	WL	0
To N	To S	To E	To W				NL	NT	NR	
In - Out	2578,239	2332	246.2				0	818	22	84

From N	0	1006	0	16	1022	1176	18	18	18	18	To E	To W
From S	818	0	22	0	840	966,293	0	1158	0	19	0	18
From E	38	0	115	153	176,111	0	44	0	25	0	0	132
From W	0	18	84	0	102	259,83	0	46	214	0	0	132
To N	To S	To E	To W				ColTot	985	1203	239	151	151
Target	881	1178	122	151			Target	881	1178	122	151	

From N	0	1133	0	18	1152	1176	To N	To S	To E	To W	
From S	842	0	13	0	855	966	0	1157	0	19	
From E	39	0	132	171	176	0	952	0	15	0	
From W	0	45	109	0	154	260	0	76	184	0	
To N	To S	To E	To W				ColTot	992	1233	198	155
Target	881	1178	122	151			Target	881	1178	122	151

From N	0	1106	0	18	1124	1176	To N	To S	To E	To W	
From S	846	0	9	0	855	966	0	1157	0	19	
From E	36	0	132	168	176	0	956	0	10	0	
From W	0	73	113	0	185	260	0	102	158	0	
To N	To S	To E	To W				ColTot	994	1259	168	158
Target	881	1178	122	151			Target	881	1178	122	151

From N	0	1083	0	18	1101	1176	To N	To S	To E	To W	
From S	848	0	7	0	856	966	0	1157	0	20	
From E	33	0	132	166	176	0	958	0	8	0	
From W	0	95	114	0	210	260	0	35	0	141	
To N	To S	To E	To W				ColTot	993	1275	150	160
Target	881	1178	122	151			Target	881	1178	122	151

Turn Movements and Traffic Volumes

Year	Existing	2035	0	958	8	0	1157	20	0	142	118	0	141	35
			NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South Main at East/West 5th

Scenario: 2035 Without Project
Time Period: 2035 Weekday AM

Link Inputs

From N	0	1161	940	0	59	410	29	947	62	0
From S	815	0	41	0.001	856,001	984,831	0	SR	ST	SL
From E	0.091	0.001	0.001	0.003	0.001	0	EL	WR	WT	0
From W	59	29	410	0	498	724,531	1123	ER	WL	0
To N	To S	To E	To W				NL	NT	NR	
In - Out	2870,305	2653	217				0	815	41	410

From N	0	947	62	0.001	1009	1160,94	29	29	29	29	To E	To W
From S	815	0	41	0.001	856,001	984,831	0	1090	71	0	0	0
From E	0.091	0.001	0.001	0.003	0.001	0	0	938	0	47	0	0
From W	59	29	410	0	498	724,531	86	42	597	0	0	0
To N	To S	To E	To W				ColTot	1023	1132	715	0	0
Target	940	1123	591	0			Target	940	1123	591	0	0

From N	0	1081	59	0	1140	1161	To N	To S	To E	To W	
From S	861	0	39	0	900	985	0	1101	60	0	
From E	0	0	0	0	0	0	942	0	43	0	
From W	79	42	493	0	614	725	0	49	582	0	
To N	To S	To E	To W				ColTot	1035	1150	685	0
Target	940	1123	591	0			Target	940	1123	591	0

From N	0	1074	52	0	1126	1161	To N	To S	To E	To W	
From S	855	0	37	0	892	985	0	1108	53	0	
From E	0	0	0	0	0	0	944	0	41	0	
From W	84	48	502	0	635	725	0	55	573	0	
To N	To S	To E	To W				ColTot	1041	1163	667	0
Target	940	1123	591	0			Target	940	1123	591	0

From N	0	1070	47	0	1117	1161	To N	To S	To E	To W	
From S	853	0	36	0	889	985	0	1112	49	0	
From E	0	0	0	0	0	0	945	0	40	0	
From W	87	53	508	0	648	725	0	59	568	0	
To N	To S	To E	To W				ColTot	1042	1171	657	0
Target	940	1123	591	0			Target	940	1123	591	0

Turn Movements and Traffic Volumes

Year	Existing	2035	0	945	40	49	1112	0	97	568	59	0	0	0
			NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South Bush at East/West Santa Ana
 Intersection: 703

Scenario: 2035 Without Project
 Time Period: 2035 Weekday AM

Link Inputs

From N	0	86	0.001	34	120.001	137.876
From S	111	0	0.001	21	132.001	151.78
From E	81	23	0	556	660	738.899
From W	0	0	0.001	0	0.003	0.001
To N	To S	To E	To W			
ColTot	220	125	0	703		
Target	220	125	0	703		

Turn Move Inputs

SR	ST	SL	WR	WL	NR
34	86	0	0	0	0
EL	ET	ER	WT	WL	NR
0	0	0	556	23	0
NL	NT	NR			
21	111	0			

In - Out 1048.557 1049 0

From N	0	94	27	0.001	121.001	139.035
From S	110	0	28	0.001	138.001	158.732
From E	0.001	0.001	0	0.001	0.003	0.001
From W	22	13	313	0	348	534.268
To N	To S	To E	To W			
ColTot	160	128	544			
Target	152	123	424			

Turn Move Inputs

SR	ST	SL	WR	WL	NR
0	94	27	0	0	0
EL	ET	ER	WT	WL	NR
22	313	0	0	0	0
NL	NT	NR			
13	0	110	28		

In - Out 832.0354 698.7 133.4

From N	0	104	24	0	128	139
From S	120	0	25	0	145	159
From E	0	0	0	0	0	0
From W	32	19	375	0	426	534
To N	To S	To E	To W			
ColTot	171	137	524			
Target	152	123	424			

Turn Move Inputs

SR	ST	SL	WR	WL	NR
0	104	24	0	0	0
EL	ET	ER	WT	WL	NR
139	159	0	0	0	0
NL	NT	NR			
137	137	524			

In - Out 171 137 524 0

From N	0	101	21	0	123	139
From S	116	0	22	0	139	159
From E	0	0	0	0	0	0
From W	36	22	380	0	438	534
To N	To S	To E	To W			
ColTot	177	141	514			
Target	152	123	424			

Turn Move Inputs

SR	ST	SL	WR	WL	NR
0	101	21	0	0	0
EL	ET	ER	WT	WL	NR
139	159	0	0	0	0
NL	NT	NR			
141	141	514			

In - Out 177 141 514 0

From N	0	100	20	0	120	139
From S	114	0	21	0	136	159
From E	0	0	0	0	0	0
From W	37	23	383	0	443	534
To N	To S	To E	To W			
ColTot	179	144	509			
Target	152	123	424			

Turn Move Inputs

SR	ST	SL	WR	WL	NR
0	100	20	0	0	0
EL	ET	ER	WT	WL	NR
139	159	0	0	0	0
NL	NT	NR			
144	144	509			

In - Out 179 144 509 0

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	0	110	28	27	94	0	22	313	13	0	0	0
2035	0	134	25	23	116	0	45	462	28	0	0	0

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South Bush at East/West Santa Ana
 Intersection: 703

Scenario: 2035 Without Project
 Time Period: 2035 Weekday AM

Link Inputs

From N	0	86	0.001	34	120.001	137.876
From S	111	0	0.001	21	132.001	151.78
From E	81	23	0	556	660	738.899
From W	0	0	0.001	0	0.003	0.001
To N	To S	To E	To W			
ColTot	220	125	0	703		
Target	220	125	0	703		

Turn Move Inputs

SR	ST	SL	WR	WL	NR
34	86	0	0	0	0
EL	ET	ER	WT	WL	NR
0	0	0	556	23	0
NL	NT	NR			
21	111	0			

In - Out 1048.557 1049 0

From N	0	99	0	39	138	138
From S	127	0	24	152	152	152
From E	93	26	0	640	759	759
From W	0	0	0	0	0	0
To N	To S	To E	To W			
ColTot	220	125	0	703		
Target	220	125	0	703		

Turn Move Inputs

SR	ST	SL	WR	WL	NR
0	99	0	39	0	39
EL	ET	ER	WT	WL	NR
138	152	0	0	0	24
NL	NT	NR			
759	759	759			

In - Out 220 125 0 703

From N	0	99	0	39	138	138
From S	127	0	24	152	152	152
From E	93	26	0	640	759	759
From W	0	0	0	0	0	0
To N	To S	To E	To W			
ColTot	220	125	0	703		
Target	220	125	0	703		

Turn Move Inputs

SR	ST	SL	WR	WL	NR
0	99	0	39	0	39
EL	ET	ER	WT	WL	NR
138	152	0	0	0	24
NL	NT	NR			
759	759	759			

In - Out 220 125 0 703

From N	0	99	0	39	138	138
From S	127	0	24	152	152	152
From E	93	26	0	640	759	759
From W	0	0	0	0	0	0
To N	To S	To E	To W			
ColTot	220	125	0	703		
Target	220	125	0	703		

Turn Move Inputs

SR	ST	SL	WR	WL	NR
0	99	0	39	0	39
EL	ET	ER	WT	WL	NR
138	152	0	0	0	24
NL	NT	NR			
759	759	759			

In - Out 220 125 0 703

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	21	111	0	0	86	34	0	0	0	23	556	81
2035	24	128	0	0	99	39	0	0	0	26	640	93

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West at 1st Scenario: 2035 Without Project
 Intersection: Bush at 4th Time Period: 2035 Weekday AM

Link Inputs

North		Turn Move Inputs	
From N	0	SR	4
From S	123	EL	7
From E	18	ET	71
From W	7	ER	10
To N	101	NL	7
To S	170	NT	123
To E	170	NR	71
To W	101	SR	16
		SL	10
		WR	18
		WT	120
		WL	10
		NT	NR
		ST	SL
		ET	ET
		ER	ER
		NL	NL
		NT	NT
		NR	NR
		SR	SR
		SL	SL
		WR	WR
		WT	WT
		WL	WL
		NT	NT
		NR	NR
		SR	SR
		SL	SL
		WR	WR
		WT	WT
		WL	WL
		NT	NT
		NR	NR
		SR	SR
		SL	SL
		WR	WR
		WT	WT
		WL	WL
		NT	NT
		NR	NR
		SR	SR
		SL	SL
		WR	WR
		WT	WT
		WL	WL
		NT	NT
		NR	NR
		SR	SR
		SL	SL
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Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West
 Intersection: French 4th

Scenario: 2035 Without Project
 Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs																
North		SR				EL				ER								
From N	To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W		
0	31	61	12	104	119.6	0	36	70	14	0	36	70	14	0	36	70	14	
From S	18	0	30	3	51	58.65	21	0	35	3	21	0	35	3	21	0	35	
From E	42	37	0	182	261	300.15	48	43	0	209	300	48	43	0	209	300	48	
From W	1	4	50	0	55	63.25	1	5	58	0	1	5	58	0	1	5	58	
In - Out		541.65	541.7	0			70	83	162	227	70	83	162	227	70	83	162	227
ColTot							70	83	162	227	70	83	162	227	70	83	162	227
Target							70	83	162	227	70	83	162	227	70	83	162	227

Turn Movements and Traffic Volumes											
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WR
Existing	3	18	30	61	31	12	1	50	4	37	182
2035	3	21	35	70	36	14	1	58	5	43	209

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West
 Intersection: French Santa Ana

Scenario: 2035 Without Project
 Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs															
North		SR				EL				ER							
From N	To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W	
0	24	0.001	2	26.001	29.9	0	28	0	2	0	28	0	2	0	28	0	
From S	19	0	0.001	44	63.001	72.45	22	0	0	51	22	0	0	51	22	0	
From E	10	12	0	783	805	925.75	12	14	0	900	11	14	0	900	11	14	
From W	0	0.001	0.001	0	0.003	0.001	0	0	0	0	0	0	0	0	0	0	
In - Out		1028.101	1028	0			33	41	0	953	33	41	0	953	33	41	0
ColTot							33	41	0	953	33	41	0	953	33	41	0
Target							33	41	0	953	33	41	0	953	33	41	0

Turn Movements and Traffic Volumes											
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WR
Existing	44	19	0	0	24	2	0	0	0	12	783
2035	51	22	0	0	28	2	0	0	0	14	900

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South Lacy at East/West Ist Scenario: 2035 Without Project Time Period: 2035 Weekday AM

Intersection: North/South Santiago at East/West Washington Scenario: 2035 Without Project Time Period: 2035 Weekday AM

Link Inputs		Row/Tl		Target		To N		To S		To E		To W	
From N	0	0	76	85	97.75	0	0	0	0	0	0	0	0
From S	0.001	0	0.001	0.001	0.001	0	0	0	0	0	0	0	0
From E	22	0	823	845	971.75	25	0	25	0	0	0	0	946
From W	159	8	1366	0	1533	183	9	183	9	1571	0	0	0
To N	To S	To E	To W	ColTot	208	9	1581	1034	1034	1366	1366	0	0
In - Out	2832.451	2837	-4.6	Target	209	0	1594	1034	1034	1366	1366	0	0

Link Inputs		Row/Tl		Target		To N		To S		To E		To W	
From N	0	0	10	87	98	0	0	0	0	0	0	0	0
From S	0	0	0	0	0	0	0	0	0	0	0	0	0
From E	25	0	0	946	972	972	0	972	0	0	0	0	946
From W	184	0	1583	0	1767	1763	0	1580	0	1580	0	0	0
To N	To S	To E	To W	ColTot	209	0	1590	1034	1034	1594	1034	0	0
In - Out	2832.451	2837	-4.6	Target	209	0	1594	1034	1034	1594	1034	0	0

Link Inputs		Row/Tl		Target		To N		To S		To E		To W	
From N	0	0	10	87	98	0	0	0	0	0	0	0	0
From S	0	0	0	0	0	0	0	0	0	0	0	0	0
From E	26	0	0	947	972	972	0	972	0	0	0	0	946
From W	184	0	1583	0	1767	1763	0	1580	0	1580	0	0	0
To N	To S	To E	To W	ColTot	209	0	1590	1034	1034	1594	1034	0	0
In - Out	2832.451	2837	-4.6	Target	209	0	1594	1034	1034	1594	1034	0	0

Turn Move Inputs		Row/Tl		Target		To N		To S		To E		To W	
From N	0	0	76	85	97.75	0	0	0	0	0	0	0	0
From S	0.001	0	0.001	0.001	0.001	0	0	0	0	0	0	0	0
From E	22	0	823	845	971.75	25	0	25	0	0	0	0	946
From W	159	8	1366	0	1533	183	9	183	9	1571	0	0	0
To N	To S	To E	To W	ColTot	208	9	1581	1034	1034	1366	1366	0	0
In - Out	2832.451	2837	-4.6	Target	209	0	1594	1034	1034	1366	1366	0	0

Turn Move Inputs		Row/Tl		Target		To N		To S		To E		To W	
From N	0	0	10	87	98	0	0	0	0	0	0	0	0
From S	0	0	0	0	0	0	0	0	0	0	0	0	0
From E	25	0	0	946	972	972	0	972	0	0	0	0	946
From W	184	0	1583	0	1767	1763	0	1580	0	1580	0	0	0
To N	To S	To E	To W	ColTot	209	0	1590	1034	1034	1594	1034	0	0
In - Out	2832.451	2837	-4.6	Target	209	0	1594	1034	1034	1594	1034	0	0

Turn Move Inputs		Row/Tl		Target		To N		To S		To E		To W	
From N	0	0	10	87	98	0	0	0	0	0	0	0	0
From S	0	0	0	0	0	0	0	0	0	0	0	0	0
From E	26	0	0	947	972	972	0	972	0	0	0	0	946
From W	184	0	1583	0	1767	1763	0	1580	0	1580	0	0	0
To N	To S	To E	To W	ColTot	209	0	1590	1034	1034	1594	1034	0	0
In - Out	2832.451	2837	-4.6	Target	209	0	1594	1034	1034	1594	1034	0	0

Turn Movements and Traffic Volumes		Row/Tl		Target		To N		To S		To E		To W	
Year Existing	2035	0	0	0	87	87	183	1580	0	0	0	946	26
Year	2035	56	244	124	23	584	153	85	64	184	177	32	32

Turn Movements and Traffic Volumes		Row/Tl		Target		To N		To S		To E		To W	
Year Existing	2035	0	0	0	76	76	159	1366	8	0	823	22	22
Year	2035	34	109	78	14	188	90	108	98	39	114	200	27

Turn Move Inputs		Row/Tl		Target		To N		To S		To E		To W	
From N	0	0	188	14	90	292	759.702	39	39	39	39	234	234
From S	109	0	78	34	221	423.879	209	0	150	65	65	65	
From E	27	114	0	200	341	392.774	31	131	0	230	230	230	
From W	108	39	98	0	245	281.546	124	45	113	0	113	0	
To N	To S	To E	To W	ColTot	364	665	299	530	530	383	808	218	373
In - Out	1857.901	1782	76.12	Target	383	808	218	373	373	383	808	218	373

Turn Move Inputs		Row/Tl		Target		To N		To S		To E		To W	
From N	0	0	594	27	165	786	760	0	575	26	159	159	159
From S	220	0	109	46	375	424	248	0	248	0	123	52	52
From E	33	160	0	162	354	393	36	177	0	180	180	180	
From W	130	54	82	0	267	282	137	57	87	0	87	0	
To N	To S	To E	To W	ColTot	422	809	236	391	391	422	809	236	391
In - Out	1857.901	1782	76.12	Target	383	808	218	373	373	383	808	218	373

Turn Move Inputs		Row/Tl		Target		To N		To S		To E		To W	
From N	0	0	574	24	152	750	760	0	582	24	154	154	154
From S	225	0	114	50	389	424	246	0	246	0	124	54	54
From E	33	177	0	171	381	393	34	182	0	177	177	177	
From W	125	57	80	0	262	282	134	62	86	0	86	0	
To N	To S	To E	To W	ColTot	413	825	234	385	385	413	825	234	385
In - Out	1857.901	1782	76.12	Target	383	808	218	373	373	383	808	218	373

Turn Movements and Traffic Volumes		Row/Tl		Target		To N		To S		To E		To W	
Year Existing	2035	0	0	0	741	760	0	584	23	153	153	153	153
Year	2035	227	0	116	52	395	424	244	0	124	56	56	56
Year Existing	2035	31	178	0	171	381	393	32	184	0	177	177	177
Year	2035	124	60	80	0	264	282	132	64	85	0	85	0
To N	To S	To E	To W	ColTot	408	832	232	386	386	408	832	232	386
In - Out	1857.901	1782	76.12	Target	383	808	218	373	373	383	808	218	373

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West
 Intersection: Santiago at Civic Center

Scenario: 2035 Without Project
 Time Period: 2035 Weekday AM

Link Inputs

North	898	514	113	8
SR	1083	683	1539	1539
EL	769	391	747	747
ET	337	158	28	28
ER	3413.971	2851	562.9	562.9
NL				
NT				
NR				
ColTot	391	391	391	391

Turn Move Inputs

North	84	148	207	207
SR	28	28	28	28
EL	0	320	447	181
ET	64	0	68	25
ER	386	142	0	1011
NL	51	48	670	0
NT	502	509	1185	1218
NR	683	337	747	1083
ColTot	1166	1227	12658	116085

From N	0	148	207	84	439	948,004	RowTt	Target	To N	To S	To E	To W
From S	56	0	59	22	137	157,579	655	948	0	306	408	234
From E	319	117	0	835	1271	1539,25	153	158	90	0	44	23
From W	30	28	391	0	449	769,136	1519	1539	533	95	0	911
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	To S	To E	To W
0	212	282	161	655	948	0	306	408	234	0	306	408
88	0	43	23	153	158	88	0	43	23	90	0	44
526	94	0	899	1519	1539	526	94	0	899	533	95	0
70	32	422	0	524	769	70	32	422	0	103	47	620
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	726	448	1072
0	212	282	161	655	948	683	337	747	1083	683	337	747

From N	0	231	284	217	732	948	RowTt	Target	To N	To S	To E	To W
From S	85	0	31	21	137	158	732	948	0	299	368	281
From E	502	72	0	845	1418	1539	137	158	98	0	35	25
From W	97	35	432	0	564	769	1418	1539	544	78	0	917
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85	0	31	21	98	0	35
97	35	432	0	564	769	502	72	0	845	544	78	0
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85	0	31	21	98	0	35
97	35	432	0	564	769	502	72	0	845	544	78	0
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85	0	31	21	98	0	35
97	35	432	0	564	769	502	72	0	845	544	78	0
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85	0	31	21	98	0	35
97	35	432	0	564	769	502	72	0	845	544	78	0
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85	0	31	21	98	0	35
97	35	432	0	564	769	502	72	0	845	544	78	0
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85	0	31	21	98	0	35
97	35	432	0	564	769	502	72	0	845	544	78	0
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85	0	31	21	98	0	35
97	35	432	0	564	769	502	72	0	845	544	78	0
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85	0	31	21	98	0	35
97	35	432	0	564	769	502	72	0	845	544	78	0
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85	0	31	21	98	0	35
97	35	432	0	564	769	502	72	0	845	544	78	0
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85	0	31	21	98	0	35
97	35	432	0	564	769	502	72	0	845	544	78	0
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85	0	31	21	98	0	35
97	35	432	0	564	769	502	72	0	845	544	78	0
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85	0	31	21	98	0	35
97	35	432	0	564	769	502	72	0	845	544	78	0
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85	0	31	21	98	0	35
97	35	432	0	564	769	502	72	0	845	544	78	0
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85	0	31	21	98	0	35
97	35	432	0	564	769	502	72	0	845	544	78	0
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85	0	31	21	98	0	35
97	35	432	0	564	769	502	72	0	845	544	78	0
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85	0	31	21	98	0	35
97	35	432	0	564	769	502	72	0	845	544	78	0
To N	To S	To E	To W	RowTt	Target	To N	To S	To E	To W	132	48	589
0	231	284	217	732	948	774	424	993	1222	683	337	747
85	0	31	21	137	158	0	299	368	281	0	299	368
502	72	0	845	1418	1539	85						

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West
 Intersection: Grand at Santa Ana

Scenario: 2035 Without Project
 Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs																							
North		From N				From S				From E				From W											
1066	2856	1120	124	305	157	1733	1066	4224	660	167	167	404	404	404	404	1657	103	1096							
838	1733	1066	124	305	157	1733	1066	4224	660	167	167	404	404	404	404	1657	103	1096							
In - Out		4883.82		4224		660		167		167		404		404		1657		1096							
From N	0	1094	68	724	1886	2856.2	0	891	0	34	140	0	0	0	0	0	0	0	0						
From S	775	0	30	122	927	1065.9	891	0	34	140	0	0	0	0	0	0	0	0	0						
From E	18	9	0	81	108	123.97	25	10	0	0	93	0	0	0	0	0	0	0	0						
From W	157	404	167	0	728	837.69	181	465	192	0	0	0	0	0	0	0	0	0	0						
To N	To S		To E		To W		To N		To S		To E		To W		To N		To S		To E						
ColTot	1092	2132	330	1330	1120	1733	305	1066	1120	1733	305	1066	1120	1733	305	1066	1120	1733	305	1066					
Target	1120		1733		305		1066		1120		1733		305		1066		1120		1733						
From N	0	1347	95	879	2321	2856	0	1658	117	1082	0	0	0	0	0	0	0	0	0	0					
From S	913	0	32	112	1058	1066	920	0	32	113	0	0	0	0	0	0	0	0	0	0					
From E	21	8	0	75	104	124	25	10	0	89	0	0	0	0	0	0	0	0	0	0					
From W	185	378	178	0	741	838	209	427	201	0	0	0	0	0	0	0	0	0	0	0					
To N	To S		To E		To W		To N		To S		To E		To W		To N		To S		To E						
ColTot	1155	2095	350	1284	1120	1733	305	1066	1120	1733	305	1066	1120	1733	305	1066	1120	1733	305	1066					
Target	1120		1733		305		1066		1120		1733		305		1066		1120		1733						
From N	0	1371	102	898	2371	2856	0	1652	123	1082	0	0	0	0	0	0	0	0	0	0					
From S	892	0	28	94	1014	1066	938	0	29	99	0	0	0	0	0	0	0	0	0	0					
From E	24	8	0	74	106	124	28	10	0	86	0	0	0	0	0	0	0	0	0	0					
From W	203	354	175	0	731	838	233	405	200	0	0	0	0	0	0	0	0	0	0	0					
To N	To S		To E		To W		To N		To S		To E		To W		To N		To S		To E						
ColTot	1199	2066	352	1266	1120	1733	305	1066	1120	1733	305	1066	1120	1733	305	1066	1120	1733	305	1066					
Target	1120		1733		305		1066		1120		1733		305		1066		1120		1733						
From N	0	1386	106	910	2402	2856	0	1647	126	1083	0	0	0	0	0	0	0	0	0	0					
From S	876	0	25	83	985	1066	948	0	28	90	0	0	0	0	0	0	0	0	0	0					
From E	27	8	0	72	107	124	31	9	0	84	0	0	0	0	0	0	0	0	0	0					
From W	217	340	173	0	730	838	249	390	199	0	0	0	0	0	0	0	0	0	0	0					
To N	To S		To E		To W		To N		To S		To E		To W		To N		To S		To E						
ColTot	1120	1733	305	1066	1120	1733	305	1066	1120	1733	305	1066	1120	1733	305	1066	1120	1733	305	1066					
Target	1120		1733		305		1066		1120		1733		305		1066		1120		1733						
Year	NL	NT	SL	ST	SR	EL	ET	ER	WL	WT	WR	Turn Movements and Traffic Volumes													
Existing	122	775	30	68	1094	724	157	167	404	9	81	18	90	948	28	126	1647	1083	249	199	390	9	84	31	
2035	103	311	109	124	502	95	114	1101	108	103	311	109	103	124	502	95	114	1101	108	103	311	109	103	124	502

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West
 Intersection: Grand at 4th

Scenario: 2035 Without Project
 Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs																						
North		From N				From S				From E				From W										
510	722	334	524	1335	714	524	3092.37	0	83	108	83	628	721.82	0	502	124	95							
1323	714	524	1335	714	524	3092.37	0	83	108	83	628	721.82	0	502	124	95	103							
In - Out		3092.37		0		83		108		83		628		721.82		103		311		510				
From N	0	437	108	83	628	721.82	0	311	0	109	103	524	524	0	311	0	109	103	0	0	0	0	0	0
From S	271	0	95	90	456	523.7	311	0	109	103	524	524	0	311	0	109	103	0	0	0	0	0	0	0
From E	95	90	0	271	456	523.7	109	103	0	114	108	1101	0	0	0	0	0	0	0	0	0	0	0	0
From W	99	94	958	0	1151	1323.1	109	103	0	114	108	1101	0	0	0	0	0	0	0	0	0	0	0	0
To N	To S		To E		To W		To N		To S		To E		To W		To N		To S		To E					
ColTot	534	714	1335	510	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94
Target	534		714		1335		510		534		714		1335		510		534		714		1335		510	
From N	0	502	124	95	722	722	0	502	124	95	722	722	0	0	0	0	0	0	0	0	0	0	0	0
From S	311	0	109	103	524	524	311	0	109	103	524	524	0	0	0	0	0	0	0	0	0	0	0	0
From E	109	103	0	311	524	524	109	103	0	311	524	524	0	0	0	0	0	0	0	0	0	0	0	0
From W	114	108	1101	0	1323	1323	114	108	1101	0	1323	1323	0	0	0	0	0	0	0	0	0	0	0	0
To N	To S		To E		To W		To N		To S		To E		To W		To N		To S		To E					
ColTot	534	714	1335	510	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94
Target	534		714		1335		510		534		714		1335		510		534		714		1335		510	
From N	0	502	124	95	722	722	0	502	124	95	722	722	0	0	0	0	0	0	0	0	0	0	0	0
From S	311	0	109	103	524	524	311	0	109	103	524	524	0	0	0	0	0	0	0	0	0	0	0	0
From E	109	103	0	311	524	524	109	103	0	311	524	524	0	0	0	0	0	0	0	0	0	0	0	0
From W	114	108	1101	0	1323	1323	114	108	1101	0	1323	1323	0	0	0	0	0	0	0	0	0	0	0	0
To N	To S		To E		To W		To N		To S		To E		To W		To N		To S		To E					
ColTot	534	714	1335	510	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94
Target	534		714		1335		510		534		714		1335		510		534		714		1335		510	
From N	0	502	124	95	722	722	0	502	124	95	722	722	0	0	0	0	0	0	0	0	0	0	0	0
From S	311	0	109	103	524	524	311	0	109	103	524	524	0	0	0	0	0	0	0	0	0	0	0	0
From E	109	103	0	311	524	524	109	103	0	311	524	524	0	0	0	0	0	0	0	0	0	0	0	0
From W	114	108	1101	0	1323	1323	114	108	1101	0	1323	1323	0	0	0	0	0	0	0	0	0	0	0	0
To N	To S		To E		To W		To N		To S		To E		To W		To N		To S		To E					
ColTot	534	714	1335	510	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94
Target	534		714		1335		510		534		714		1335		510		534		714		1335		510	
Year	NL	NT	SL	ST	SR	EL	ET	ER	WL	WT	WR	Turn Movements and Traffic Volumes												
Existing	90	271	95	108	437	83	99	958	94	90	271	95	108	437	83	99	958	94	90	271	95	108	437	83
2035	103	311	109	124	502	95	114	1101	108	103	311	109	103	124	502									

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at Grand East/West at 1st
 Intersection: 2035 Without Project Scenario: 2035 Weekday AM
 Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs	
North	South	North	South
1156	1587	78	1197
1650	928	986	106
		275	SL
		908	WR
		204	WT
		204	WL
			NR
		1889	NT
		1053	ET
		5181	ER
		94.36	EL
			SR
			ST
			SL
			WR
			WT
			WL
			NR
			NT
			ET
			ER
			EL
			SR
			ST
			SL
			WR
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			ER
			EL

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South 1-5 SB Ramps at Santa Ana Bl East/West Scenario: 2030 w/o Project Baseline 2035 Without Project 2035 Weekday AM
 Intersection: 1-5 SB Ramps at Santa Ana Bl East/West Scenario: 2035 Without Project 2035 Weekday AM

Link Inputs		Turn Move Inputs															
North		From N				From S				From E				From W			
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W		
535	388	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
1090	1265	76	389	188	380	0	0	0	0	0	0	0	0	0	0		
653	864	SR	ST	SL	WR	EL	ET	WT	ER	EN	EW	NR	NR	NR	NR		
		0	0	0	0	0	0	0	0	0	0	0	0	0	0		
In-Out	2452.659	2562	90.558	380	380	380	380	380	380	380	380	380	380	380	380		
Row/Tot	Target	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
From N	0	0.001	389	76	465	534.75	0	0	0	0	0	0	0	0	0		
From S	0.001	0	0.001	0.001	0.003	0.001	0	0	0	0	0	0	0	0	0		
From E	149	0.001	0	872	1021	1264.7	185	0	0	0	1080	0	0	0	0		
From W	188	0.001	380	0	568	653.2	216	0	0	437	0	0	0	0	0		
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W		
ColTot	401	401	884	1168	388	388	0	884	1157	884	1090	388	388	0	884		
Target	388	0	884	1090	388	0	884	1157	884	1090	388	388	0	884	1090		
Row/Tot	Target	0	447	82	529	535	0	0	0	452	83	0	0	0	0		
From N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
From S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
From E	178	0	0	1009	1187	1265	190	0	0	1075	0	0	0	0	0		
From W	209	0	437	0	646	653	211	0	0	442	0	0	0	0	0		
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W		
ColTot	402	402	894	1157	388	388	0	884	1157	884	1090	388	388	0	884		
Target	388	0	884	1090	388	0	884	1157	884	1090	388	388	0	884	1090		
Row/Tot	Target	0	447	78	525	535	0	0	0	456	79	0	0	0	0		
From N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
From S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
From E	184	0	0	1012	1196	1265	194	0	0	1071	0	0	0	0	0		
From W	204	0	437	0	641	653	208	0	0	445	0	0	0	0	0		
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W		
ColTot	402	402	901	1150	388	388	0	884	1145	884	1090	388	388	0	884		
Target	388	0	884	1090	388	0	884	1145	884	1090	388	388	0	884	1090		
Row/Tot	Target	0	447	75	522	535	0	0	0	458	77	0	0	0	0		
From N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
From S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
From E	187	0	0	1015	1202	1265	197	0	0	1068	0	0	0	0	0		
From W	200	0	437	0	638	653	205	0	0	448	0	0	0	0	0		
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W		
ColTot	402	402	906	1145	388	388	0	884	1145	884	1090	388	388	0	884		
Target	388	0	884	1090	388	0	884	1145	884	1090	388	388	0	884	1090		
Pct	1.03776	1.0345	1.0242	1.05002	1.03776	1.0345	1.0242	1.05002	1.03776	1.0345	1.0242	1.05002	1.03776	1.0345	1.0242		

Turn Movements and Traffic Volumes											
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WR
Existing	0	0	0	389	0	76	188	380	0	0	872
2035	0	0	0	458	0	77	205	448	0	0	1068
											197

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South 1-5 NB Ramps at 17th St East/West Scenario: 2030 w/o Project Baseline 2035 Without Project 2035 Weekday AM
 Intersection: 1-5 NB Ramps at 17th St East/West Scenario: 2035 Without Project 2035 Weekday AM

Link Inputs		Turn Move Inputs															
North		From N				From S				From E				From W			
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W		
2152	1285	242	271	117	215	785	0	0	0	0	0	0	0	0	0		
1285	1353	SR	ST	SL	WR	EL	ET	WT	ER	EN	EW	NR	NR	NR	NR		
		0	0	0	0	0	0	0	0	0	0	0	0	0	0		
In-Out	3692.552	3649	43.602	785	785	785	785	785	785	785	785	785	785	785	785		
Row/Tot	Target	0	0	33	177	210	241.5	0	0	38	204	0	0	0	0		
From N	0	0	0	33	177	210	241.5	0	0	38	204	0	0	0	0		
From S	76	0	33	598	707	813.05	87	0	0	38	688	0	0	0	0		
From E	43	0	0	1096	1139	1353.5	51	0	0	1302	0	0	0	0	0		
From W	117	215	785	0	1117	1284.6	135	247	903	0	0	0	0	0	0		
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W		
ColTot	273	247	979	2194	271	247	979	2194	271	247	979	2194	271	247	979		
Target	271	247	979	2152	271	247	979	2152	271	247	979	2152	271	247	979		
Row/Tot	Target	0	0	38	200	238	242	0	0	39	202	0	0	0	0		
From N	0	0	0	38	200	238	242	0	0	39	202	0	0	0	0		
From S	87	0	38	675	799	813	88	0	0	39	686	0	0	0	0		
From E	51	0	0	1277	1328	1353	52	0	0	1302	0	0	0	0	0		
From W	134	247	903	0	1284	1285	134	247	903	0	0	0	0	0	0		
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W		
ColTot	274	247	980	2191	271	247	979	2152	271	247	979	2152	271	247	979		
Target	274	247	980	2191	271	247	979	2152	271	247	979	2152	271	247	979		
Row/Tot	Target	0	38	199	238	242	0	0	39	202	0	0	0	0	0		
From N	0	0	38	199	238	242	0	0	39	202	0	0	0	0	0		
From S	88	0	39	674	800	813	89	0	0	39	685	0	0	0	0		
From E	51	0	0	1278	1330	1353	52	0	0	1301	0	0	0	0	0		
From W	133	247	902	0	1281	1285	133	248	904	0	0	0	0	0	0		
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W		
ColTot	274	248	982	2189	271	247	979	2152	271	247	979	2152	271	247	979		
Target	271	247	979	2152	271	247	979	2152	271	247	979	2152	271	247	979		
Row/Tot	Target	0	39	199	238	242	0	0	40	202	0	0	0	0	0		
From N	0	0	39	199	238	242	0	0	40	202	0	0	0	0	0		
From S	88	0	39	673	800	813	89	0	0	40	684	0	0	0	0		
From E	52	0	0	1279	1331	1353	53	0	0	1301	0	0	0	0	0		
From W	132	247	901	0	1280	1285	132	248	904	0	0	0	0	0	0		
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W		
ColTot	274	248	983	2187	271	247	979	2152	271	247	979	2152	271	247	979		
Target	271	247	979	2152	271	247	979	2152	271	247	979	2152	271	247	979		
Pct	1.01021	1.0039	1.0048	1.01633	1.01021	1.0039	1.0048	1.01633	1.01021	1.0039	1.0048	1.01633	1.01021	1.0039	1.0048		

Turn Movements and Traffic Volumes											
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WR
Existing	598	76	33	0	177	117	785	215	0	1096	43
2035	684	89	40	40	202	132	904	248	0	1301	53

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2035 Without Project
 Intersection: Ross at Civic Center Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs		North		South		West		East	
From	To	To N	To S	To N	To S	To N	To S	To N	To S	To N	To S
From N	0	131	70	80	131	70	80	131	70	80	131
From S	218	0	115	72	405	464.61	0	150	80	92	0
From E	88	44	0	522	654	751.95	0	250	0	132	83
From W	46	52	583	0	681	843.47	0	101	51	0	600
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W
ColTot	408	265	934	774	404	262	883	774	404	262	883
Target	404	262	883	774	404	262	883	774	404	262	883
Pct	1.0242	1.0255	1.033	1.01739	1.0242	1.0255	1.033	1.01739	1.0242	1.0255	1.033

Link Inputs		Turn Move Inputs		North		South		West		East	
From	To	To N	To S	To N	To S	To N	To S	To N	To S	To N	To S
From N	0	148	76	92	316	322	0	151	77	93	0
From S	248	0	125	83	455	465	0	253	0	127	84
From E	100	50	0	600	750	752	0	100	50	0	601
From W	56	64	682	0	802	843	0	60	68	715	0
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W
ColTot	413	268	922	779	413	268	922	779	413	268	922
Target	413	268	922	779	413	268	922	779	413	268	922
Pct	1.0242	1.0255	1.033	1.01739	1.0242	1.0255	1.033	1.01739	1.0242	1.0255	1.033

Link Inputs		Turn Move Inputs		North		South		West		East	
From	To	To N	To S	To N	To S	To N	To S	To N	To S	To N	To S
From N	0	147	73	94	314	322	0	151	76	95	0
From S	248	0	120	85	453	465	0	254	0	125	86
From E	97	48	0	595	741	752	0	99	49	0	603
From W	59	66	689	0	815	843	0	60	68	715	0
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W
ColTot	414	269	912	787	414	269	912	787	414	269	912
Target	414	269	912	787	414	269	912	787	414	269	912
Pct	1.0242	1.0255	1.033	1.01739	1.0242	1.0255	1.033	1.01739	1.0242	1.0255	1.033

Turn Movements and Traffic Volumes												
Year	ML	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	72	218	115	70	131	80	46	583	52	44	522	88
2035	87	254	123	75	151	96	61	714	69	49	604	99

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2035 Without Project
 Intersection: Ross at Santa Ana Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs		North		South		West		East	
From	To	To N	To S	To N	To S	To N	To S	To N	To S	To N	To S
From N	0	131	70	80	131	70	80	131	70	80	131
From S	218	0	115	72	405	565.4	0	150	80	92	0
From E	52	46	0	583	681	784.39	0	292	0	112	112
From W	62	73	646	0	781	1133.4	0	52	51	0	681
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W
ColTot	454	309	1178	864	454	309	1178	864	454	309	1178
Target	382	287	1034	845	382	287	1034	845	382	287	1034
Pct	1.10453	1.1009	1.1165	1.08045	1.10453	1.1009	1.1165	1.08045	1.10453	1.1009	1.1165

Link Inputs		Turn Move Inputs		North		South		West		East	
From	To	To N	To S	To N	To S	To N	To S	To N	To S	To N	To S
From N	0	140	70	90	300	322	0	150	76	96	0
From S	256	0	141	98	495	565	0	292	0	112	112
From E	50	49	0	657	756	784	0	52	51	0	681
From W	76	98	822	0	997	1133	0	86	112	935	0
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W
ColTot	431	313	1172	890	431	313	1172	890	431	313	1172
Target	382	287	1034	845	382	287	1034	845	382	287	1034
Pct	1.10453	1.1009	1.1165	1.08045	1.10453	1.1009	1.1165	1.08045	1.10453	1.1009	1.1165

Turn Movements and Traffic Volumes												
Year	ML	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	72	218	115	70	131	80	62	646	73	46	583	52
2035	122	288	155	71	149	102	87	928	118	49	688	48

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2035 Without Project
 Intersection: Broadway at Santa Ana Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs	
North		North	
From N	0	From N	0
From S	624	From S	624
From E	109	From E	109
From W	0	From W	0
To N	597	To N	597
To S	0	To S	0
To E	0	To E	0
To W	0	To W	0
ColTot	624	ColTot	624
Target	624	Target	624

Row/T/Target		To N		To S		To E		To W	
From N	0	597	0.001	125	722	830.39	0	687	0
From S	624	0	0.001	42	666	765.85	0	718	0
From E	109	41	0	754	904	1123.9	136	51	0
From W	0	0	0.001	0	0.003	0.001	0	0	0
To N	597	To S	0	To E	0	To W	0	624	0
ColTot	624	ColTot	624	ColTot	624	ColTot	624	ColTot	624
Target	624	Target	624	Target	624	Target	624	Target	624

Row/T/Target		To N		To S		To E		To W	
From N	0	683	0	135	818	830	0	694	0
From S	709	0	0	45	754	766	0	720	0
From E	134	51	0	879	1063	1124	141	54	0
From W	0	0	0	0	0	0	0	0	0
To N	683	To S	0	To E	0	To W	0	709	0
ColTot	709	ColTot	709	ColTot	709	ColTot	709	ColTot	709
Target	709	Target	709	Target	709	Target	709	Target	709

Row/T/Target		To N		To S		To E		To W	
From N	0	682	0	130	812	830	0	697	0
From S	704	0	0	44	748	766	0	721	0
From E	138	53	0	885	1076	1124	144	55	0
From W	0	0	0	0	0	0	0	0	0
To N	682	To S	0	To E	0	To W	0	704	0
ColTot	704	ColTot	704	ColTot	704	ColTot	704	ColTot	704
Target	704	Target	704	Target	704	Target	704	Target	704

Row/T/Target		To N		To S		To E		To W	
From N	0	680	0	128	809	830	0	699	0
From S	702	0	0	43	745	766	0	722	0
From E	141	54	0	888	1082	1124	146	56	0
From W	0	0	0	0	0	0	0	0	0
To N	680	To S	0	To E	0	To W	0	702	0
ColTot	702	ColTot	702	ColTot	702	ColTot	702	ColTot	702
Target	702	Target	702	Target	702	Target	702	Target	702

Row/T/Target		To N		To S		To E		To W	
From N	0	680	0	128	809	830	0	699	0
From S	702	0	0	43	745	766	0	722	0
From E	141	54	0	888	1082	1124	146	56	0
From W	0	0	0	0	0	0	0	0	0
To N	680	To S	0	To E	0	To W	0	702	0
ColTot	702	ColTot	702	ColTot	702	ColTot	702	ColTot	702
Target	702	Target	702	Target	702	Target	702	Target	702
Pct	1.02996	Pct	1.0279	Pct	1.0273	Pct	1.03671	Pct	1.03671

Turn Movements and Traffic Volumes											
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WR
Existing	42	624	0	0	597	125	0	0	0	41	754
2035	44	722	0	0	699	131	0	0	0	56	922

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West Scenario: 2035 Without Project
 Intersection: Broadway at 5th Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs	
North		North	
From N	0	From N	0
From S	515	From S	515
From E	0	From E	0
From W	173	From W	173
To N	622	To N	622
To S	0	To S	0
To E	0	To E	0
To W	0	To W	0
ColTot	622	ColTot	622
Target	622	Target	622

Row/T/Target		To N		To S		To E		To W	
From N	0	622	0.001	78	700	805.4	0	716	0
From S	515	0	0.001	68	583	670	0	592	0
From E	0	0	0.001	0	0.003	0.001	0	0	0
From W	173	18	0	554	745	948.5	220	23	705
To N	622	To S	0	To E	0	To W	220	23	705
ColTot	622	ColTot	622	ColTot	622	ColTot	622	ColTot	622
Target	622	Target	622	Target	622	Target	622	Target	622

Row/T/Target		To N		To S		To E		To W	
From N	0	714	130	0	844	805	0	681	124
From S	576	0	113	0	689	670	0	560	110
From E	0	0	0	0	0	0	0	0	0
From W	214	23	1022	0	1259	949	161	17	770
To N	714	To S	130	To E	0	To W	161	17	770
ColTot	714	ColTot	714	ColTot	714	ColTot	714	ColTot	714
Target	714	Target	714	Target	714	Target	714	Target	714

Row/T/Target		To N		To S		To E		To W	
From N	0	718	156	0	875	805	0	661	144
From S	613	0	139	0	752	670	0	546	124
From E	0	0	0	0	0	0	0	0	0
From W	177	18	970	0	1165	949	144	15	790
To N	718	To S	156	To E	0	To W	144	15	790
ColTot	718	ColTot	718	ColTot	718	ColTot	718	ColTot	718
Target	718	Target	718	Target	718	Target	718	Target	718

Row/T/Target		To N		To S		To E		To W	
From N	0	720	172	0	893	805	0	650	155
From S	625	0	148	0	773	670	0	542	128
From E	0	0	0	0	0	0	0	0	0
From W	165	16	945	0	1126	949	139	14	796
To N	720	To S	172	To E	0	To W	139	14	796
ColTot	720	ColTot	720	ColTot	720	ColTot	720	ColTot	720
Target	720	Target	720	Target	720	Target	720	Target	720
Pct	0.86141	Pct	0.9008	Pct	0.8534	Pct	0.88661	Pct	0.88661

Turn Movements and Traffic Volumes											
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WR
Existing	0	515	68	78	622	0	173	554	18	0	0
2035	0	542	128	155	650	0	139	796	14	0	0

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West at 4th
 Intersection: Sycamore Main Civic Center

Scenario: 2035 Without Project
 Time Period: 2035 Weekday AM

Link Inputs

From N	0	8	17	21	46	52.9	Target	To N	To S	To E	To W			
From S	7	0	15	3	25	28.75		0	9	20	24			
From E	20	26	0	163	209	240.35		8	0	17	3			
From W	18	17	126	0	161	185.15		23	30	0	187			
To N	To S	To E	To W					21	20	145	0			
In - Out				507.15	507.2	0					52	59	182	215

Turn Move Inputs

From N	0	9	20	24	53	53	Target	To N	To S	To E	To W			
From S	8	0	17	3	29	29		0	9	20	24			
From E	23	30	0	187	240	240		8	0	17	3			
From W	21	20	145	0	185	185		23	30	0	187			
To N	To S	To E	To W					21	20	145	0			
In - Out				507.15	507.2	0					52	59	182	215

From N	0	854	56	78	988	1136.61	Target	To N	To S	To E	To W			
From S	927	0	81	98	1106	1271.01		0	983	64	90			
From E	64	55	0	364	483	556.14		1066	0	93	113			
From W	125	109	731	0	965	1109.96		74	63	0	419			
To N	To S	To E	To W					144	125	841	0			
In - Out				4073.726	4074	0					1283	1171	998	621

Turn Move Inputs

From N	0	983	64	90	1137	1137	Target	To N	To S	To E	To W			
From S	1066	0	93	112	1272	1271		0	983	64	90			
From E	74	63	0	418	555	556		1066	0	93	112			
From W	144	125	841	0	1110	1110		74	63	0	419			
To N	To S	To E	To W					144	125	841	0			
In - Out				4073.726	4074	0					1283	1171	998	621

From N	0	983	64	89	1136	1137	Target	To N	To S	To E	To W			
From S	1066	0	93	112	1271	1271		0	983	64	89			
From E	74	63	0	418	556	556		1066	0	93	112			
From W	144	125	841	0	1110	1110		74	63	0	419			
To N	To S	To E	To W					144	125	841	0			
In - Out				4073.726	4074	0					1283	1171	998	621

Turn Move Inputs

From N	0	983	65	89	1136	1137	Target	To N	To S	To E	To W			
From S	1066	0	93	112	1271	1271		0	983	65	89			
From E	74	63	0	418	556	556		1066	0	93	112			
From W	144	125	841	0	1110	1110		74	64	0	419			
To N	To S	To E	To W					144	125	841	0			
In - Out				4073.726	4074	0					1284	1171	999	620

From N	0	983	65	89	1136	1137	Target	To N	To S	To E	To W			
From S	1066	0	93	112	1271	1271		0	983	65	89			
From E	74	63	0	418	556	556		1066	0	93	112			
From W	144	125	841	0	1110	1110		74	64	0	419			
To N	To S	To E	To W					144	125	841	0			
In - Out				4073.726	4074	0					1284	1171	999	620

Turn Move Inputs

From N	0	983	65	89	1136	1137	Target	To N	To S	To E	To W			
From S	1066	0	93	112	1271	1271		0	983	65	89			
From E	74	63	0	418	556	556		1066	0	93	112			
From W	144	125	841	0	1110	1110		74	64	0	419			
To N	To S	To E	To W					144	125	841	0			
In - Out				4073.726	4074	0					1284	1171	999	620

From N	0	983	65	89	1136	1137	Target	To N	To S	To E	To W			
From S	1066	0	93	112	1271	1271		0	983	65	89			
From E	74	63	0	418	556	556		1066	0	93	112			
From W	144	125	841	0	1110	1110		74	64	0	419			
To N	To S	To E	To W					144	125	841	0			
In - Out				4073.726	4074	0					1284	1171	999	620

Turn Move Inputs

From N	0	983	65	89	1136	1137	Target	To N	To S	To E	To W			
From S	1066	0	93	112	1271	1271		0	983	65	89			
From E	74	63	0	418	556	556		1066	0	93	112			
From W	144	125	841	0	1110	1110		74	64	0	419			
To N	To S	To E	To W					144	125	841	0			
In - Out				4073.726	4074	0					1284	1171	999	620

Turn Movements and Traffic Volumes

Year	Existing	2035
From N	98	112
From S	927	1066
From E	81	1066
From W	93	65
To N	983	89
To S	854	78
To E	125	731
To W	109	55
EL	125	731
SL	854	78
ST	983	89
SR	89	144
TL	841	125
TR	64	419
WT	364	64
WR	64	74

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West at 4th
 Intersection: Sycamore Main Civic Center

Scenario: 2035 Without Project
 Time Period: 2035 Weekday AM

Link Inputs

From N	0	8	17	21	46	52.9	Target	To N	To S	To E	To W			
From S	7	0	15	3	25	28.75		0	9	20	24			
From E	20	26	0	163	209	240.35		8	0	17	3			
From W	18	17	126	0	161	185.15		23	30	0	187			
To N	To S	To E	To W					21	20	145	0			
In - Out				507.15	507.2	0					52	59	182	215

Turn Move Inputs

From N	0	9	20	24	53	53	Target	To N	To S	To E	To W			
From S	8	0	17	3	29	29		0	9	20	24			
From E	23	30	0	187	240	240		8	0	17	3			
From W	21	20	145	0	185	185		23	30	0	187			
To N	To S	To E	To W					21	20	145	0			
In - Out				507.15	507.2	0					52	59	182	215

From N	0	9	20	24	53	53	Target	To N	To S	To E	To W			
From S	8	0	17	3	29	29		0	9	20	24			
From E	23	30	0	187	240	240		8	0	17	3			
From W	21	20	145	0	185	185		23	30	0	187			
To N	To S	To E	To W					21	20	145	0			
In - Out				507.15	507.2	0					52	59	182	215

Turn Move Inputs

From N	0	9	20	24	53	53	Target	To N	To S	To E	To W			
From S	8	0	17	3	29	29		0	9	20	24			
From E	23	30	0	187	240	240		8	0	17	3			
From W	21	20	145	0	185	185		23	30	0	187			
To N	To S	To E	To W					21	20	145	0			
In - Out				507.15	507.2	0					52	59	182	215

From N	0	9	20	24	53	53	Target	To N	To S	To E	To W			
From S	8	0	17	3	29	29		0	9	20	24			
From E	23	30	0	187	240	240		8	0	17	3			
From W	21	20	145	0	185	185		23	30	0	187			
To N	To S	To E	To W					21	20	145	0			
In - Out				507.15	507.2	0					52	59	182	215

Turn Move Inputs

From N	0	9	20	24	53	53	Target	To N	To S	To E	To W			
From S	8	0	17	3	29	29		0	9	20	24			
From E	23	30	0	187	240	240		8	0	17	3			
From W	21	20	145	0	185	185		23	30	0	187			
To N	To S	To E	To W					21	20	145	0			
In - Out				507.15	507.2	0					52	59	182	215

From N	0	9	20	24	53	53	Target	To N	To S	To E	To W			
From S	8	0	17	3	29	29		0	9	20	24			
From E	23	30	0	187	240	240		8	0	17	3			
From W	21	20	145	0	185	185		23	30	0	187			
To N	To S	To E	To W					21	20	145	0			
In - Out				507.15	507.2	0					52	59	182	215

Turn Move Inputs

From N	0	9	20	24	53	53	Target	To N	To S	To E	To W			
From S	8	0	17	3	29	29		0	9	20	24			
From E	23	30	0	187	240	240		8	0	17	3			
From W	21	20	145	0	185	185		23	30	0	187			
To N	To S	To E	To W					21	20	145	0			
In - Out				507.15	507.2	0					52	59	182	215

From N	0	9	20	24	53	53	Target	To N	To S	To E	To W			
From S	8	0	17	3	29	29		0	9	20	24			
From E	23	30	0	187	240	240		8	0	17	3			
From W	21	20	145	0	185	185		23	30	0	187			
To N	To S	To E	To W					21	20	145	0			
In - Out				507.15	507.2	0					52	59	182	215

Turn Move Inputs

From N	0	9	20	24	53	53	Target	To N</
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Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West 5th
 Intersection: Bush

Scenario: 2035 Without Project
 Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs												
North		To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W	
From N	0	240	26	0.001	266.001	305.877	0	276	30	0	281	25	0	0
From S	282	0	59	0.001	341.001	392.774	325	0	68	0	336	0	56	0
From E	0.001	0.001	0	0.001	0.003	0.001	0	0	0	0	0	0	0	0
From W	42	48	564	0	654	1014.49	65	74	875	0	79	89	847	0
To N	To S	To E	To W	ColTot	390	350	973	0	ColTot	373	331	747	0	0
In - Out	1713.146	1452	261.4	0	282	59								

Link Inputs		Turn Move Inputs												
North		To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W	
From N	0	261	23	0	284	306	0	281	25	0	283	22	0	0
From S	311	0	52	0	363	393	341	0	51	0	341	0	51	0
From E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
From W	62	70	672	0	805	1014	86	97	831	0	86	97	831	0
To N	To S	To E	To W	ColTot	415	370	928	0	ColTot	373	331	747	0	0

Link Inputs		Turn Move Inputs												
North		To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W	
From N	0	247	19	0	265	306	0	283	22	0	283	22	0	0
From S	298	0	42	0	340	393	344	0	49	0	344	0	49	0
From E	0	0	0	0	0	0	0	0	0	0	0	0	0	0
From W	75	84	686	0	846	1014	90	101	823	0	86	97	831	0
To N	To S	To E	To W	ColTot	434	386	893	0	ColTot	373	331	747	0	0
In - Out	1713.146	1452	261.4	0	282	59								

Turn Movements and Traffic Volumes																								
Year	NL	NT	SL	ST	SR	EL	ET	ER	WL	WT	WR	Year	NL	NT	SL	ST	SR	EL	ET	ER	WL	WT	WR	
Existing	0	282	59	26	240	0	42	564	48	0	0	2035	0	344	49	21	285	0	90	823	101	0	0	0
2035	0	344	49	21	285	0	90	823	101	0	0	2035	0	344	49	21	285	0	90	823	101	0	0	0

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West 4th
 Intersection: Bush

Scenario: 2035 Without Project
 Time Period: 2035 Weekday AM

Link Inputs		Turn Move Inputs																					
North		To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W										
From N	0	208	39	11	258	296.608	0	239	45	13	297	297	0	239	45	13							
From S	288	0	24	18	330	380.029	332	0	28	21	380	380	332	0	28	21							
From E	38	17	0	165	220	233.739	44	20	0	190	254	254	44	20	0	190							
From W	12	25	129	0	166	191.173	14	29	149	0	191	191	14	29	149	0							
To N	To S	To E	To W	ColTot	389	288	221	224	ColTot	389	287	221	224	389	287	221	224						
In - Out	1121.549	1122	0																				

Link Inputs		Turn Move Inputs															
North		To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W				
From N	0	239	45	13	297	297	0	239	45	13	297	297	0	239	45	13	
From S	332	0	28	21	380	380	332	0	28	21	380	380	332	0	28	21	
From E	44	20	0	190	254	254	44	20	0	190	254	254	44	20	0	190	
From W	14	29	149	0	191	191	14	29	149	0	191	191	14	29	149	0	
To N	To S	To E	To W	ColTot	389	287	221	224	ColTot	389	287	221	224	389	287	221	224

Link Inputs		Turn Move Inputs															
North		To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W				
From N	0	239	45	13	297	297	0	239	45	13	297	297	0	239	45	13	
From S	332	0	28	21	380	380	332	0	28	21	380	380	332	0	28	21	
From E	44	20	0	190	254	254	44	20	0	190	254	254	44	20	0	190	
From W	14	29	149	0	191	191	14	29	149	0	191	191	14	29	149	0	
To N	To S	To E	To W	ColTot	389	287	221	224	ColTot	389	287	221	224	389	287	221	224

Link Inputs		Turn Move Inputs															
North		To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W				
From N	0	239	45	13	297	297	0	239	45	13	297	297	0	239	45	13	
From S	332	0	28	21	380	380	332	0	28	21	380	380	332	0	28	21	
From E	44	20	0	190	254	254	44	20	0	190	254	254	44	20	0	190	
From W	14	29	149	0	191	191	14	29	149	0	191	191	14	29	149	0	
To N	To S	To E	To W	ColTot	389	287	221	224	ColTot	389	287	221	224	389	287	221	224

Turn Movements and Traffic Volumes																								
Year	NL	NT	SL	ST	SR	EL	ET	ER	WL	WT	WR	Year	NL	NT	SL	ST	SR	EL	ET	ER	WL	WT	WR	
Existing	18	288	24	39	208	11	12	129	25	17	165	2035	21	332	28	45	239	13	14	149	29	20	190	44
2035	21	332	28	45	239	13	14	149	29	20	190	44	21	332	28	45	239	13	14	149	29	20	190	44

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South French at East/West 4th Scenario: 2035 Without Project
 Intersection: North/South Lacy at Civic Center Time Period: 2035 Weekday AM

Link Inputs

From N	0	12	15	12	12	12	12	12	12	
From S	21	0	38	20	79	91	53	14	23	
From E	15	8	0	189	212	244	47	0	218	
From W	13	16	538	0	567	652	306	0	258	
To N	To S	To E	To W	ColTot						258
				Target						258

Turn Move Inputs

To N	To S	To E	To W				
0	14	14	17				
0	14	14	17				
24	0	44	23				
17	9	0	218				
15	18	619	0				
ColTot				57	42	677	258
Target				57	42	677	258

In - Out 1033.494 1033 0

From N	0	14	14	17	17	17	17	17	17	
From S	24	0	44	23	92	92	45	0	23	
From E	17	9	0	218	244	244	0	0	218	
From W	15	18	619	0	652	652	0	0	258	
To N	To S	To E	To W	ColTot						258
				Target						258

Row/It Target

From N	0	14	14	17	17	17	17	17	17	
From S	24	0	44	23	92	92	45	0	23	
From E	17	9	0	218	244	244	0	0	218	
From W	15	18	619	0	652	652	0	0	258	
To N	To S	To E	To W	ColTot						258
				Target						258

Row/It Target

From N	0	14	14	17	17	17	17	17	17	
From S	24	0	44	23	92	92	45	0	23	
From E	17	9	0	218	244	244	0	0	218	
From W	15	18	619	0	652	652	0	0	258	
To N	To S	To E	To W	ColTot						258
				Target						258

Row/It Target

From N	0	14	14	17	17	17	17	17	17	
From S	24	0	44	23	92	92	45	0	23	
From E	17	9	0	218	244	244	0	0	218	
From W	15	18	619	0	652	652	0	0	258	
To N	To S	To E	To W	ColTot						258
				Target						258

Pct

To N	To S	To E	To W				
0	14	14	17				
0	14	14	17				
24	0	44	23				
17	9	0	218				
15	18	619	0				
ColTot				57	42	677	258
Target				57	42	677	258

Turn Movements and Traffic Volumes

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	20	21	38	12	12	15	13	538	16	8	189	15
2035	23	24	44	14	14	17	15	619	18	9	218	17

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South French at East/West 4th Scenario: 2035 Without Project
 Intersection: North/South French at East/West 4th Time Period: 2035 Weekday AM

Link Inputs

From N	0	59	121	18	198	227.7	21	21	21	
From S	64	0	71	18	153	175.95	82	21	21	
From E	61	72	0	218	351	403.65	0	251	0	
From W	12	31	109	0	152	174.8	0	125	0	
To N	To S	To E	To W	ColTot						292
				Target						292

Turn Move Inputs

To N	To S	To E	To W				
0	68	139	21				
0	68	139	21				
74	0	82	21				
70	83	0	251				
14	36	125	0				
ColTot				158	186	346	292
Target				158	186	346	292

In - Out 982.1 982.1 0

From N	0	68	139	21	228	228	21	21	21	
From S	74	0	82	21	176	176	82	21	21	
From E	70	83	0	251	404	404	0	251	0	
From W	14	36	125	0	175	175	0	125	0	
To N	To S	To E	To W	ColTot						292
				Target						292

Row/It Target

From N	0	68	139	21	228	228	21	21	21	
From S	74	0	82	21	176	176	82	21	21	
From E	70	83	0	251	404	404	0	251	0	
From W	14	36	125	0	175	175	0	125	0	
To N	To S	To E	To W	ColTot						292
				Target						292

Row/It Target

From N	0	68	139	21	228	228	21	21	21	
From S	74	0	82	21	176	176	82	21	21	
From E	70	83	0	251	404	404	0	251	0	
From W	14	36	125	0	175	175	0	125	0	
To N	To S	To E	To W	ColTot						292
				Target						292

Row/It Target

From N	0	68	139	21	228	228	21	21	21	
From S	74	0	82	21	176	176	82	21	21	
From E	70	83	0	251	404	404	0	251	0	
From W	14	36	125	0	175	175	0	125	0	
To N	To S	To E	To W	ColTot						292
				Target						292

Pct

To N	To S	To E	To W				
0	68	139	21				
0	68	139	21				
74	0	82	21				
70	83	0	251				
14	36	125	0				
ColTot				158	186	346	292
Target				158	186	346	292

Turn Movements and Traffic Volumes

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	18	64	71	121	59	18	12	109	31	72	218	61
2035	21	74	82	139	68	21	14	125	36	83	251	70

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South _____ at _____ East/West _____
 Intersection: Lacy _____ 1st _____

Scenario: 2035 Without Project
 Time Period: 2035 Weekday PM

Link Inputs

From N	0	0.001	9	118	127,001	146,050
From S	0.001	0	0.001	0.001	0.003	0.001
From E	3.6	0.001	0	1191	1227	1411.05
From W	167	14	1152	0	1333	1532.95
To N	To S	To E	To W			

Turn Move Inputs

118	0	9	
SR	ST	SL	WR
167			36
EL	ET	WT	191
1152			0
14			
ER	NT	NR	
	0	0	0

In - Out 3090.051 3081 9.2

From N	0	0	10	136	146	146
From S	0	0	0	0	0	0
From E	42	0	1370	1411	1411	1411
From W	193	0	1331	0	1524	1533
To N	To S	To E	To W			
ColTot	236	0	1349	1505		
Target	235	0	1341	1505		

From N	0	0	10	136	146	146
From S	0	0	0	0	0	0
From E	41	0	1370	1411	1411	1411
From W	193	0	1331	0	1524	1533
To N	To S	To E	To W			
ColTot	236	0	1349	1505		
Target	235	0	1341	1505		

From N	0	0	10	136	146	146
From S	0	0	0	0	0	0
From E	41	0	1370	1411	1411	1411
From W	193	0	1331	0	1524	1533
To N	To S	To E	To W			
ColTot	236	0	1349	1505		
Target	235	0	1341	1505		

From N	0	0	10	136	146	146
From S	0	0	0	0	0	0
From E	41	0	1370	1411	1411	1411
From W	193	0	1331	0	1524	1533
To N	To S	To E	To W			
ColTot	236	0	1349	1506		
Target	235	0	1341	1505		
Pct	1.005	1.006	1.0058	1.0019		

Turn Movements and Traffic Volumes

Year Existing	2035	NL	0	NT	0	NR	0	SL	9	ST	0	SR	118	167	1152	14	0	1191	36	WR
2035	23	24	44	14	14	0	10	0	10	0	136	195	1338	0	0	1370	41	1370	41	

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South _____ at _____ East/West _____
 Intersection: Lacy _____ 4th _____

Scenario: 2035 Without Project
 Time Period: 2035 Weekday PM

Link Inputs

From N	0	12	12	15	39	45,186.4
From S	21	0	38	20	79	91,531.4
From E	15	8	0	189	212	244.47
From W	13	16	538	0	567	652.306
To N	To S	To E	To W			

Turn Move Inputs

15	12	12	
SR	ST	SL	WR
13			15
538			189
16			8
ER	NT	NR	
	20	21	38

In - Out 1033.494 1033 0

From N	0	14	14	17	45	45
From S	24	0	44	23	92	92
From E	17	9	0	218	244	244
From W	15	18	619	0	652	652
To N	To S	To E	To W			
ColTot	57	42	677	258		
Target	57	42	677	258		

From N	0	14	14	17	45	45
From S	24	0	44	23	92	92
From E	17	9	0	218	244	244
From W	15	18	619	0	652	652
To N	To S	To E	To W			
ColTot	57	42	677	258		
Target	57	42	677	258		

From N	0	14	14	17	45	45
From S	24	0	44	23	92	92
From E	17	9	0	218	244	244
From W	15	18	619	0	652	652
To N	To S	To E	To W			
ColTot	57	42	677	258		
Target	57	42	677	258		

From N	0	14	14	17	45	45
From S	24	0	44	23	92	92
From E	17	9	0	218	244	244
From W	15	18	619	0	652	652
To N	To S	To E	To W			
ColTot	57	42	677	258		
Target	57	42	677	258		
Pct	1	1	1	0.99992		

Turn Movements and Traffic Volumes

Year Existing	2035	NL	20	NT	21	NR	38	SL	12	ST	12	SR	15	13	538	16	8	189	15	WR
2035	23	24	44	14	14	0	10	0	10	0	136	195	1338	0	0	1370	41	1370	41	

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West
 Intersection: Santiago at Washington

Scenario: 2035 Without Project
 Time Period: 2035 Weekday PM

Link Inputs

From N	0	148	22	114	148	22	114	148	22
From S	261	0	158	59	478	840,813	243	867	243
From E	33	45	0	133	211	243,311	236	173	133
From W	236	19	173	0	428	492,416	19	841	45
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S
0	148	22	114	114	148	22	114	114	148
261	0	158	59	59	261	158	59	261	158
33	45	0	133	133	33	45	0	133	33
236	19	173	0	19	236	173	0	19	236
ColTot	769	369	521	485	769	369	521	485	769
Target	867	546	407	352	867	546	407	352	867

In-Out 2143,087 2172 -28.46

Turn Move Inputs

SR	114	ST	148	SL	22	SR	114	ST	148	SL	22
EL	236	WR	33	EL	236	WR	33	EL	236	WR	33
ET	173	WT	133	ET	173	WT	133	ET	173	WT	133
ER	19	WL	45	ER	19	WL	45	ER	19	WL	45
NL	59	NT	NR	NL	59	NT	NR	NL	59	NT	NR
170	218	31	170	218	31	170	218	31	170	218	31

From N	0	437	34	165	636	567	604	567	594	567	
From S	518	0	217	75	810	841	828	841	836	841	
From E	43	77	0	111	231	243	253	243	252	243	
From W	306	32	155	0	494	492	487	492	490	492	
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W
0	437	34	165	0	389	31	147	0	396	28	142
518	0	217	75	537	0	225	78	533	0	226	82
43	77	0	111	45	81	0	117	42	85	0	116
306	32	155	0	305	32	155	0	302	35	155	0
ColTot	888	502	411	343	888	502	411	343	877	517	410
Target	867	546	407	352	867	546	407	352	867	546	407

From N	0	423	30	151	604	567	604	567	594	567	
From S	525	0	223	80	828	841	828	841	836	841	
From E	44	88	0	121	253	243	253	243	252	243	
From W	298	35	153	0	487	492	487	492	490	492	
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W
0	423	30	151	0	396	28	142	0	400	27	140
525	0	223	80	533	0	226	82	530	0	226	85
44	88	0	121	42	85	0	116	41	86	0	116
298	35	153	0	302	35	155	0	300	38	155	0
ColTot	877	517	410	340	877	517	410	340	870	524	408
Target	867	546	407	352	867	546	407	352	867	546	407

From N	0	419	28	147	594	567	604	567	594	567	
From S	527	0	225	85	836	841	828	841	836	841	
From E	42	89	0	120	252	243	253	243	252	243	
From W	298	37	154	0	490	492	487	492	490	492	
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W
0	419	28	147	0	400	27	140	0	400	27	140
527	0	225	85	530	0	226	85	530	0	226	85
42	89	0	120	41	86	0	116	41	86	0	116
298	37	154	0	300	38	155	0	300	38	155	0
ColTot	870	524	408	342	870	524	408	342	870	524	408
Target	867	546	407	352	867	546	407	352	867	546	407

Turn Movements and Traffic Volumes

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	59	261	158	22	148	114	236	173	19	45	133	33
2035	85	530	226	27	400	140	300	155	38	86	116	41

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West
 Intersection: Santiago at Civic Center

Scenario: 2035 Without Project
 Time Period: 2035 Weekday PM

Link Inputs

From N	0	214	14	96	324	661,614	613	662	613	662	
From S	218	0	31	170	419	914,767	832	915	832	915	
From E	12	29	0	31	72	84,042	77	84	77	84	
From W	260	318	52	0	630	723,695	675	724	675	724	
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W
0	214	14	96	0	450	21	111	0	482	22	110
218	0	31	170	532	0	49	210	582	0	52	211
12	29	0	31	16	35	0	21	791	39	0	21
260	318	52	0	334	376	43	0	753	297	340	38
ColTot	789	836	156	603	789	836	156	603	789	836	156
Target	882	861	112	342	882	861	112	342	882	861	112

In-Out 2384,118 2198 186.5

Turn Move Inputs

SR	96	ST	14	SR	96	ST	14	SR	96	ST	14
EL	260	WR	12	EL	260	WR	12	EL	260	WR	12
ET	52	WT	31	ET	52	WT	31	ET	52	WT	31
ER	318	WL	29	ER	318	WL	29	ER	318	WL	29
NL	170	NT	NR	NL	170	NT	NR	NL	170	NT	NR
170	218	31	170	170	218	31	170	170	218	31	170

From N	0	450	21	111	582	662	613	662	613	662	
From S	532	0	49	210	791	915	832	915	832	915	
From E	16	35	0	21	71	84	77	84	77	84	
From W	334	376	43	0	753	724	675	724	675	724	
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W
0	450	21	111	0	482	22	110	0	482	22	110
532	0	49	210	532	0	52	211	625	0	57	232
16	35	0	21	19	41	0	24	19	42	0	23
334	376	43	0	321	361	41	0	318	365	41	0
ColTot	955	915	121	394	955	915	121	394	962	927	122
Target	882	861	112	342	882	861	112	342	882	861	112

From N	0	482	22	110	613	662	613	662	613	662	
From S	569	0	52	211	832	915	832	915	832	915	
From E	17	39	0	21	77	84	77	84	77	84	
From W	297	340	38	0	675	724	675	724	675	724	
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W
0	482	22	110	0	520	23	118	0	520	23	118
569	0	52	211	625	0	57	232	625	0	57	232
17	39	0	21	19	42	0	23	19	43	0	23
297	340	38	0	318	365	41	0	318	365	41	0
ColTot	962	927	122	374	962	927	122	374	962	927	122
Target	882	861	112	342	882	861	112	342	882	861	112

From N	0	483	22	108	613	662	613	662	613	662	
From S	574	0	53	213	839	915	839	915	839	915	
From E	17	39	0	21	78	84	78	84	78	84	
From W	292	339	38	0	668	724	668	724	668	724	
To N	To S	To E	To W	To N	To S	To E	To W	To N	To S	To E	To W
0	483	22	108	0	521	23	117	0	521	23	117
574	0	53	213	625	0	58	232	625	0	58	232
17	39	0	21	19	43	0	23	19	43	0	23
292	339	38	0	316	367	41	0	316	367	41	0
ColTot	960	931	122	372	960	931	122	372	960	931	122
Target	882	861	112	342	882	861	112	342	882	861	112

Turn Movements and Traffic Volumes

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	170	218	31	14	214	96	260	52	318	29	31	12
2035	232	625	58	23	521	117	316	41	367	43	23	19

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West
 Intersection: Santiago at Brown

Scenario: 2035 Without Project
 Time Period: 2035 Weekday PM

Link Inputs

North

163	227	99	0
102	23	29	72

In - Out 357.651 357.7 1E-03

Turn Move Inputs

132	11	54
SR	ST	SL
EL	WR	0
ER	WT	0
ER	WL	0
NL	NT	NR
10	15	0

From	To N	To S	To E	To W	Row/TI	Target
From N	0	11	54	132	197	226.55
From S	15	0	0.001	10	25.001	28.75
From E	0.001	0.001	0	0.001	0.003	0.001
From W	71	9	9	0	89	102.35
To N	To S	To E	To W			
ColTot	99	23	72	163		
Target	99	23	72	163		

From	To N	To S	To E	To W	Row/TI	Target
From N	0	13	62	152	227	227
From S	17	0	0	11	29	29
From E	0	0	0	0	0	0
From W	82	10	10	0	102	102
To N	To S	To E	To W			
ColTot	99	23	72	163		
Target	99	23	72	163		

From	To N	To S	To E	To W	Row/TI	Target
From N	0	13	62	152	227	227
From S	17	0	0	11	29	29
From E	0	0	0	0	0	0
From W	82	10	10	0	102	102
To N	To S	To E	To W			
ColTot	99	23	72	163		
Target	99	23	72	163		

From	To N	To S	To E	To W	Row/TI	Target
From N	0	13	62	152	227	227
From S	17	0	0	11	29	29
From E	0	0	0	0	0	0
From W	82	10	10	0	102	102
To N	To S	To E	To W			
ColTot	99	23	72	163		
Target	99	23	72	163		

Turn Movements and Traffic Volumes

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	10	15	0	54	11	132	71	9	9	0	0	0
2035	11	17	0	62	13	152	82	10	10	0	0	0

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South at East/West
 Intersection: Santiago at Santa Ana

Scenario: 2035 Without Project
 Time Period: 2035 Weekday PM

Link Inputs

North

990	884	923	1136
1214	385	222	1332

In - Out 3454.981 3630 -174.9

Turn Move Inputs

99	179	306
SR	ST	SL
EL	WR	278
ET	WT	601
ER	WL	109
NL	NT	NR
32	90	70

From	To N	To S	To E	To W	Row/TI	Target
From N	0	179	306	99	584	883.6
From S	90	0	70	32	192	221.778
From E	278	109	0	601	988	1135.73
From W	59	48	687	0	794	1213.87
To N	To S	To E	To W			
ColTot	514	470	1594	878		
Target	923	385	1332	990		

From	To N	To S	To E	To W	Row/TI	Target
From N	0	222	387	169	778	884
From S	187	0	68	42	296	222
From E	574	103	0	779	1456	1136
From W	162	60	878	0	1100	1214
To N	To S	To E	To W			
ColTot	767	399	1459	831		
Target	923	385	1332	990		

From	To N	To S	To E	To W	Row/TI	Target
From N	0	244	401	229	873	884
From S	168	0	46	37	252	222
From E	539	77	0	724	1341	1136
From W	215	64	885	0	1164	1214
To N	To S	To E	To W			
ColTot	830	379	1369	877		
Target	923	385	1332	990		

From	To N	To S	To E	To W	Row/TI	Target
From N	0	251	395	261	906	884
From S	165	0	40	37	242	222
From E	508	67	0	692	1267	1136
From W	250	68	897	0	1215	1214
To N	To S	To E	To W			
ColTot	857	372	1318	909		
Target	923	385	1332	990		

Turn Movements and Traffic Volumes

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	32	90	70	306	179	99	59	687	48	109	601	278
2035	34	151	36	385	244	254	250	896	68	60	620	456

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South Standard at East/West 1st Scenario: 2035 Without Project
 Intersection: Grand Time Period: 2035 Weekday AM

Link Inputs

North		Turn Move Inputs	
306	430	25	224
1513	1392	SR	ST
1414	1412	EL	WR
		ET	WT
451	695	ER	WL
		NL	NT
		NR	NR
In - Out	3806.083	3806	0

From N	0	224	17	25	266	305.877	Row/Tt	Target	To N	To S	To E	To W
From S	285	0	135	184	604	695.175			0	258	20	29
From E	11	93	0	1106	1210	1391.51			328	0	155	212
From W	78	76	1076	0	1230	1413.52			13	107	0	1272
To N	To S	To E	To W						90	87	1237	0
ColTot	430	452	1411	1512					430	451	1412	1513
Target	430	451	1412	1513								
From N	0	257	20	29	305	306	Row/Tt	Target	To N	To S	To E	To W
From S	328	0	155	212	695	695			0	257	20	29
From E	13	107	0	1272	1392	1392			328	0	156	212
From W	90	87	1237	0	1414	1414			13	107	0	1272
To N	To S	To E	To W						89	87	1237	0
ColTot	430	451	1412	1513					430	451	1412	1513
Target	430	451	1412	1513								
From N	0	257	20	29	306	306	Row/Tt	Target	To N	To S	To E	To W
From S	328	0	156	212	695	695			0	257	20	29
From E	13	107	0	1272	1392	1392			328	0	156	212
From W	90	87	1237	0	1414	1414			13	106	0	1272
To N	To S	To E	To W						89	87	1237	0
ColTot	430	451	1412	1513					430	451	1412	1513
Target	430	451	1412	1513								
From N	0	257	20	29	306	306	Row/Tt	Target	To N	To S	To E	To W
From S	328	0	156	212	695	695			0	257	20	29
From E	13	106	0	1272	1391	1392			328	0	156	212
From W	89	87	1237	0	1414	1414			13	106	0	1272
To N	To S	To E	To W						89	87	1237	0
ColTot	430	451	1412	1513					430	451	1412	1513
Target	430	451	1412	1513								
Pet	1	1	0.9999	1.00001								

Turn Movements and Traffic Volumes

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	184	285	135	17	224	25	78	1076	76	93	1106	11
2035	212	328	156	20	257	29	89	1237	87	106	1272	13

Turn Movement Forecast: Row-Column-Sum Method

Street Alignment: North/South Grand at East/West Santa Ana Scenario: 2035 Without Project
 Intersection: Grand Time Period: 2035 Weekday PM

Link Inputs

North		Turn Move Inputs	
848	1982	380	1063
898	2168	SR	ST
		EL	SL
		ET	WR
1667	1650	ER	WL
		NL	NT
		NR	NR
In - Out	4894.65	5138	-242.9

From N	0	1063	123	380	1566	1982.3	Row/Tt	Target	To N	To S	To E	To W
From S	1148	0	79	209	1436	1649.9			0	1346	156	481
From E	59	109	0	149	317	364.97			1319	0	91	240
From W	194	278	193	0	665	897.52			68	125	0	172
To N	To S	To E	To W						262	375	260	0
ColTot	1649	1846	507	893					2168	1667	454	848
Target	1649	1846	507	893								
From N	0	1215	139	457	1812	1982	Row/Tt	Target	To N	To S	To E	To W
From S	1734	0	81	228	2044	1650			0	1300	161	521
From E	89	113	0	163	366	365			1433	0	58	159
From W	344	339	233	0	916	898			103	103	0	159
To N	To S	To E	To W						380	296	221	0
ColTot	1826	1775	447	847					2168	1667	454	848
Target	1826	1775	447	847								
From N	0	1249	155	501	1905	1982	Row/Tt	Target	To N	To S	To E	To W
From S	1662	0	67	184	1913	1650			0	1300	161	521
From E	106	106	0	163	375	365			1433	0	58	159
From W	400	312	232	0	944	898			103	103	0	159
To N	To S	To E	To W						380	296	221	0
ColTot	1917	1700	440	839					2168	1667	454	848
Target	1917	1700	440	839								
From N	0	1275	167	527	1969	1982	Row/Tt	Target	To N	To S	To E	To W
From S	1621	0	59	161	1842	1650			0	1284	168	531
From E	117	101	0	160	378	365			1453	0	53	144
From W	430	291	228	0	949	898			112	98	0	155
To N	To S	To E	To W						407	275	216	0
ColTot	1972	1657	437	829					2168	1667	454	848
Target	1972	1657	437	829								
Pet	0.90952	0.9936	0.9617	0.97787								

Turn Movements and Traffic Volumes

Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
Existing	209	1148	79	123	1063	380	194	193	278	109	149	59
2035	144	1453	53	168	1284	531	407	216	275	98	155	112

Turn Movement Forecast: Row-Column-Sum Method												2030 w/o Project Baseline		
Street Alignment: North/South Penn Way at I-5 SB Ramps												2035 Without Project		
Intersection: East/West												2035 Weekday PM		
Scenario: Time Period:														
Link Inputs												Turn Move Inputs		
North												North		
0 64 542 0 64 542												130 0 266		
716 537 411 0 0												SR ST SL WR 213		
0 0 0 0 0												EL ET WT 748		
472 640 171 0 0												ER ER NT NR 0		
In - Out 1766.843 1786 -18.93												NL NR 0		
From N 0 64 542 0.001 606 716.12												To N To S To E To W		
From S 171 0 133 0.001 304 640.17												Row/Tl Target		
From E 232 125 0 0.001 357 410.55												To N To S To E To W		
From W 0.001 0.001 0.001 0 0.003 0.001												Row/Tl Target		
To N To S To E To W												To N To S To E To W		
Col/Tot 627 219 921 0												Col/Tot 676 0 1060 1010		
Target 537 472 776 0												Target 656 0 1123 1010		
From N 0 163 540 0 703 716												To N To S To E To W		
From S 309 0 236 0 545 640												Row/Tl Target		
From E 229 309 0 0 538 411												To N To S To E To W		
From W 0 0 0 0 0 0												Row/Tl Target		
To N To S To E To W												To N To S To E To W		
Col/Tot 537 402 828 0												Col/Tot 646 1 1090 1010		
Target 537 472 776 0												Target 656 0 1123 1010		
From N 0 195 516 0 711 716												To N To S To E To W		
From S 363 0 260 0 623 640												Row/Tl Target		
From E 175 277 0 0 452 411												To N To S To E To W		
From W 0 0 0 0 0 0												Row/Tl Target		
To N To S To E To W												To N To S To E To W		
Col/Tot 531 448 787 0												Col/Tot 645 1 1097 1004		
Target 537 472 776 0												Target 656 0 1123 1010		
Pet 0.98881 0.9779 0.9968 0.99213												Pet 0.98423 0.9825 0.9803 0.99097		
Turn Movements and Traffic Volumes												Turn Movements and Traffic Volumes		
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		
Existing	0	171	133	542	64	0	0	0	0	125	0	232		
2035	0	377	263	510	206	0	0	0	0	256	0	155		

Turn Movement Forecast: Row-Column-Sum Method												2030 w/o Project Baseline		
Street Alignment: North/South I-5 SB Ramps at Santa Ana Bl												2035 Without Project		
Intersection: East/West												2035 Weekday PM		
Scenario: Time Period:														
Link Inputs												Turn Move Inputs		
North												North		
455 656 0 0 0												130 0 266		
1010 1185 0 0 0												SR ST SL WR 213		
0 0 0 0 0												EL ET WT 748		
In - Out 2745.411 2788 -42.63												ER ER NT NR 0		
NL NR 0												NL NR 0		
From N 0 0.001 266 130 396 455.4												To N To S To E To W		
From S 0.001 0 0.001 0.001 0.003 1												Row/Tl Target		
From E 213 0.001 0 748 961 1105.2												To N To S To E To W		
From W 357 0.001 625 0 982 1184.9												Row/Tl Target		
To N To S To E To W												To N To S To E To W		
Col/Tot 676 0 1060 1010												Col/Tot 646 1 1090 1010		
Target 656 0 1123 1010												Target 656 0 1123 1010		
From N 0 0 324 149 473 455												To N To S To E To W		
From S 0 0 0 0 1 1												Row/Tl Target		
From E 238 0 0 860 1097 1105												To N To S To E To W		
From W 418 0 799 0 1216 1185												Row/Tl Target		
To N To S To E To W												To N To S To E To W		
Col/Tot 646 1 1090 1010												Col/Tot 645 1 1097 1004		
Target 656 0 1123 1010												Target 656 0 1123 1010		
From N 0 0 321 144 465 455												To N To S To E To W		
From S 0 0 0 0 1 1												Row/Tl Target		
From E 243 0 0 866 1108 1105												To N To S To E To W		
From W 413 0 801 0 1214 1185												Row/Tl Target		
To N To S To E To W												To N To S To E To W		
Col/Tot 645 1 1097 1004												Col/Tot 645 0 1101 1001		
Target 656 0 1123 1010												Target 656 0 1123 1010		
Pet 0.98423 0.9825 0.9803 0.99097												Pet 0.98423 0.9825 0.9803 0.99097		
Turn Movements and Traffic Volumes												Turn Movements and Traffic Volumes		
Year	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR		
Existing	0	0	0	266	0	130	357	625	0	0	748	213		
2035	0	0	0	316	0	139	401	784	0	0	861	244		

APPENDIX G
2035 Without Project Conditions Analysis Worksheets

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project AM

Scenario Report

Scenario: 2035NPAM
 Command: 2035NP AM
 Volume: 2035NPAM
 Geometry: Future
 Impact Fee: Default Impact Fee
 Trip Generation: Default Trip Generation
 Trip Distribution: Default Trip Distribution
 Paths: Default Path
 Routes: Default Route
 Configuration: Default Configuration

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project AM

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Flower St (NS)/ Civic Center D	C	xxxxx 0.789	C	xxxxx 0.789	+ 0.000 V/C
# 2 Flower St (N/S) / Santa Ana Bl	B	xxxxx 0.685	B	xxxxx 0.685	+ 0.000 V/C
# 3 Parton St (E/W) / Santa Ana Bl	A	xxxxx 0.316	A	xxxxx 0.316	+ 0.000 V/C
# 4 Ross St (N/S) / Civic Center D	B	xxxxx 0.634	B	xxxxx 0.634	+ 0.000 V/C
# 5 Ross St (N/S) / Santa Ana Bl (	A	xxxxx 0.581	A	xxxxx 0.581	+ 0.000 V/C
# 6 Ross St (N/S) / 4th St (E/W)	B	11.7 0.000	B	11.7 0.000	+ 0.000 D/V
# 7 Broadway (N/S) / Civic Center	C	xxxxx 0.721	C	xxxxx 0.721	+ 0.000 V/C
# 8 Broadway (N/S) / Santa Ana Bl	A	xxxxx 0.595	A	xxxxx 0.595	+ 0.000 V/C
# 9 Broadway (N/S) / 5th St (E/W)	A	xxxxx 0.399	A	xxxxx 0.399	+ 0.000 V/C
# 10 Broadway (N/S) / 4th St (E/W)	A	xxxxx 0.449	A	xxxxx 0.449	+ 0.000 V/C
# 11 Broadway (N/S)/ 3rd st (E/W)	A	xxxxx 0.406	A	xxxxx 0.406	+ 0.000 V/C
# 12 Broadway (N/S) / 1st St (E/W)	C	xxxxx 0.779	C	xxxxx 0.779	+ 0.000 V/C
# 13 Sycamore St (N/S) / Civic Cent	A	xxxxx 0.484	A	xxxxx 0.484	+ 0.000 V/C
# 14 Sycamore St (N/S) / Santa Ana	D	28.7 0.000	D	28.7 0.000	+ 0.000 D/V
# 15 Sycamore St (N/S) / 5th St (E/	C	19.2 0.000	C	19.2 0.000	+ 0.000 D/V
# 16 Sycamore St (N/S) / 4th St (E/	A	8.4 0.259	A	8.4 0.259	+ 0.000 V/C
# 17 Main St (N/S) / Civic Center D	D	xxxxx 0.875	D	xxxxx 0.875	+ 0.000 V/C
# 18 Main St (N/S) / Santa Ana Dr (	C	xxxxx 0.799	C	xxxxx 0.799	+ 0.000 V/C
# 19 Main St (N/S) / 5th St (E/W)	B	xxxxx 0.611	B	xxxxx 0.611	+ 0.000 V/C
# 20 Main St (N/S) / 4th St (E/W)	B	xxxxx 0.613	B	xxxxx 0.613	+ 0.000 V/C
# 21 Main St (N/S) / 3rd St (E/W)	A	xxxxx 0.533	A	xxxxx 0.533	+ 0.000 V/C
# 22 Main St (N/S) / 1st St (E/W)	E	xxxxx 0.918	E	xxxxx 0.918	+ 0.000 V/C
# 23 Bush St (N/S) / Santa Ana Bl (A	xxxxx 0.335	A	xxxxx 0.335	+ 0.000 V/C
# 24 Bush St (N/S) / 5th St (E/W)	A	xxxxx 0.297	A	xxxxx 0.297	+ 0.000 V/C

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Intersection	Base		Future		Change in
	Del/ LOS Veh	V/ C	Del/ LOS Veh	V/ C	
# 25 Bush St (N/S) / 4th St (E/W)	A xxxxx	0.347	A xxxxx	0.347	+ 0.000 V/C
# 26 Spurgeon St (N/S) / 1st St (E/	B 11.3	0.000	B 11.3	0.000	+ 0.000 D/V
# 27 French St (N/S) / Santa Ana Bl	C 24.5	0.000	C 24.5	0.000	+ 0.000 D/V
# 28 French St (N/S) / 4th St (E/W)	A xxxxx	0.342	A xxxxx	0.342	+ 0.000 V/C
# 29 Lacy St (N/S) / Civic Center D	D 28.6	0.000	D 28.6	0.000	+ 0.000 D/V
# 30 Lacy st (N/S) / Santa Ana Bl (	F 122.1	0.000	F 122.1	0.000	+ 0.000 D/V
# 31 Lacy St (N/S) / Brown St (E/W)	A 7.3	0.109	A 7.3	0.109	+ 0.000 V/C
# 32 Lacy St (N/S) / 4th St (E/W)	A xxxxx	0.508	A xxxxx	0.508	+ 0.000 V/C
# 33 Lacy St (N/S) / 1st St (E/W)	E 45.3	0.000	E 45.3	0.000	+ 0.000 D/V
# 34 Santiago St (N/S) / Washington	F 126.8	1.561	F 126.8	1.561	+ 0.000 V/C
# 35 Santiago St (N/S) / Civic Cent	F 280.0	2.320	F 280.0	2.320	+ 0.000 V/C
# 36 Santiago St (N/S) / Santa Ana	E xxxxx	0.904	E xxxxx	0.904	+ 0.000 V/C
# 40 Standard Av (N/S) / 1st St (E/	E xxxxx	0.940	E xxxxx	0.940	+ 0.000 V/C
# 42 Grand Av (N/S) / Santa Ana Bl	F xxxxx	1.178	F xxxxx	1.178	+ 0.000 V/C
# 43 Grand Av (N/S) / 4th St (E/W)	C xxxxx	0.747	C xxxxx	0.747	+ 0.000 V/C
# 44 Grand Av (N/S) / 1st St (E/W)	D xxxxx	0.894	D xxxxx	0.894	+ 0.000 V/C
# 45 Penn Way (NS) at I-5 SB Ramps	C 25.1	0.569	C 25.1	0.569	+ 0.000 D/V
# 46 I-5 SB Ramps (NS) / Santa Ana	C 29.2	0.643	C 29.2	0.643	+ 0.000 D/V
# 47 I-5 NB Ramps (NS) / 17th St. (	D 39.9	0.903	D 39.9	0.903	+ 0.000 D/V
# 48 I-5 NB Ramps (NS) / Grand Ave	C 30.2	0.934	C 30.2	0.934	+ 0.000 D/V
# 49 Mortimer (N/S) / Santa Ana Blv	C 23.1	0.000	C 23.1	0.000	+ 0.000 D/V
# 50 Mortimer (N/S) / 5th St (E/W)	A 9.5	0.343	A 9.5	0.343	+ 0.000 V/C

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Flower St (NS)/ Civic Center Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.789
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 50 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement:												
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1	0	1	1	0	1	1	0	1

Volume Module:

Base Vol:	181	801	192	141	738	210	155	649	184	163	543	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:	181	801	192	141	738	210	155	649	184	163	543	50
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	181	801	192	141	738	210	155	649	184	163	543	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:	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:	181	801	192	141	738	210	155	649	184	163	543	50
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	181	801	192	141	738	210	155	649	184	163	543	50
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:	181	801	192	141	738	210	155	649	184	163	543	50

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	1.61	0.39	1.00	1.56	0.44	1.00	1.56	0.44	1.00	1.83	0.17
Final Sat.:	1598	2743	657	1598	2647	753	1598	2649	751	1598	3113	287

Capacity Analysis Module:

Vol/Sat:	0.11	0.29	0.29	0.09	0.28	0.28	0.10	0.25	0.24	0.10	0.17	0.17
Crit Moves:	****			****			****			****		

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Level of Service Computation Report

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

Intersection #2 Flower St (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.685
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: B

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

Volume Module:
Base Vol: 84 1114 82 190 1005 100 121 624 223 78 341 135
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: 84 1114 82 190 1005 100 121 624 223 78 341 135
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 84 1114 82 190 1005 100 121 624 223 78 341 135
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: 84 1114 82 190 1005 100 121 624 223 78 341 135
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 84 1114 82 190 1005 100 121 624 223 78 341 135
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 1114 82 190 1005 100 121 624 223 78 341 135

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 0.94
Lanes: 1.00 2.00 1.00 1.00 2.00 1.00 1.00 3.00 1.00 1.00 2.00 1.00
Final Sat.: 1598 3400 1598 1598 3400 1598 1598 5100 1598 1598 3400 1598

Capacity Analysis Module:
Vol/Sat: 0.05 0.33 0.05 0.12 0.30 0.06 0.08 0.12 0.14 0.05 0.10 0.08
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #3 Parton St (E/W) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.316
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 18 Level Of Service: A

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

Volume Module:
Base Vol: 17 6 37 24 8 26 36 696 133 87 577 98
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: 17 6 37 24 8 26 36 696 133 87 577 98
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 17 6 37 24 8 26 36 696 133 87 577 98
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: 17 6 37 24 8 26 36 696 133 87 577 98
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 17 6 37 24 8 26 36 696 133 87 577 98
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: 17 6 37 24 8 26 36 696 133 87 577 98

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 0.94 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 0.28 0.10 0.62 0.75 0.25 1.00 1.00 2.52 0.48 1.00 2.56 0.44
Final Sat.: 482 170 1048 1275 425 1598 1598 4282 818 1598 4360 740

Capacity Analysis Module:
Vol/Sat: 0.01 0.04 0.04 0.01 0.02 0.02 0.02 0.16 0.16 0.05 0.13 0.13
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #4 Ross St (N/S) / Civic Center Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.634
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 31 Level Of Service: B

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
Lanes: 1 0 1 0 1 1 0 0 1 1 0 1 0 1 1 0

Volume Module:
Base Vol: 133 226 77 75 252 85 61 712 118 77 841 58
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: 133 226 77 75 252 85 61 712 118 77 841 58
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 133 226 77 75 252 85 61 712 118 77 841 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: 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: 133 226 77 75 252 85 61 712 118 77 841 58
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 133 226 77 75 252 85 61 712 118 77 841 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: 133 226 77 75 252 85 61 712 118 77 841 58

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 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 0.75 0.25 1.00 1.72 0.28 1.00 1.87 0.13
Final Sat.: 1598 1700 1598 1598 1271 429 1598 2917 483 1598 3181 219

Capacity Analysis Module:
Vol/Sat: 0.08 0.13 0.05 0.05 0.20 0.20 0.04 0.24 0.24 0.05 0.26 0.26
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #5 Ross St (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.581
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level Of Service: A

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 Ignore
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 0 1 1 0 1 0 1 2 0 1 1 0 3 0 1

Volume Module:
Base Vol: 83 243 112 69 198 163 89 674 36 234 537 118
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: 83 243 112 69 198 163 89 674 36 234 537 118
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 83 243 112 69 198 163 89 674 36 234 537 118
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: 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 Volume: 83 243 112 69 198 163 89 674 0 234 537 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 83 243 112 69 198 163 89 674 0 234 537 0
PCE 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
MLF 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
FinalVolume: 83 243 112 69 198 163 89 674 0 234 537 0

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 2.00 1.00 1.00 3.00 1.00
Final Sat.: 1598 1700 1598 1598 1700 1598 1598 3400 1598 1598 5100 1598

Capacity Analysis Module:
Vol/Sat: 0.05 0.14 0.07 0.04 0.12 0.10 0.06 0.20 0.00 0.15 0.11 0.00
Crit Moves: ****

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Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Ross St (N/S) / 4th St (E/W)

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: B[11.7]

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

Volume Module:	North Bound		South Bound		East Bound		West Bound					
Base Vol:	0	305	13	50	228	0	0	0	2	24	0	61
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	305	13	50	228	0	0	0	2	24	0	61
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	305	13	50	228	0	0	0	2	24	0	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:	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:	0	305	13	50	228	0	0	0	2	24	0	61
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	305	13	50	228	0	0	0	2	24	0	61

Critical Gap Module:	North Bound		South Bound		East Bound		West Bound					
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxxx	xxxxxx	xxxx	6.2	7.1	xxxx	6.2
FollowUpTim:	xxxxxx	xxxx	xxxxxx	2.2	xxxx	xxxxxx	xxxxxx	xxxx	3.3	3.5	xxxx	3.3

Capacity Module:	North Bound		South Bound		East Bound		West Bound					
Cnflct Vol:	xxxx	xxxx	xxxxxx	318	xxxx	xxxxxx	xxxx	xxxx	228	641	xxxx	312
Potent Cap.:	xxxx	xxxx	xxxxxx	1253	xxxx	xxxxxx	xxxx	xxxx	816	391	xxxx	733
Move Cap.:	xxxx	xxxx	xxxxxx	1253	xxxx	xxxxxx	xxxx	xxxx	816	378	xxxx	733
Volume/Cap:	xxxx	xxxx	xxxx	0.04	xxxx	xxxx	xxxx	xxxx	0.00	0.06	xxxx	0.08

Level of Service Module:	North Bound		South Bound		East Bound		West Bound					
2Way95thQ:	xxxx	xxxx	xxxxxx	0.1	xxxx	xxxxxx	xxxx	xxxx	0.0	0.2	xxxx	0.3
Control Del:	xxxxx	xxxx	xxxxxx	8.0	xxxx	xxxxxx	xxxxxx	xxxx	9.4	15.2	xxxx	10.4
LOS by Move:	*	*	*	A	*	*	*	*	A	C	*	B
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx
SharedQueue:	xxxxx	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:	xxxxxx	xxxxxx	xxxxxx	9.4	xxxxxx	xxxxxx	xxxxxx	xxxxxx	11.7	xxxxxx	xxxxxx	xxxxxx
ApproachLOS:	*	*	*	A	*	*	*	*	A	B	*	B

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

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Level of Service Computation Report

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

Intersection #7 Broadway (N/S) / Civic Center Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.721
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 40 Level Of Service: C

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:	Ignore	Ignore	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	1 0 2 0 1	1 0 2 0 1	1 0 1 1 0	1 0 1 1 0

Volume Module:	North Bound		South Bound		East Bound		West Bound					
Base Vol:	120	619	72	153	805	303	172	554	84	56	733	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:	120	619	72	153	805	303	172	554	84	56	733	123
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	120	619	72	153	805	303	172	554	84	56	733	123
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:	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 Volume:	120	619	0	153	805	0	172	554	84	56	733	123
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	120	619	0	153	805	0	172	554	84	56	733	123
PCE 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
MLF 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
FinalVolume:	120	619	0	153	805	0	172	554	84	56	733	123

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	0.94	0.94	1.00	0.94	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.74	0.26	1.00	1.71	0.29
Final Sat.:	1598	3400	1598	1598	3400	1598	1598	2952	448	1598	2911	489

Capacity Analysis Module:	North Bound		South Bound		East Bound		West Bound					
Vol/Sat:	0.08	0.18	0.00	0.10	0.24	0.00	0.11	0.19	0.19	0.04	0.25	0.25
Crit Moves:	****	****	****	****	****	****	****	****	****	****	****	****

Santa Ana Renaissance Specific Plan Traffic Study
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Level of Service Computation Report

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

Intersection #8 Broadway (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.595
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 29 Level Of Service: A

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

Volume Module:
Base Vol: 47 760 0 0 833 239 0 0 0 47 839 134
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: 47 760 0 0 833 239 0 0 0 47 839 134
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 47 760 0 0 833 239 0 0 0 47 839 134
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: 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: 47 760 0 0 833 239 0 0 0 47 839 134
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 47 760 0 0 833 239 0 0 0 47 839 134
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: 47 760 0 0 833 239 0 0 0 47 839 134

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00
Lanes: 1.00 2.00 0.00 0.00 1.55 0.45 0.00 0.00 0.00 0.14 2.47 0.39
Final Sat.: 1598 3400 0 0 2642 758 0 0 0 235 4195 670

Capacity Analysis Module:
Vol/Sat: 0.03 0.22 0.00 0.00 0.32 0.32 0.00 0.00 0.00 0.03 0.20 0.20
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
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Level of Service Computation Report

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

Intersection #9 Broadway (N/S) / 5th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.399
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Permitted Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 1 0 2 0 0 0 1 1 1 0 0 0 0 0 0

Volume Module:
Base Vol: 0 574 44 87 616 0 135 431 8 0 0 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: 0 574 44 87 616 0 135 431 8 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 574 44 87 616 0 135 431 8 0 0 0
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: 0 574 44 87 616 0 135 431 8 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 574 44 87 616 0 135 431 8 0 0 0
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: 0 574 44 87 616 0 135 431 8 0 0 0

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00 0.94 1.00 0.94
Lanes: 0.00 1.86 0.14 1.00 2.00 0.00 0.71 2.25 0.04 0.00 0.00 0.00
Final Sat.: 0 3158 242 1598 3400 0 1199 3829 71 0 0 0

Capacity Analysis Module:
Vol/Sat: 0.00 0.18 0.18 0.05 0.18 0.00 0.08 0.11 0.11 0.00 0.00 0.00
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project AM

Level of Service Computation Report

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

Intersection #10 Broadway (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.449
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

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
Lanes: 1 0 1 1 0 1 0 1 1 0 0 0 1 0 0 0

Volume Module:
Base Vol: 62 875 90 19 546 89 19 65 37 32 111 14
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: 62 875 90 19 546 89 19 65 37 32 111 14
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 62 875 90 19 546 89 19 65 37 32 111 14
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: 62 875 90 19 546 89 19 65 37 32 111 14
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 62 875 90 19 546 89 19 65 37 32 111 14
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: 62 875 90 19 546 89 19 65 37 32 111 14

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 1.81 0.19 1.00 1.72 0.28 0.16 0.54 0.30 0.20 0.71 0.09
Final Sat.: 1598 3083 317 1598 2923 477 267 913 520 346 1202 152

Capacity Analysis Module:
Vol/Sat: 0.04 0.28 0.28 0.01 0.19 0.19 0.01 0.07 0.07 0.02 0.09 0.09
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
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Level of Service Computation Report

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

Intersection #11 Broadway (N/S)/ 3rd st (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.406
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A

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
Lanes: 1 0 0 1 0 1 0 1 0 1 0 1 0 0 1 0

Volume Module:
Base Vol: 28 436 9 29 367 31 41 59 20 11 42 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: 28 436 9 29 367 31 41 59 20 11 42 43
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 28 436 9 29 367 31 41 59 20 11 42 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: 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: 28 436 9 29 367 31 41 59 20 11 42 43
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 28 436 9 29 367 31 41 59 20 11 42 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: 28 436 9 29 367 31 41 59 20 11 42 43

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 0.94 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 1.00 0.98 0.02 1.00 1.00 1.00 1.00 0.75 0.25 1.00 0.49 0.51
Final Sat.: 1598 1666 34 1598 1700 1598 1598 1270 430 1598 840 860

Capacity Analysis Module:
Vol/Sat: 0.02 0.26 0.26 0.02 0.22 0.02 0.03 0.05 0.05 0.01 0.05 0.05
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
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Level of Service Computation Report

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

Intersection #12 Broadway (N/S) / 1st St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.779
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 48 Level Of Service: C

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: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 0

Volume Module:
Base Vol: 69 410 119 80 383 71 209 1583 81 178 1168 117
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: 69 410 119 80 383 71 209 1583 81 178 1168 117
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 69 410 119 80 383 71 209 1583 81 178 1168 117
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: 69 410 119 80 383 71 209 1583 81 178 1168 117
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 69 410 119 80 383 71 209 1583 81 178 1168 117
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: 69 410 119 80 383 71 209 1583 81 178 1168 117

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 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 2.85 0.15 1.00 2.73 0.27
Final Sat.: 1598 1700 1598 1598 1700 1598 1598 4852 248 1598 4636 464

Capacity Analysis Module:
Vol/Sat: 0.04 0.24 0.07 0.05 0.23 0.04 0.13 0.33 0.33 0.11 0.25 0.25
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #13 Sycamore St (N/S) / Civic Center Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.484
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 23 Level Of Service: A

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
Lanes: 0 0 1 0 0 0 0 1 1 0 0 1 0 1 1 0

Volume Module:
Base Vol: 26 102 32 33 24 26 80 534 71 33 817 102
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: 26 102 32 33 24 26 80 534 71 33 817 102
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 26 102 32 33 24 26 80 534 71 33 817 102
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: 26 102 32 33 24 26 80 534 71 33 817 102
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 26 102 32 33 24 26 80 534 71 33 817 102
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: 26 102 32 33 24 26 80 534 71 33 817 102

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 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 0.16 0.64 0.20 0.40 0.29 0.31 1.00 1.77 0.23 1.00 1.78 0.22
Final Sat.: 276 1084 340 676 492 533 1598 3001 399 1598 3023 377

Capacity Analysis Module:
Vol/Sat: 0.02 0.09 0.09 0.02 0.05 0.05 0.05 0.18 0.18 0.02 0.27 0.27
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
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Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 Sycamore St (N/S) / Santa Ana Bl (E/W)

Average Delay (sec/veh): 3.8 Worst Case Level Of Service: D[28.7]

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	1	0	0	0	1	0	0	0	0	1	1	1	0

Volume Module:

Base Vol:	10	40	0	0	58	26	0	0	0	80	947	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:	10	40	0	0	58	26	0	0	0	80	947	33
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	40	0	0	58	26	0	0	0	80	947	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:	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:	10	40	0	0	58	26	0	0	0	80	947	33
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	10	40	0	0	58	26	0	0	0	80	947	33

Critical Gap Module:

Critical Gp:	7.1	6.5	xxxxx	xxxxx	6.5	6.2	xxxxx	xxxxx	xxxxx	4.1	xxxxx	xxxxx
FollowUpTim:	3.5	4.0	xxxxx	xxxxx	4.0	3.3	xxxxx	xxxxx	xxxxx	2.2	xxxxx	xxxxx

Capacity Module:

Cnflct Vol:	505	1140	xxxxx	xxxxx	1124	332	xxxxx	xxxxx	xxxxx	0	xxxxx	xxxxx
Potent Cap.:	481	203	xxxxx	xxxxx	207	714	xxxxx	xxxxx	xxxxx	900	xxxxx	xxxxx
Move Cap.:	328	183	xxxxx	xxxxx	188	714	xxxxx	xxxxx	xxxxx	900	xxxxx	xxxxx
Volume/Cap:	0.03	0.22	xxxxx	xxxxx	0.31	0.04	xxxxx	xxxxx	xxxxx	0.09	xxxxx	xxxxx

Level of Service Module:

2Way95thQ:	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx			
Control Del:	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	9.4	xxxxx	xxxxx			
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	201	xxxxx	xxxxx	xxxxx	xxxxx	243	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx	xxxxx			
SharedQueue:	0.9	xxxxx	xxxxx	xxxxx	xxxxx	1.5	xxxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx			
Shrd ConDel:	28.7	xxxxx	xxxxx	xxxxx	xxxxx	27.4	xxxxx	xxxxx	xxxxx	9.4	xxxxx	xxxxx			
Shared LOS:	D	*	*	*	*	D	*	*	*	A	*	*			
ApproachDel:	28.7					27.4	xxxxxxx			xxxxxxx					
ApproachLOS:	D					D	*			*					

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

Santa Ana Renaissance Specific Plan Traffic Study
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Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #15 Sycamore St (N/S) / 5th St (E/W)

Average Delay (sec/veh): 3.6 Worst Case Level Of Service: C[19.2]

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	1	1	0	0	0	0

Volume Module:

Base Vol:	0	34	27	113	41	0	19	895	19	0	0	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	34	27	113	41	0	19	895	19	0	0	0
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	34	27	113	41	0	19	895	19	0	0	0
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:	0	34	27	113	41	0	19	895	19	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	34	27	113	41	0	19	895	19	0	0	0

Critical Gap Module:

Critical Gp:	xxxxxx	6.5	6.2	7.1	6.5	xxxxxx	4.1	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx
FollowUpTim:	xxxxxx	4.0	3.3	3.5	4.0	xxxxxx	2.2	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx

Capacity Module:

Cnflct Vol:	xxxxx	943	308	353	952	xxxxxx	0	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx
Potent Cap.:	xxxxx	265	737	605	261	xxxxxx	900	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx
Move Cap.:	xxxxx	259	737	516	256	xxxxxx	900	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx
Volume/Cap:	xxxxx	0.13	0.04	0.22	0.16	xxxxxx	0.02	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx

Level of Service Module:

2Way95thQ:	xxxxx	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx	0.1	xxxxx	xxxxxx	xxxxx	xxxxx	xxxxxx			
Control Del:	xxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx	9.1	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx			
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxxx	xxxxx	363	406	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx			
SharedQueue:	xxxxxx	xxxxx	0.6	1.7	xxxxx	xxxxxx	0.1	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx			
Shrd ConDel:	xxxxxx	xxxxx	16.9	19.2	xxxxx	xxxxxx	9.1	xxxxx	xxxxxx	xxxxxx	xxxxx	xxxxxx			
Shared LOS:	*	*	C	C	*	*	A	*	*	*	*	*			
ApproachDel:	16.9			19.2			xxxxxxx			xxxxxxx					
ApproachLOS:	C			C			*			*					

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

Santa Ana Renaissance Specific Plan Traffic Study
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Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #16 Sycamore St (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.259
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 8.4
Optimal Cycle: 0 Level Of Service: A

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 Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 0 0 0 0 1 0 0 0 0

Volume Module:
Base Vol: 9 24 33 18 14 14 30 98 38 84 93 34
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: 9 24 33 18 14 14 30 98 38 84 93 34
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 9 24 33 18 14 14 30 98 38 84 93 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: 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: 9 24 33 18 14 14 30 98 38 84 93 34
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 9 24 33 18 14 14 30 98 38 84 93 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: 9 24 33 18 14 14 30 98 38 84 93 34

Saturation Flow Module:
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: 0.14 0.36 0.50 0.40 0.30 0.30 0.18 0.59 0.23 0.40 0.44 0.16
Final Sat.: 102 271 373 280 218 218 148 484 188 325 359 131

Capacity Analysis Module:
Vol/Sat: 0.09 0.09 0.09 0.06 0.06 0.06 0.20 0.20 0.20 0.26 0.26 0.26
Crit Moves: **** **** **** ****
Delay/Veh: 7.9 7.9 7.9 8.0 8.0 8.0 8.3 8.3 8.3 8.8 8.8 8.8
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 7.9 7.9 7.9 8.0 8.0 8.0 8.3 8.3 8.3 8.8 8.8 8.8
LOS by Move: A A A A A A A A A A A A
ApproachDel: 7.9 8.0 8.3 8.8
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 7.9 8.0 8.3 8.8
LOS by Appr: A A A A
AllWayAvgQ: 0.1 0.1 0.1 0.1 0.1 0.1 0.2 0.2 0.2 0.3 0.3 0.3

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

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Level of Service Computation Report

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

Intersection #17 Main St (N/S) / Civic Center Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.875
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 74 Level Of Service: D

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
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0

Volume Module:
Base Vol: 209 1096 94 118 1188 221 109 534 163 75 665 56
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: 209 1096 94 118 1188 221 109 534 163 75 665 56
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 209 1096 94 118 1188 221 109 534 163 75 665 56
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: 209 1096 94 118 1188 221 109 534 163 75 665 56
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 209 1096 94 118 1188 221 109 534 163 75 665 56
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: 209 1096 94 118 1188 221 109 534 163 75 665 56

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 1.84 0.16 1.00 1.69 0.31 1.00 1.53 0.47 1.00 1.84 0.16
Final Sat.: 1598 3131 269 1598 2867 533 1598 2605 795 1598 3136 264

Capacity Analysis Module:
Vol/Sat: 0.13 0.35 0.35 0.07 0.41 0.41 0.07 0.20 0.21 0.05 0.21 0.21
Crit Moves: **** **** **** ****

Santa Ana Renaissance Specific Plan Traffic Study
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Level of Service Computation Report

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

Intersection #18 Main St (N/S) / Santa Ana Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.799
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 52 Level Of Service: C

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

Volume Module:
Base Vol: 80 1169 0 0 1335 102 0 0 0 125 1174 108
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 1169 0 0 1335 102 0 0 0 125 1174 108
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 80 1169 0 0 1335 102 0 0 0 125 1174 108
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: 80 1169 0 0 1335 102 0 0 0 125 1174 108
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 80 1169 0 0 1335 102 0 0 0 125 1174 108
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: 80 1169 0 0 1335 102 0 0 0 125 1174 108

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00
Lanes: 1.00 2.00 0.00 0.00 1.86 0.14 0.00 0.00 0.00 0.27 2.50 0.23
Final Sat.: 1598 3400 0 0 3159 241 0 0 0 453 4255 391

Capacity Analysis Module:
Vol/Sat: 0.05 0.34 0.00 0.00 0.42 0.42 0.00 0.00 0.00 0.07 0.28 0.28
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #19 Main St (N/S) / 5th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.611
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: B

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Permitted Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 1 0 2 0 0 0 1 1 1 0 0 0 0 0 0

Volume Module:
Base Vol: 0 1147 52 81 1238 0 108 630 65 0 0 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 1147 52 81 1238 0 108 630 65 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 1147 52 81 1238 0 108 630 65 0 0 0
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: 0 1147 52 81 1238 0 108 630 65 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1147 52 81 1238 0 108 630 65 0 0 0
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 1147 52 81 1238 0 108 630 65 0 0 0

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00 0.94 1.00 0.94
Lanes: 0.00 1.91 0.09 1.00 2.00 0.00 0.40 2.36 0.24 0.00 0.00 0.00
Final Sat.: 0 3253 147 1598 3400 0 686 4001 413 0 0 0

Capacity Analysis Module:
Vol/Sat: 0.00 0.35 0.35 0.05 0.36 0.00 0.06 0.16 0.16 0.00 0.00 0.00
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #20 Main St (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.613
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: B

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
Lanes: 0 0 1 1 0 0 0 1 1 0 0 0 0 1 0

Volume Module:
Base Vol: 0 1124 28 0 1315 22 0 158 131 0 194 74
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 1124 28 0 1315 22 0 158 131 0 194 74
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 1124 28 0 1315 22 0 158 131 0 194 74
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: 0 1124 28 0 1315 22 0 158 131 0 194 74
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1124 28 0 1315 22 0 158 131 0 194 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: 0 1124 28 0 1315 22 0 158 131 0 194 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: 0.00 1.95 0.05 0.00 1.97 0.03 0.00 0.55 0.45 0.00 0.72 0.28
Final Sat.: 0 3317 83 0 3344 56 0 929 771 0 1231 469

Capacity Analysis Module:
Vol/Sat: 0.00 0.34 0.34 0.00 0.39 0.39 0.00 0.17 0.17 0.00 0.16 0.16
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #21 Main St (N/S) / 3rd St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.533
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 25 Level Of Service: A

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
Lanes: 0 0 1 1 0 0 0 1 1 0 1 0 0 1 0

Volume Module:
Base Vol: 0 1130 18 0 1288 26 44 110 37 16 85 16
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 1130 18 0 1288 26 44 110 37 16 85 16
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 1130 18 0 1288 26 44 110 37 16 85 16
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: 0 1130 18 0 1288 26 44 110 37 16 85 16
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1130 18 0 1288 26 44 110 37 16 85 16
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 1130 18 0 1288 26 44 110 37 16 85 16

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: 0.00 1.97 0.03 0.00 1.96 0.04 1.00 0.75 0.25 1.00 0.84 0.16
Final Sat.: 0 3347 53 0 3333 67 1598 1272 428 1598 1431 269

Capacity Analysis Module:
Vol/Sat: 0.00 0.34 0.34 0.00 0.39 0.39 0.03 0.09 0.09 0.01 0.06 0.06
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #22 Main St (N/S) / 1st St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.918
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 99 Level Of Service: E

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: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 1 0 1 0 2 0 1 0 1 0 2 1 0

Volume Module:
Base Vol: 226 889 94 150 1041 122 157 1664 125 112 1126 104
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: 226 889 94 150 1041 122 157 1664 125 112 1126 104
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 226 889 94 150 1041 122 157 1664 125 112 1126 104
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: 226 889 94 150 1041 122 157 1664 125 112 1126 104
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 226 889 94 150 1041 122 157 1664 125 112 1126 104
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: 226 889 94 150 1041 122 157 1664 125 112 1126 104

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 0.94 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 1.00 1.81 0.19 1.00 2.00 1.00 1.00 2.79 0.21 1.00 2.75 0.25
Final Sat.: 1598 3075 325 1598 3400 1598 1598 4744 356 1598 4669 431

Capacity Analysis Module:
Vol/Sat: 0.14 0.29 0.29 0.09 0.31 0.08 0.10 0.35 0.35 0.07 0.24 0.24
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #23 Bush St (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.335
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 18 Level Of Service: A

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
Lanes: 1 0 1 0 0 0 0 0 1 0 0 0 1 1 1 0

Volume Module:
Base Vol: 27 158 0 0 110 43 0 0 0 30 774 104
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: 27 158 0 0 110 43 0 0 0 30 774 104
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 27 158 0 0 110 43 0 0 0 30 774 104
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: 27 158 0 0 110 43 0 0 0 30 774 104
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 27 158 0 0 110 43 0 0 0 30 774 104
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: 27 158 0 0 110 43 0 0 0 30 774 104

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00
Lanes: 1.00 1.00 0.00 0.00 0.72 0.28 0.00 0.00 0.00 0.10 2.56 0.34
Final Sat.: 1598 1700 0 0 1222 478 0 0 0 169 4347 584

Capacity Analysis Module:
Vol/Sat: 0.02 0.09 0.00 0.00 0.09 0.09 0.00 0.00 0.00 0.02 0.18 0.18
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #24 Bush St (N/S) / 5th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.297
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 17 Level Of Service: A

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
Lanes: 0 0 0 1 0 1 0 1 0 0 0 0

Volume Module:
Base Vol: 0 149 36 34 129 0 50 513 31 0 0 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: 0 149 36 34 129 0 50 513 31 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 149 36 34 129 0 50 513 31 0 0 0
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: 0 149 36 34 129 0 50 513 31 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 149 36 34 129 0 50 513 31 0 0 0
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: 0 149 36 34 129 0 50 513 31 0 0 0

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00 0.94 1.00 0.94
Lanes: 0.00 0.81 0.19 1.00 1.00 0.00 0.25 2.59 0.16 0.00 0.00 0.00
Final Sat.: 0 1369 331 1598 1700 0 429 4405 266 0 0 0

Capacity Analysis Module:
Vol/Sat: 0.00 0.11 0.11 0.02 0.08 0.00 0.03 0.12 0.12 0.00 0.00 0.00
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #25 Bush St (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.347
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 18 Level Of Service: A

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
Lanes: 1 0 0 1 0 1 0 0 1 0 0 0

Volume Module:
Base Vol: 9 158 10 20 113 17 31 130 13 13 249 23
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: 9 158 10 20 113 17 31 130 13 13 249 23
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 9 158 10 20 113 17 31 130 13 13 249 23
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: 9 158 10 20 113 17 31 130 13 13 249 23
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 9 158 10 20 113 17 31 130 13 13 249 23
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: 9 158 10 20 113 17 31 130 13 13 249 23

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 0.94 0.06 1.00 0.87 0.13 0.18 0.75 0.07 0.05 0.87 0.08
Final Sat.: 1598 1599 101 1598 1478 222 303 1270 127 78 1485 137

Capacity Analysis Module:
Vol/Sat: 0.01 0.10 0.10 0.01 0.08 0.08 0.02 0.10 0.10 0.01 0.17 0.17
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #28 French St (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.342
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 18 Level Of Service: A

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
Lanes: 0 0 1 0 0 1 0 0 1 0 0 1

Volume Module:
Base Vol: 3 23 39 78 40 22 18 118 6 48 282 53
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: 3 23 39 78 40 22 18 118 6 48 282 53
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 3 23 39 78 40 22 18 118 6 48 282 53
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: 3 23 39 78 40 22 18 118 6 48 282 53
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 3 23 39 78 40 22 18 118 6 48 282 53
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: 3 23 39 78 40 22 18 118 6 48 282 53

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 0.94 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.94
Lanes: 0.05 0.35 0.60 1.00 0.65 0.35 0.13 0.83 0.04 0.15 0.85 1.00
Final Sat.: 78 602 1020 1598 1097 603 215 1413 72 247 1453 1598

Capacity Analysis Module:
Vol/Sat: 0.00 0.04 0.04 0.05 0.04 0.04 0.01 0.08 0.08 0.03 0.19 0.03
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
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Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Lacy St (N/S) / Civic Center Dr (E/W)

Average Delay (sec/veh): 4.0 Worst Case Level Of Service: D[28.6]

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 1 0 0 0 0 1 0 0 0 0 1 0 0 0

Volume Module:
Base Vol: 30 20 38 29 33 37 3 447 34 8 486 180
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: 30 20 38 29 33 37 3 447 34 8 486 180
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 30 20 38 29 33 37 3 447 34 8 486 180
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: 30 20 38 29 33 37 3 447 34 8 486 180
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 30 20 38 29 33 37 3 447 34 8 486 180

Critical Gap Module:
Critical Gp: 7.1 6.5 6.2 7.1 6.5 6.2 4.1 xxxx xxxxx 4.1 xxxx xxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxx xxxxx 2.2 xxxx xxxxx

Capacity Module:
Cnflct Vol: 1097 1152 464 1091 1079 576 666 xxxx xxxxx 481 xxxx xxxxx
Potent Cap.: 192 199 602 194 220 521 933 xxxx xxxxx 1092 xxxx xxxxx
Move Cap.: 157 197 602 166 218 521 933 xxxx xxxxx 1092 xxxx xxxxx
Volume/Cap: 0.19 0.10 0.06 0.17 0.15 0.07 0.00 xxxx xxxxx 0.01 xxxx xxxxx

Level of Service Module:
2Way95thQ: xxxx xxxx xxxxx xxxx xxxx xxxxx 0.0 xxxx xxxxx 0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx 8.9 xxxx xxxxx 8.3 xxxx xxxxx
LOS by Move: * * * * * A * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx 247 xxxxx xxxxx 249 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
SharedQueue:xxxxx 1.5 xxxxx xxxxx 1.8 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 27.4 xxxxx xxxxx 28.6 xxxxx xxxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: * D * * D * * * * *
ApproachDel: 27.4 28.6 xxxxxxx xxxxxxx
ApproachLOS: D D * *

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

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Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Lacy st (N/S) / Santa Ana Bl (E/W)

Average Delay (sec/veh): 8.7 Worst Case Level Of Service: F[122.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module table with 12 columns representing traffic flow metrics for each approach.

Critical Gap Module table with 12 columns for gap and follow-up times.

Capacity Module table with 12 columns for conflict, potent, move, and volume/capacity.

Level of Service Module table with 12 columns for delay, queue, and approach metrics.

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

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Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #31 Lacy St (N/S) / Brown St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.109

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module table with 12 columns representing traffic flow metrics for each approach.

Saturation Flow Module table with 12 columns for adjustment and final saturation.

Capacity Analysis Module table with 12 columns for volume/saturation and delay metrics.

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

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Level of Service Computation Report

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

Intersection #32 Lacy St (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.508
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 24 Level Of Service: A

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
Lanes: 0 0 1 0 0 0 0 1 0 0 1 0 1 0 1 0 1

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 0 0 0 0 1 0 0 1 0 1 0 1 0 1

Volume Module:

Base Vol: 23 36 94 48 29 27 52 355 28 13 522 8
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: 23 36 94 48 29 27 52 355 28 13 522 8
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 23 36 94 48 29 27 52 355 28 13 522 8
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: 23 36 94 48 29 27 52 355 28 13 522 8
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 23 36 94 48 29 27 52 355 28 13 522 8
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: 23 36 94 48 29 27 52 355 28 13 522 8

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 0.94 1.00 1.00 0.94 1.00 0.94
Lanes: 0.15 0.24 0.61 0.46 0.28 0.26 1.00 0.93 0.07 1.00 1.00 1.00
Final Sat.: 256 400 1044 785 474 441 1598 1576 124 1598 1700 1598

Capacity Analysis Module:

Vol/Sat: 0.01 0.09 0.09 0.03 0.06 0.06 0.03 0.23 0.23 0.01 0.31 0.01
Crit Moves: **** **** **** ****

Santa Ana Renaissance Specific Plan Traffic Study
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Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #33 Lacy St (N/S) / 1st St (E/W)

Average Delay (sec/veh): 2.3 Worst Case Level Of Service: E[45.3]

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 1 0 0 0 0 1 0 0 1 0 3 0 0 0 0 2 1 0

Volume Module:

Base Vol: 0 0 0 11 0 98 204 1845 0 0 1184 29
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 11 0 98 204 1845 0 0 1184 29
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 0 0 11 0 98 204 1845 0 0 1184 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: 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: 0 0 0 11 0 98 204 1845 0 0 1184 29
Reduct Vol: 0
FinalVolume: 0 0 0 11 0 98 204 1845 0 0 1184 29

Critical Gap Module:

Critical Gp: 7.5 6.5 6.9 6.8 6.5 6.9 4.1 xxxx xxxxx xxxxx xxxxx xxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxx xxxxx xxxxx xxxxx xxxxx

Capacity Module:

Cnflct Vol: 2648 3466 615 2222 3452 409 1213 xxxx xxxxx xxxxx xxxxx xxxxx
Potent Cap.: 12 7 439 38 7 597 582 xxxx xxxxx xxxxx xxxxx xxxxx
Move Cap.: 7 4 439 28 5 597 582 xxxx xxxxx xxxxx xxxxx xxxxx
Volume/Cap: 0.00 0.00 0.00 0.40 0.00 0.16 0.35 xxxx xxxxx xxxxx xxxxx xxxxx

Level of Service Module:

2Way95thQ: xxxx xxxx xxxxx xxxx xxxx xxxxx 1.6 xxxx xxxxx xxxxx xxxxx xxxxx
Control Del:xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 14.5 xxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: * * * * * B * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx 0 xxxxx xxxxx 193 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx 3.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel:xxxxx xxxxx xxxxx xxxxx 45.3 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * * * E * * * * *
ApproachDel: xxxxxx 45.3 xxxxxx xxxxxx
ApproachLOS: * * * * *

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

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Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #34 Santiago St (N/S) / Washington Av (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 1.561
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 126.8
Optimal Cycle: 0 Level Of Service: F

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 Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 0 1 1 0 1 0 0 0 0 0 0 1 0 0 0

Volume Module:
Base Vol: 62 271 138 26 648 170 147 125 71 204 256 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: 62 271 138 26 648 170 147 125 71 204 256 36
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 62 271 138 26 648 170 147 125 71 204 256 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: 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: 62 271 138 26 648 170 147 125 71 204 256 36
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 62 271 138 26 648 170 147 125 71 204 256 36
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: 62 271 138 26 648 170 147 125 71 204 256 36

Saturation Flow Module:
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 0.43 0.36 0.21 0.41 0.52 0.07
Final Sat.: 377 398 431 392 415 452 177 151 86 177 222 31

Capacity Analysis Module:
Vol/Sat: 0.16 0.68 0.32 0.07 1.56 0.38 0.83 0.83 0.83 1.15 1.15 1.15
Crit Moves: ****
Delay/Veh: 14.0 28.5 14.8 12.5 286 15.4 41.4 41.4 41.4 120.9 121 120.9
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 14.0 28.5 14.8 12.5 286 15.4 41.4 41.4 41.4 120.9 121 120.9
LOS by Move: B D B B F C E E E F F F
ApproachDel: 22.6 223.1 41.4 120.9
Delay Adj: 1.00 1.00 1.00 1.00
ApprAdjDel: 22.6 223.1 41.4 120.9
LOS by Appr: C F E F
AllWayAvgQ: 0.2 1.9 0.5 0.1 31.7 0.6 3.4 3.4 3.4 13.1 13.1 13.1

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

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Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #35 Santiago St (N/S) / Civic Center Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 2.320
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 280.0
Optimal Cycle: 0 Level Of Service: F

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 Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0 0 0 1 0 0 0

Volume Module:
Base Vol: 395 401 21 21 798 258 169 58 250 63 69 17
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: 395 401 21 21 798 258 169 58 250 63 69 17
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 395 401 21 21 798 258 169 58 250 63 69 17
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: 395 401 21 21 798 258 169 58 250 63 69 17
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 395 401 21 21 798 258 169 58 250 63 69 17
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: 395 401 21 21 798 258 169 58 250 63 69 17

Saturation Flow Module:
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 0.95 0.05 1.00 0.76 0.24 0.74 0.26 1.00 0.42 0.47 0.11
Final Sat.: 438 445 23 410 344 111 308 106 472 162 178 44

Capacity Analysis Module:
Vol/Sat: 0.90 0.90 0.90 0.05 2.32 2.32 0.55 0.55 0.53 0.39 0.39 0.39
Crit Moves: ****
Delay/Veh: 50.8 48.3 48.3 11.7 618 618.3 21.2 21.2 18.3 17.8 17.8 17.8
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 50.8 48.3 48.3 11.7 618 618.3 21.2 21.2 18.3 17.8 17.8 17.8
LOS by Move: F E E B F F C C C C C C
ApproachDel: 49.5 606.5 19.7 17.8
Delay Adj: 1.00 1.00 1.00 1.00
ApprAdjDel: 49.5 606.5 19.7 17.8
LOS by Appr: E F C C
AllWayAvgQ: 4.8 4.9 4.9 0.1 76.8 76.8 1.1 1.1 1.1 0.6 0.6 0.6

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

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Level of Service Computation Report

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

Intersection #36 Santiago St (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.904
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 89 Level Of Service: E

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

Volume Module:
Base Vol: 29 223 98 382 351 343 167 633 54 150 1128 606
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: 29 223 98 382 351 343 167 633 54 150 1128 606
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 29 223 98 382 351 343 167 633 54 150 1128 606
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: 29 223 98 382 351 343 167 633 54 150 1128 606
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 29 223 98 382 351 343 167 633 54 150 1128 606
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: 29 223 98 382 351 343 167 633 54 150 1128 606

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.84 0.16 1.00 2.00 1.00
Final Sat.: 1598 1700 1598 1598 1700 1598 1598 3133 267 1598 3400 1598

Capacity Analysis Module:
Vol/Sat: 0.02 0.13 0.06 0.24 0.21 0.21 0.10 0.20 0.20 0.09 0.33 0.38
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #40 Standard Av (N/S) / 1st St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.940
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: E

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
Lanes: 1 0 0 1 0 0 0 1 1 0 0 1 0 1 1 0

Volume Module:
Base Vol: 87 209 141 48 319 8 107 1755 164 81 1230 14
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: 87 209 141 48 319 8 107 1755 164 81 1230 14
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 87 209 141 48 319 8 107 1755 164 81 1230 14
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: 87 209 141 48 319 8 107 1755 164 81 1230 14
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 87 209 141 48 319 8 107 1755 164 81 1230 14
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: 87 209 141 48 319 8 107 1755 164 81 1230 14

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 1.00 1.00 1.00 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 1.00 0.60 0.40 0.13 0.85 0.02 1.00 1.83 0.17 1.00 1.98 0.02
Final Sat.: 1598 1015 685 218 1446 36 1598 3109 291 1598 3362 38

Capacity Analysis Module:
Vol/Sat: 0.05 0.21 0.21 0.03 0.22 0.22 0.07 0.56 0.56 0.05 0.37 0.37
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #42 Grand Av (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 1.178
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: F

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 Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 2 1 0 1 0 2 0 2 0 1 0 1 0

Volume Module:
Base Vol: 204 1052 31 140 2161 1280 276 221 730 27 113 34
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: 204 1052 31 140 2161 1280 276 221 730 27 113 34
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 204 1052 31 140 2161 1280 276 221 730 27 113 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: 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: 204 1052 31 140 2161 1280 276 221 730 27 113 34
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 204 1052 31 140 2161 1280 276 221 730 27 113 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: 204 1052 31 140 2161 1280 276 221 730 27 113 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 0.94 0.94 1.00 0.94 1.00 1.00 1.00
Lanes: 1.00 2.91 0.09 1.00 2.00 2.00 2.00 1.00 2.00 0.31 1.30 0.39
Final Sat.: 1598 4954 146 1598 3400 3196 3196 1700 3196 528 2208 664

Capacity Analysis Module:
Vol/Sat: 0.13 0.21 0.21 0.09 0.64 0.40 0.09 0.13 0.23 0.05 0.05 0.05
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #43 Grand Av (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.747
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 43 Level Of Service: C

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: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 3 0 1 1 0 2 1 0 1 0 1 1 0

Volume Module:
Base Vol: 115 350 135 152 563 107 127 1259 121 140 396 147
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: 115 350 135 152 563 107 127 1259 121 140 396 147
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 115 350 135 152 563 107 127 1259 121 140 396 147
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: 115 350 135 152 563 107 127 1259 121 140 396 147
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 115 350 135 152 563 107 127 1259 121 140 396 147
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: 115 350 135 152 563 107 127 1259 121 140 396 147

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 1.00 0.94 1.00 0.94
Lanes: 1.00 3.00 1.00 1.00 2.52 0.48 1.00 1.82 0.18 1.00 2.00 1.00
Final Sat.: 1598 5100 1598 1598 4286 814 1598 3102 298 1598 3400 1598

Capacity Analysis Module:
Vol/Sat: 0.07 0.07 0.08 0.10 0.13 0.13 0.08 0.41 0.41 0.09 0.12 0.09
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project AM

Level of Service Computation Report

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

Intersection #44 Grand Av (N/S) / 1st St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.894
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 83 Level Of Service: D

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: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 2 0 2 1 0 2 0 3 0 1 2 0 2 1 0 2 0 2 0 1

Volume Module:

Base Vol: 363 731 89 135 1536 138 352 1250 329 382 790 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: 363 731 89 135 1536 138 352 1250 329 382 790 81
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 363 731 89 135 1536 138 352 1250 329 382 790 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: 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: 363 731 89 135 1536 138 352 1250 329 382 790 81
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 363 731 89 135 1536 138 352 1250 329 382 790 81
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: 363 731 89 135 1536 138 352 1250 329 382 790 81

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 0.94 0.94 1.00 1.00 0.94 1.00 0.94
Lanes: 2.00 2.67 0.33 2.00 3.00 1.00 2.00 2.37 0.63 2.00 2.00 1.00
Final Sat.: 3196 4546 554 3196 5100 1598 3196 4037 1063 3196 3400 1598

Capacity Analysis Module:

Vol/Sat: 0.11 0.16 0.16 0.04 0.30 0.09 0.11 0.31 0.31 0.12 0.23 0.05
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project AM

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #45 Penn Way (NS) at I-5 SB Ramps (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.569
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 25.1
Optimal Cycle: 46 Level Of Service: C

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 Permitted Permitted
Rights: Include Include Include Owl
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 2 0 1 2 0 2 0 0 0 0 0 0 0 0 1 0 0 0 2

Volume Module:

Base Vol: 0 203 133 736 314 0 0 0 0 0 304 0 252
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: 0 203 133 736 314 0 0 0 0 0 304 0 252
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 203 133 736 314 0 0 0 0 0 304 0 252
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 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 1.00
PHF Volume: 0 203 133 736 314 0 0 0 0 0 304 0 252
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 203 133 736 314 0 0 0 0 0 304 0 252
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 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 1.00
FinalVolume: 0 203 133 736 314 0 0 0 0 0 304 0 252

Saturation Flow Module:

Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.95 0.85 0.92 0.95 1.00 1.00 1.00 1.00 0.77 1.00 0.75
Lanes: 0.00 2.00 1.00 2.00 2.00 0.00 0.00 0.00 0.00 1.00 0.00 2.00
Final Sat.: 0 3610 1615 3502 3610 0 0 0 0 1461 0 2842

Capacity Analysis Module:

Vol/Sat: 0.00 0.06 0.08 0.21 0.09 0.00 0.00 0.00 0.00 0.21 0.00 0.09
Crit Moves: ****

Green/Cycle: 0.00 0.14 0.14 0.37 0.37 0.00 0.00 0.00 0.00 0.37 0.00 0.74
Volume/Cap: 0.00 0.39 0.57 0.57 0.24 0.00 0.00 0.00 0.00 0.57 0.00 0.12
Delay/Veh: 0.0 39.2 43.2 25.8 21.9 0.0 0.0 0.0 0.0 26.9 0.0 3.9
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 39.2 43.2 25.8 21.9 0.0 0.0 0.0 0.0 26.9 0.0 3.9
LOS by Move: A D D C C A A A A C A A
HCM2kAvgQ: 0 3 5 10 3 0 0 0 0 8 0 1

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

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project AM

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #46 I-5 SB Ramps (NS) / Santa Ana Bl (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.643
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 29.2
Optimal Cycle: 53 Level Of Service: C

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 Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 0 0 0 2 0 0 0 1 2 0 3 0 0 0 0 0 2 1 0

Volume Module:
Base Vol: 0 0 0 508 0 152 263 633 0 0 1296 219
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 0 508 0 152 263 633 0 0 1296 219
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 508 0 152 263 633 0 0 1296 219
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: 0 0 0 508 0 152 263 633 0 0 1296 219
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 508 0 152 263 633 0 0 1296 219
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 0 0 508 0 152 263 633 0 0 1296 219

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.92 1.00 0.85 0.92 0.91 1.00 1.00 0.89 0.89
Lanes: 0.00 0.00 0.00 2.00 0.00 1.00 2.00 3.00 0.00 0.00 2.57 0.43
Final Sat.: 0 0 0 3502 0 1615 3502 5187 0 0 4340 733

Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.15 0.00 0.09 0.08 0.12 0.00 0.00 0.30 0.30
Crit Moves: **** **** ****
Green/Cycle: 0.00 0.00 0.00 0.23 0.00 0.23 0.19 0.19 0.00 0.00 0.46 0.46
Volume/Cap: 0.00 0.00 0.00 0.64 0.00 0.42 0.40 0.64 0.00 0.00 0.64 0.64
Delay/Veh: 0.0 0.0 0.0 36.9 0.0 33.9 35.9 38.8 0.0 0.0 21.1 21.1
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 0.0 0.0 36.9 0.0 33.9 35.9 38.8 0.0 0.0 21.1 21.1
LOS by Move: A A A D A C D D A A C C
HCM2kAvgQ: 0 0 0 8 0 4 4 8 0 0 13 13

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

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project AM

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #47 I-5 NB Ramps (NS) / 17th St. (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.903
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 39.9
Optimal Cycle: 100 Level Of Service: D

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 Ignore Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 1 0 0 1 1 0 0 0 1 1 0 3 0 1 0 0 2 1 0

Volume Module:
Base Vol: 767 99 44 44 0 226 150 1051 294 0 1477 59
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: 767 99 44 44 0 226 150 1051 294 0 1477 59
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 767 99 44 44 0 226 150 1051 294 0 1477 59
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: 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 Volume: 767 99 44 44 0 226 150 1051 0 0 1477 59
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 767 99 44 44 0 226 150 1051 0 0 1477 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: 767 99 44 44 0 226 150 1051 0 0 1477 59

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.96 0.96 0.85 0.95 1.00 0.85 0.95 0.91 1.00 1.00 0.90 0.90
Lanes: 1.77 0.23 1.00 1.00 0.00 1.00 1.00 3.00 1.00 0.00 2.88 0.12
Final Sat.: 3224 416 1615 1805 0 1615 1805 5187 1900 0 4958 198

Capacity Analysis Module:
Vol/Sat: 0.24 0.24 0.03 0.02 0.00 0.14 0.08 0.20 0.00 0.00 0.30 0.30
Crit Moves: **** **** ****
Green/Cycle: 0.26 0.26 0.26 0.15 0.00 0.15 0.09 0.42 0.00 0.00 0.33 0.33
Volume/Cap: 0.90 0.90 0.10 0.16 0.00 0.90 0.90 0.48 0.00 0.00 0.90 0.90
Delay/Veh: 47.3 47.3 28.0 36.9 0.0 74.1 88.0 21.1 0.0 0.0 39.2 39.2
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 47.3 47.3 28.0 36.9 0.0 74.1 88.0 21.1 0.0 0.0 39.2 39.2
LOS by Move: D D C D A E F C A A D D
HCM2kAvgQ: 17 17 1 1 0 10 8 9 0 0 20 20

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

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project AM

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

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*****
Intersection #48 I-5 NB Ramps (NS) / Grand Ave (EW)
*****
Cycle (sec):          100          Critical Vol./Cap.(X):          0.934
Loss Time (sec):      12 (Y+R=4.0 sec)  Average Delay (sec/veh):      30.2
Optimal Cycle:        100          Level Of Service:              C
*****
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      Split Phase      Split Phase
Rights:          Ignore          Include          Include          Include
Lanes:          0 0 3 0 1      1 0 3 0 0      0 0 0 0 0      2 0 0 0 1
-----|-----|-----|-----|
Volume Module:
Base Vol:        0 970 491      108 2716      0 0 0 0      1045 0 321
Growth Adj:      1.00 1.00 1.00      1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:      0 970 491      108 2716      0 0 0 0      1045 0 321
Added Vol:        0 0 0 0      0 0 0 0      0 0 0 0      0 0 0 0
PasserByVol:      0 0 0 0      0 0 0 0      0 0 0 0      0 0 0 0
Initial Fut:      0 970 491      108 2716      0 0 0 0      1045 0 321
User Adj:         1.00 1.00 0.00      1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:          1.00 1.00 0.00      1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:       0 970 0      108 2716      0 0 0 0      1045 0 321
Reduct Vol:       0 0 0 0      0 0 0 0      0 0 0 0      0 0 0 0
Reduced Vol:      0 970 0      108 2716      0 0 0 0      1045 0 321
PCE Adj:          1.00 1.00 0.00      1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:          1.00 1.00 0.00      1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:      0 970 0      108 2716      0 0 0 0      1045 0 321
-----|-----|-----|-----|
Saturation Flow Module:
Sat/Lane:        1900 1900 1900      1900 1900 1900 1900 1900 1900 1900
Adjustment:      1.00 0.91 1.00      0.95 0.91 1.00 1.00 1.00 1.00 0.85
Lanes:           0.00 3.00 1.00      1.00 3.00 0.00 0.00 0.00 2.00 0.00 1.00
Final Sat.:      0 5187 1900      1805 5187      0 0 0 0      3502 0 1615
-----|-----|-----|-----|
Capacity Analysis Module:
Vol/Sat:         0.00 0.19 0.00      0.06 0.52 0.00 0.00 0.00 0.00 0.30 0.00 0.20
Crit Moves:      ****              ****
Green/Cycle:     0.00 0.42 0.00      0.14 0.56 0.00 0.00 0.00 0.00 0.32 0.00 0.32
Volume/Cap:      0.00 0.44 0.00      0.44 0.93 0.00 0.00 0.00 0.00 0.93 0.00 0.62
Delay/Veh:       0.0 20.5 0.0      41.0 26.7 0.0 0.0 0.0 0.0 46.9 0.0 31.3
User DelAdj:     1.00 1.00 1.00      1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:      0.0 20.5 0.0      41.0 26.7 0.0 0.0 0.0 0.0 46.9 0.0 31.3
LOS by Move:     A C A D C A A A A D A C
HCM2kAvgQ:       0 8 0 4 33 0 0 0 0 21 0 9
*****
Note: Queue reported is the number of cars per lane.
*****

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Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project AM

Level of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

```

*****
Intersection #49 Mortimer (N/S) / Santa Ana Blvd (E/W)
*****
Average Delay (sec/veh):      2.4          Worst Case Level Of Service: C[ 23.1]
*****
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 0 1      0 0 1 0 0      0 0 0 0 0      1 0 0 1 0
-----|-----|-----|-----|
Volume Module:
Base Vol:        0 0 225      3 6 1      0 0 0      39 931 3
Growth Adj:      1.00 1.00 1.00      1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:      0 0 225      3 6 1      0 0 0      39 931 3
Added Vol:        0 0 0 0      0 0 0 0      0 0 0 0      0 0 0 0
PasserByVol:      0 0 0 0      0 0 0 0      0 0 0 0      0 0 0 0
Initial Fut:      0 0 225      3 6 1      0 0 0      39 931 3
User Adj:         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
PHF Volume:       0 0 225      3 6 1      0 0 0      39 931 3
Reduct Vol:       0 0 0 0      0 0 0 0      0 0 0 0      0 0 0 0
FinalVolume:      0 0 225      3 6 1      0 0 0      39 931 3
-----|-----|-----|-----|
Critical Gap Module:
Critical Gp:xxxxx xxxxx 6.2 7.1 6.5 6.2 xxxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx
FollowUpTim:xxxxxx xxxxx 3.3 3.5 4.0 3.3 xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx
-----|-----|-----|-----|
Capacity Module:
Cnflct Vol: xxxxx xxxxx 0 1011 1011 933 xxxxx xxxxx xxxxxx 0 xxxxx xxxxxx
Potent Cap.: xxxxx xxxxx 900 220 242 326 xxxxx xxxxx xxxxxx 900 xxxxx xxxxxx
Move Cap.: xxxxx xxxxx 900 160 231 326 xxxxx xxxxx xxxxxx 900 xxxxx xxxxxx
Volume/Cap: xxxxx xxxxx 0.25 0.02 0.03 0.00 xxxxx xxxxx xxxxx 0.04 xxxxx xxxxx
-----|-----|-----|-----|
Level Of Service Module:
2Way95thQ: xxxxx xxxxx 1.0 xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx
Control Del:xxxxxx xxxxx 10.3 xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx 9.2 xxxxx xxxxxx
LOS by Move: * * B * * * * * * * * A * *
Movement:      LT - LTR - RT      LT - LTR - RT      LT - LTR - RT      LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx 209 xxxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue:xxxxxx xxxxx xxxxxx xxxxxx 0.1 xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shrd ConDel:xxxxxx xxxxx xxxxxx xxxxxx 23.1 xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: * * * * * C * * * * *
ApproachDel:      10.3              23.1          xxxxxxxx          xxxxxxxx
ApproachLOS:      B C * *
*****
Note: Queue reported is the number of cars per lane.
*****

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Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project AM

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #50 Mortimer (N/S) / 5th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.343
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 9.5
Optimal Cycle: 0 Level Of Service: A

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 Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 0 1 0 0 0 1 0 0 0 0

Volume Module:
Base Vol: 0 150 6 4 22 3 222 32 43 7 0 11
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: 0 150 6 4 22 3 222 32 43 7 0 11
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 150 6 4 22 3 222 32 43 7 0 11
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: 0 150 6 4 22 3 222 32 43 7 0 11
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 150 6 4 22 3 222 32 43 7 0 11
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: 0 150 6 4 22 3 222 32 43 7 0 11

Saturation Flow Module:
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: 0.00 0.96 0.04 0.14 0.76 0.10 1.00 0.43 0.57 0.39 0.00 0.61
Final Sat.: 0 708 28 97 534 73 647 330 443 297 0 466

Capacity Analysis Module:
Vol/Sat: xxxx 0.21 0.21 0.04 0.04 0.04 0.34 0.10 0.10 0.02 xxxx 0.02
Crit Moves: ****
Delay/Veh: 0.0 8.9 8.9 8.0 8.0 8.0 10.9 7.7 7.7 7.6 0.0 7.6
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 8.9 8.9 8.0 8.0 8.0 10.9 7.7 7.7 7.6 0.0 7.6
LOS by Move: * A A A A A B A A A * A
ApproachDel: 8.9 8.0 10.1 7.6
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 8.9 8.0 10.1 7.6
LOS by Appr: A A B A
AllWayAvgQ: 0.2 0.2 0.2 0.0 0.0 0.0 0.5 0.1 0.1 0.0 0.0 0.0

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

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project PM

Scenario Report

Scenario: 2035NPPM
 Command: 2035NP PM
 Volume: 2035NPPM
 Geometry: Future
 Impact Fee: Default Impact Fee
 Trip Generation: Default Trip Generation
 Trip Distribution: Default Trip Distribution
 Paths: Default Path
 Routes: Default Route
 Configuration: Default Configuration

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Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh C	Del/ LOS	V/ Veh C	
# 1 Flower St (NS)/ Civic Center D	F	xxxxx 1.138	F	xxxxx 1.138	+ 0.000 V/C
# 2 Flower St (N/S) / Santa Ana Bl	B	xxxxx 0.694	B	xxxxx 0.694	+ 0.000 V/C
# 3 Parton St (E/W) / Santa Ana Bl	A	xxxxx 0.428	A	xxxxx 0.428	+ 0.000 V/C
# 4 Ross St (N/S) / Civic Center D	A	xxxxx 0.564	A	xxxxx 0.564	+ 0.000 V/C
# 5 Ross St (N/S) / Santa Ana Bl (	B	xxxxx 0.668	B	xxxxx 0.668	+ 0.000 V/C
# 6 Ross St (N/S) / 4th St (E/W)	B	13.6 0.000	B	13.6 0.000	+ 0.000 D/V
# 7 Broadway (N/S) / Civic Center	C	xxxxx 0.743	C	xxxxx 0.743	+ 0.000 V/C
# 8 Broadway (N/S) / Santa Ana Bl	B	xxxxx 0.612	B	xxxxx 0.612	+ 0.000 V/C
# 9 Broadway (N/S) / 5th St (E/W)	B	xxxxx 0.620	B	xxxxx 0.620	+ 0.000 V/C
# 10 Broadway (N/S) / 4th St (E/W)	B	xxxxx 0.610	B	xxxxx 0.610	+ 0.000 V/C
# 11 Broadway (N/S)/ 3rd st (E/W)	D	xxxxx 0.803	D	xxxxx 0.803	+ 0.000 V/C
# 12 Broadway (N/S) / 1st St (E/W)	D	xxxxx 0.844	D	xxxxx 0.844	+ 0.000 V/C
# 13 Sycamore St (N/S) / Civic Cent	A	xxxxx 0.573	A	xxxxx 0.573	+ 0.000 V/C
# 14 Sycamore St (N/S) / Santa Ana	D	29.8 0.000	D	29.8 0.000	+ 0.000 D/V
# 15 Sycamore St (N/S) / 5th St (E/	C	15.7 0.000	C	15.7 0.000	+ 0.000 D/V
# 16 Sycamore St (N/S) / 4th St (E/	A	9.8 0.435	A	9.8 0.435	+ 0.000 V/C
# 17 Main St (N/S) / Civic Center D	D	xxxxx 0.883	D	xxxxx 0.883	+ 0.000 V/C
# 18 Main St (N/S) / Santa Ana Dr (	D	xxxxx 0.836	D	xxxxx 0.836	+ 0.000 V/C
# 19 Main St (N/S) / 5th St (E/W)	D	xxxxx 0.812	D	xxxxx 0.812	+ 0.000 V/C
# 20 Main St (N/S) / 4th St (E/W)	C	xxxxx 0.776	C	xxxxx 0.776	+ 0.000 V/C
# 21 Main St (N/S) / 3rd St (E/W)	B	xxxxx 0.694	B	xxxxx 0.694	+ 0.000 V/C
# 22 Main St (N/S) / 1st St (E/W)	F	xxxxx 1.013	F	xxxxx 1.013	+ 0.000 V/C
# 23 Bush St (N/S) / Santa Ana Bl (A	xxxxx 0.462	A	xxxxx 0.462	+ 0.000 V/C
# 24 Bush St (N/S) / 5th St (E/W)	A	xxxxx 0.560	A	xxxxx 0.560	+ 0.000 V/C

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Intersection	Base		Future		Change in	
	Del/ LOS Veh	V/ C	Del/ LOS Veh	V/ C		
# 25 Bush St (N/S) / 4th St (E/W)	A xxxxx	0.576	A xxxxx	0.576	+ 0.000	V/C
# 26 Spurgeon St (N/S) / 1st St (E/	C 18.7	0.000	C 18.7	0.000	+ 0.000	D/V
# 27 French St (N/S) / Santa Ana Bl	C 24.0	0.000	C 24.0	0.000	+ 0.000	D/V
# 28 French St (N/S) / 4th St (E/W)	A xxxxx	0.543	A xxxxx	0.543	+ 0.000	V/C
# 29 Lacy St (N/S) / Civic Center D	F 69.9	0.000	F 69.9	0.000	+ 0.000	D/V
# 30 Lacy st (N/S) / Santa Ana Bl (	F 179.1	0.000	F 179.1	0.000	+ 0.000	D/V
# 31 Lacy St (N/S) / Brown St (E/W)	A 8.1	0.250	A 8.1	0.250	+ 0.000	V/C
# 32 Lacy St (N/S) / 4th St (E/W)	C xxxxx	0.751	C xxxxx	0.751	+ 0.000	V/C
# 33 Lacy St (N/S) / 1st St (E/W)	F 410.8	0.000	F 410.8	0.000	+ 0.000	D/V
# 34 Santiago St (N/S) / Washington	F 143.1	1.458	F 143.1	1.458	+ 0.000	V/C
# 35 Santiago St (N/S) / Civic Cent	F 221.7	1.781	F 221.7	1.781	+ 0.000	V/C
# 36 Santiago St (N/S) / Santa Ana	E xxxxx	0.993	E xxxxx	0.993	+ 0.000	V/C
# 40 Standard Av (N/S) / 1st St (E/	E xxxxx	0.970	E xxxxx	0.970	+ 0.000	V/C
# 42 Grand Av (N/S) / Santa Ana Bl	F xxxxx	1.312	F xxxxx	1.312	+ 0.000	V/C
# 43 Grand Av (N/S) / 4th St (E/W)	D xxxxx	0.841	D xxxxx	0.841	+ 0.000	V/C
# 44 Grand Av (N/S) / 1st St (E/W)	E xxxxx	0.960	E xxxxx	0.960	+ 0.000	V/C
# 45 Penn Way (NS) at I-5 SB Ramps	C 28.5	0.658	C 28.5	0.658	+ 0.000	D/V
# 46 I-5 SB Ramps (NS) / Santa Ana	C 29.7	0.615	C 29.7	0.615	+ 0.000	D/V
# 47 I-5 NB Ramps (NS) / 17th St. (	E 73.0	1.108	E 73.0	1.108	+ 0.000	D/V
# 48 I-5 NB Ramps (NS) / Grand Ave	F 119.9	1.316	F 119.9	1.316	+ 0.000	D/V
# 49 Mortimer (N/S) / Santa Ana Blv	C 23.0	0.000	C 23.0	0.000	+ 0.000	D/V
# 50 Mortimer (N/S) / 5th St (E/W)	D 33.5	0.973	D 33.5	0.973	+ 0.000	V/C

Santa Ana Renaissance Specific Plan Traffic Study
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Flower St (NS)/ Civic Center Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 1.138
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement:												
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1	0	1	1	0	1	1	0	1	1	0	1

Volume Module:

Base Vol:	243	1245	114	213	1267	114	275	993	140	232	1055	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:	243	1245	114	213	1267	114	275	993	140	232	1055	160
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	243	1245	114	213	1267	114	275	993	140	232	1055	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:	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:	243	1245	114	213	1267	114	275	993	140	232	1055	160
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	243	1245	114	213	1267	114	275	993	140	232	1055	160
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:	243	1245	114	213	1267	114	275	993	140	232	1055	160

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	1.83	0.17	1.00	1.83	0.17	1.00	1.75	0.25	1.00	1.74	0.26
Final Sat.:	1598	3115	285	1598	3119	281	1598	2980	420	1598	2952	448

Capacity Analysis Module:

Vol/Sat:	0.15	0.40	0.40	0.13	0.41	0.41	0.17	0.33	0.33	0.15	0.36	0.36
Crit Moves:	****			****			****			****		

Santa Ana Renaissance Specific Plan Traffic Study
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Level of Service Computation Report

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

Intersection #2 Flower St (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.694
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 36 Level Of Service: B

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

Volume Module:
Base Vol: 184 931 57 109 708 58 135 529 131 230 738 231
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: 184 931 57 109 708 58 135 529 131 230 738 231
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 184 931 57 109 708 58 135 529 131 230 738 231
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: 184 931 57 109 708 58 135 529 131 230 738 231
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 184 931 57 109 708 58 135 529 131 230 738 231
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: 184 931 57 109 708 58 135 529 131 230 738 231

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 0.94
Lanes: 1.00 2.00 1.00 1.00 2.00 1.00 1.00 3.00 1.00 1.00 2.00 1.00
Final Sat.: 1598 3400 1598 1598 3400 1598 1598 5100 1598 1598 3400 1598

Capacity Analysis Module:
Vol/Sat: 0.12 0.27 0.04 0.07 0.21 0.04 0.08 0.10 0.08 0.14 0.22 0.14
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
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Level of Service Computation Report

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

Intersection #3 Parton St (E/W) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.428
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 21 Level Of Service: A

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

Volume Module:
Base Vol: 92 6 110 57 9 32 6 645 59 37 1094 22
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: 92 6 110 57 9 32 6 645 59 37 1094 22
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 92 6 110 57 9 32 6 645 59 37 1094 22
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: 92 6 110 57 9 32 6 645 59 37 1094 22
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 92 6 110 57 9 32 6 645 59 37 1094 22
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 6 110 57 9 32 6 645 59 37 1094 22

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 0.94 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 0.44 0.03 0.53 0.86 0.14 1.00 1.00 2.75 0.25 1.00 2.94 0.06
Final Sat.: 752 49 899 1468 232 1598 1598 4673 427 1598 4999 101

Capacity Analysis Module:
Vol/Sat: 0.05 0.12 0.12 0.03 0.04 0.02 0.00 0.14 0.14 0.02 0.22 0.22
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project PM

Level of Service Computation Report

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

Intersection #4 Ross St (N/S) / Civic Center Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.564
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 27 Level Of Service: A

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
Lanes: 1 0 1 0 1 1 0 0 1 1 0 1 0 1 1 0

Volume Module:
Base Vol: 97 282 148 90 168 107 68 793 77 57 717 113
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: 97 282 148 90 168 107 68 793 77 57 717 113
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 97 282 148 90 168 107 68 793 77 57 717 113
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: 97 282 148 90 168 107 68 793 77 57 717 113
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 97 282 148 90 168 107 68 793 77 57 717 113
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: 97 282 148 90 168 107 68 793 77 57 717 113

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 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 0.61 0.39 1.00 1.82 0.18 1.00 1.73 0.27
Final Sat.: 1598 1700 1598 1598 1039 661 1598 3099 301 1598 2937 463

Capacity Analysis Module:
Vol/Sat: 0.06 0.17 0.09 0.06 0.16 0.16 0.04 0.26 0.26 0.04 0.24 0.24
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #5 Ross St (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.668
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 34 Level Of Service: B

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 Ignore
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 0 1 1 0 1 0 1 2 0 1 1 0 3 0 1

Volume Module:
Base Vol: 135 320 172 79 244 127 97 1030 131 123 764 118
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: 135 320 172 79 244 127 97 1030 131 123 764 118
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 135 320 172 79 244 127 97 1030 131 123 764 118
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: 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 Volume: 135 320 172 79 244 127 97 1030 0 123 764 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 135 320 172 79 244 127 97 1030 0 123 764 0
PCE 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
MLF 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
FinalVolume: 135 320 172 79 244 127 97 1030 0 123 764 0

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 2.00 1.00 1.00 3.00 1.00
Final Sat.: 1598 1700 1598 1598 1700 1598 1598 3400 1598 1598 5100 1598

Capacity Analysis Module:
Vol/Sat: 0.08 0.19 0.11 0.05 0.14 0.08 0.06 0.30 0.00 0.08 0.15 0.00
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
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Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #6 Ross St (N/S) / 4th St (E/W)

Average Delay (sec/veh): 2.8 Worst Case Level Of Service: B [13.6]

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

Volume Module:

Base Vol:	0	352	39	82	280	0	0	0	0	51	0	84
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	352	39	82	280	0	0	0	0	51	0	84
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	352	39	82	280	0	0	0	0	51	0	84
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:	0	352	39	82	280	0	0	0	0	51	0	84
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
FinalVolume:	0	352	39	82	280	0	0	0	0	51	0	84

Critical Gap Module:

Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxxx	xxxxx	xxxx	xxxxxx	6.4	xxxx	6.2
FollowUpTim:	xxxxxx	xxxx	xxxxxx	2.2	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	3.5	xxxx	3.3

Capacity Module:

Cnflct Vol:	xxxx	xxxx	xxxxxx	391	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	816	xxxx	372
Potent Cap.:	xxxx	xxxx	xxxxxx	1179	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	350	xxxx	679
Move Cap.:	xxxx	xxxx	xxxxxx	1179	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	331	xxxx	679
Volume/Cap:	xxxx	xxxx	xxxx	0.07	xxxx	xxxx	xxxx	xxxx	xxxx	0.15	xxxx	0.12

Level Of Service Module:

2Way95thQ:	xxxx	xxxx	xxxxxx	0.2	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	0.5	xxxx	0.4			
Control Del:	xxxxx	xxxx	xxxxxx	8.3	xxxx	xxxxxx	xxxxxx	xxxx	xxxxxx	17.9	xxxx	11.1			
LOS by Move:	*	*	*	A	*	*	*	*	*	C	*	B			
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx	xxxx	xxxx	xxxxxx			
SharedQueue:	xxxxx	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:	xxxxxx		xxxxxx		xxxxxx		xxxxxx		13.6						
ApproachLOS:	*		*		*		*		B						

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

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project PM

Level of Service Computation Report

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

Intersection #7 Broadway (N/S) / Civic Center Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.743
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 42 Level Of Service: C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	T	R	L	T	R	L	T	R	L	T	R	L	T	R	
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Ignore				Ignore				Include				Include			
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Lanes:	1	0	2	0	1	1	0	2	0	1	1	0	1	1	0	

Volume Module:

Base Vol:	87	735	72	162	837	208	252	888	87	49	604	138
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:	87	735	72	162	837	208	252	888	87	49	604	138
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	87	735	72	162	837	208	252	888	87	49	604	138
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:	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 Volume:	87	735	0	162	837	0	252	888	87	49	604	138
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	87	735	0	162	837	0	252	888	87	49	604	138
PCE 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
MLF 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
FinalVolume:	87	735	0	162	837	0	252	888	87	49	604	138

Saturation Flow Module:

Sat/Lane:	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
Adjustment:	0.94	1.00	0.94	0.94	1.00	0.94	0.94	1.00	1.00	0.94	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.82	0.18	1.00	1.63	0.37
Final Sat.:	1598	3400	1598	1598	3400	1598	1598	3097	303	1598	2768	632

Capacity Analysis Module:

Vol/Sat:	0.05	0.22	0.00	0.10	0.25	0.00	0.16	0.29	0.29	0.03	0.22	0.22
Crit Moves:	****			****			****			****		

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Level of Service Computation Report

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

Intersection #8 Broadway (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.612
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: B

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

Volume Module:
Base Vol: 53 819 0 0 799 168 0 0 0 62 1023 162
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: 53 819 0 0 799 168 0 0 0 62 1023 162
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 53 819 0 0 799 168 0 0 0 62 1023 162
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: 53 819 0 0 799 168 0 0 0 62 1023 162
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 53 819 0 0 799 168 0 0 0 62 1023 162
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: 53 819 0 0 799 168 0 0 0 62 1023 162

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00
Lanes: 1.00 2.00 0.00 0.00 1.65 0.35 0.00 0.00 0.00 0.15 2.46 0.39
Final Sat.: 1598 3400 0 0 2809 591 0 0 0 254 4184 663

Capacity Analysis Module:
Vol/Sat: 0.03 0.24 0.00 0.00 0.28 0.28 0.00 0.00 0.00 0.04 0.24 0.24
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
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Level of Service Computation Report

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

Intersection #9 Broadway (N/S) / 5th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.620
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: B

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Permitted Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 1 0 2 0 0 0 1 1 1 0 0 0 0 0 0

Volume Module:
Base Vol: 0 677 142 172 825 0 224 884 23 0 0 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: 0 677 142 172 825 0 224 884 23 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 677 142 172 825 0 224 884 23 0 0 0
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: 0 677 142 172 825 0 224 884 23 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 677 142 172 825 0 224 884 23 0 0 0
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: 0 677 142 172 825 0 224 884 23 0 0 0

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00 0.94 1.00 0.94
Lanes: 0.00 1.65 0.35 1.00 2.00 0.00 0.59 2.35 0.06 0.00 0.00 0.00
Final Sat.: 0 2811 589 1598 3400 0 1010 3986 104 0 0 0

Capacity Analysis Module:
Vol/Sat: 0.00 0.24 0.24 0.11 0.24 0.00 0.13 0.22 0.22 0.00 0.00 0.00
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #10 Broadway (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.610
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level Of Service: B

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
Lanes: 1 0 1 1 0 1 0 1 1 0 0 0 1 0 0 0

Volume Module:
Base Vol: 79 924 241 31 709 27 58 125 71 83 153 48
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: 79 924 241 31 709 27 58 125 71 83 153 48
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 79 924 241 31 709 27 58 125 71 83 153 48
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: 79 924 241 31 709 27 58 125 71 83 153 48
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 79 924 241 31 709 27 58 125 71 83 153 48
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: 79 924 241 31 709 27 58 125 71 83 153 48

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 1.59 0.41 1.00 1.93 0.07 0.23 0.49 0.28 0.29 0.54 0.17
Final Sat.: 1598 2697 703 1598 3275 125 388 837 475 497 916 287

Capacity Analysis Module:
Vol/Sat: 0.05 0.34 0.34 0.02 0.22 0.22 0.03 0.15 0.15 0.05 0.17 0.17
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #11 Broadway (N/S)/ 3rd st (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.803
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 53 Level Of Service: D

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
Lanes: 1 0 0 1 0 1 0 1 0 1 0 1 0 0 1 0

Volume Module:
Base Vol: 65 746 57 79 673 70 85 133 26 22 174 128
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: 65 746 57 79 673 70 85 133 26 22 174 128
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 65 746 57 79 673 70 85 133 26 22 174 128
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: 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: 65 746 57 79 673 70 85 133 26 22 174 128
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 65 746 57 79 673 70 85 133 26 22 174 128
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: 65 746 57 79 673 70 85 133 26 22 174 128

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 0.94 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 1.00 0.93 0.07 1.00 1.00 1.00 1.00 0.84 0.16 1.00 0.58 0.42
Final Sat.: 1598 1579 121 1598 1700 1598 1598 1422 278 1598 979 721

Capacity Analysis Module:
Vol/Sat: 0.04 0.47 0.47 0.05 0.40 0.04 0.05 0.09 0.09 0.01 0.18 0.18
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #12 Broadway (N/S) / 1st St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.844
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 63 Level Of Service: D

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: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 0 1 1 0 1 0 1 0 1 0 2 1 0 1 0 2 1 0

Volume Module:
Base Vol: 108 425 130 77 465 171 165 1431 81 153 1701 82
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: 108 425 130 77 465 171 165 1431 81 153 1701 82
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 108 425 130 77 465 171 165 1431 81 153 1701 82
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: 108 425 130 77 465 171 165 1431 81 153 1701 82
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 108 425 130 77 465 171 165 1431 81 153 1701 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: 108 425 130 77 465 171 165 1431 81 153 1701 82

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 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 2.84 0.16 1.00 2.86 0.14
Final Sat.: 1598 1700 1598 1598 1700 1598 1598 4827 273 1598 4865 235

Capacity Analysis Module:
Vol/Sat: 0.07 0.25 0.08 0.05 0.27 0.11 0.10 0.30 0.30 0.10 0.35 0.35
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #13 Sycamore St (N/S) / Civic Center Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.573
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 27 Level Of Service: A

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
Lanes: 0 0 1 0 0 0 0 1 0 0 1 0 1 1 0 1 0 1 1 0

Volume Module:
Base Vol: 28 61 28 110 110 118 27 1008 19 9 564 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: 28 61 28 110 110 118 27 1008 19 9 564 39
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 28 61 28 110 110 118 27 1008 19 9 564 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: 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: 28 61 28 110 110 118 27 1008 19 9 564 39
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 28 61 28 110 110 118 27 1008 19 9 564 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: 28 61 28 110 110 118 27 1008 19 9 564 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 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 0.24 0.52 0.24 0.32 0.33 0.35 1.00 1.96 0.04 1.00 1.87 0.13
Final Sat.: 407 886 407 553 553 593 1598 3337 63 1598 3180 220

Capacity Analysis Module:
Vol/Sat: 0.02 0.07 0.07 0.06 0.20 0.20 0.02 0.30 0.30 0.01 0.18 0.18
Crit Moves: ****

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Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #14 Sycamore St (N/S) / Santa Ana Bl (E/W)

Average Delay (sec/veh): 7.2 Worst Case Level Of Service: D[29.8]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Stop Sign, Uncontrolled), Rights (Include), Lanes (0-1-0-0).

Volume Module table with 12 columns for traffic volume and 12 columns for growth/initial/added/passers/initial fut/PHF/PHF/Reduct/Final volume.

Critical Gap Module table with 12 columns for Critical Gap, FollowUpTim, and other metrics.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

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

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Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #15 Sycamore St (N/S) / 5th St (E/W)

Average Delay (sec/veh): 4.1 Worst Case Level Of Service: C[15.7]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Stop Sign, Uncontrolled), Rights (Include), Lanes (0-0-0-1).

Volume Module table with 12 columns for traffic volume and 12 columns for growth/initial/added/passers/initial fut/PHF/PHF/Reduct/Final volume.

Critical Gap Module table with 12 columns for Critical Gap, FollowUpTim, and other metrics.

Capacity Module table with 12 columns for Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with 12 columns for 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

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

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Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #16 Sycamore St (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.435
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 9.8
Optimal Cycle: 0 Level Of Service: A

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 Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 0 0 0 0 1 0 0 0 0

Volume Module:
Base Vol: 3 9 94 22 10 27 23 161 22 101 209 26
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: 3 9 94 22 10 27 23 161 22 101 209 26
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 3 9 94 22 10 27 23 161 22 101 209 26
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: 3 9 94 22 10 27 23 161 22 101 209 26
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 3 9 94 22 10 27 23 161 22 101 209 26
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: 3 9 94 22 10 27 23 161 22 101 209 26

Saturation Flow Module:
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: 0.03 0.08 0.89 0.37 0.17 0.46 0.11 0.78 0.11 0.30 0.62 0.08
Final Sat.: 20 60 622 240 109 295 84 586 80 232 480 60

Capacity Analysis Module:
Vol/Sat: 0.15 0.15 0.15 0.09 0.09 0.09 0.27 0.27 0.27 0.44 0.44 0.44
Crit Moves: ****
Delay/Veh: 8.4 8.4 8.4 8.5 8.5 8.5 9.3 9.3 9.3 10.8 10.8 10.8
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 8.4 8.4 8.4 8.5 8.5 8.5 9.3 9.3 9.3 10.8 10.8 10.8
LOS by Move: A A A A A A A A B B B
ApproachDel: 8.4 8.5 10.8
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 8.4 8.5 9.3 10.8
LOS by Appr: A A B
AllWayAvgQ: 0.1 0.1 0.1 0.1 0.1 0.1 0.3 0.3 0.3 0.7 0.7 0.7

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

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Level of Service Computation Report

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

Intersection #17 Main St (N/S) / Civic Center Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.883
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 78 Level Of Service: D

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
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0

Volume Module:
Base Vol: 139 1225 104 83 1192 103 161 937 155 71 472 82
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: 139 1225 104 83 1192 103 161 937 155 71 472 82
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 139 1225 104 83 1192 103 161 937 155 71 472 82
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 1225 104 83 1192 103 161 937 155 71 472 82
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 139 1225 104 83 1192 103 161 937 155 71 472 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: 139 1225 104 83 1192 103 161 937 155 71 472 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 1.84 0.16 1.00 1.84 0.16 1.00 1.72 0.28 1.00 1.70 0.30
Final Sat.: 1598 3134 266 1598 3130 270 1598 2917 483 1598 2897 503

Capacity Analysis Module:
Vol/Sat: 0.09 0.39 0.39 0.05 0.38 0.38 0.10 0.32 0.32 0.04 0.16 0.16
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #18 Main St (N/S) / Santa Ana Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.836
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 61 Level Of Service: D

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

Volume Module:
Base Vol: 107 1505 0 0 1499 90 0 0 0 98 1060 125
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: 107 1505 0 0 1499 90 0 0 0 98 1060 125
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 107 1505 0 0 1499 90 0 0 0 98 1060 125
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: 107 1505 0 0 1499 90 0 0 0 98 1060 125
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 107 1505 0 0 1499 90 0 0 0 98 1060 125
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 1505 0 0 1499 90 0 0 0 98 1060 125

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00
Lanes: 1.00 2.00 0.00 0.00 1.89 0.11 0.00 0.00 0.00 0.23 2.48 0.29
Final Sat.: 1598 3400 0 0 3207 193 0 0 0 390 4214 497

Capacity Analysis Module:
Vol/Sat: 0.07 0.44 0.00 0.00 0.47 0.47 0.00 0.00 0.00 0.06 0.25 0.25
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #19 Main St (N/S) / 5th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.812
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 55 Level Of Service: D

Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R

Control: Permitted Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 1 0 2 0 0 0 1 1 1 0 0 0 0 0 0

Volume Module:
Base Vol: 0 1486 31 99 1452 0 184 989 121 0 0 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 1486 31 99 1452 0 184 989 121 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 1486 31 99 1452 0 184 989 121 0 0 0
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: 0 1486 31 99 1452 0 184 989 121 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1486 31 99 1452 0 184 989 121 0 0 0
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 1486 31 99 1452 0 184 989 121 0 0 0

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 0.94 1.00 1.00 0.94
Lanes: 0.00 1.96 0.04 1.00 2.00 0.00 0.43 2.29 0.28 0.00 0.00 0.00
Final Sat.: 0 3331 69 1598 3400 0 725 3898 477 0 0 0

Capacity Analysis Module:
Vol/Sat: 0.00 0.45 0.45 0.06 0.43 0.00 0.11 0.25 0.25 0.00 0.00 0.00
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #20 Main St (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.776
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 47 Level Of Service: C

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
Lanes: 0 0 1 1 0 0 0 1 1 0 0 0 1 0

Volume Module:
Base Vol: 0 1470 64 0 1492 59 0 236 63 0 353 105
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 1470 64 0 1492 59 0 236 63 0 353 105
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 1470 64 0 1492 59 0 236 63 0 353 105
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: 0 1470 64 0 1492 59 0 236 63 0 353 105
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1470 64 0 1492 59 0 236 63 0 353 105
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 1470 64 0 1492 59 0 236 63 0 353 105

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: 0.00 1.92 0.08 0.00 1.92 0.08 0.00 0.79 0.21 0.00 0.77 0.23
Final Sat.: 0 3258 142 0 3271 129 0 1342 358 0 1310 390

Capacity Analysis Module:
Vol/Sat: 0.00 0.45 0.45 0.00 0.46 0.46 0.00 0.18 0.18 0.00 0.27 0.27
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #21 Main St (N/S) / 3rd St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.694
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 37 Level Of Service: B

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
Lanes: 0 0 1 1 0 0 0 1 1 0 1 0 0 1 0

Volume Module:
Base Vol: 0 1433 51 0 1464 67 53 191 50 48 226 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 1433 51 0 1464 67 53 191 50 48 226 47
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 1433 51 0 1464 67 53 191 50 48 226 47
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: 0 1433 51 0 1464 67 53 191 50 48 226 47
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 1433 51 0 1464 67 53 191 50 48 226 47
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 1433 51 0 1464 67 53 191 50 48 226 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 1.00 0.94 1.00 1.00
Lanes: 0.00 1.93 0.07 0.00 1.91 0.09 1.00 0.79 0.21 1.00 0.83 0.17
Final Sat.: 0 3283 117 0 3251 149 1598 1347 353 1598 1407 293

Capacity Analysis Module:
Vol/Sat: 0.00 0.44 0.44 0.00 0.45 0.45 0.03 0.14 0.14 0.03 0.16 0.16
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #22 Main St (N/S) / 1st St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 1.013
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: F

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: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 1 0 1 0 2 0 1 0 1 0 2 1 0

Volume Module:
Base Vol: 249 1199 111 221 1116 181 200 1413 110 139 1515 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: 249 1199 111 221 1116 181 200 1413 110 139 1515 90
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 249 1199 111 221 1116 181 200 1413 110 139 1515 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: 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: 249 1199 111 221 1116 181 200 1413 110 139 1515 90
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 249 1199 111 221 1116 181 200 1413 110 139 1515 90
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: 249 1199 111 221 1116 181 200 1413 110 139 1515 90

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 0.94 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 1.00 1.83 0.17 1.00 2.00 1.00 1.00 2.78 0.22 1.00 2.83 0.17
Final Sat.: 1598 3112 288 1598 3400 1598 1598 4732 368 1598 4814 286

Capacity Analysis Module:
Vol/Sat: 0.16 0.39 0.39 0.14 0.33 0.11 0.13 0.30 0.30 0.09 0.31 0.31
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #23 Bush St (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.462
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 22 Level Of Service: A

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
Lanes: 1 0 1 0 0 0 0 0 1 0 0 0 1 1 1 0

Volume Module:
Base Vol: 50 381 0 0 246 42 0 0 0 40 844 73
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: 50 381 0 0 246 42 0 0 0 40 844 73
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 50 381 0 0 246 42 0 0 0 40 844 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: 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: 50 381 0 0 246 42 0 0 0 40 844 73
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 50 381 0 0 246 42 0 0 0 40 844 73
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: 50 381 0 0 246 42 0 0 0 40 844 73

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00
Lanes: 1.00 1.00 0.00 0.00 0.85 0.15 0.00 0.00 0.00 0.12 2.65 0.23
Final Sat.: 1598 1700 0 0 1452 248 0 0 0 213 4498 389

Capacity Analysis Module:
Vol/Sat: 0.03 0.22 0.00 0.00 0.17 0.17 0.00 0.00 0.00 0.02 0.19 0.19
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #24 Bush St (N/S) / 5th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.560
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 27 Level Of Service: A

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
Lanes: 0 0 0 1 0 1 0 1 0 0 0 0

Volume Module:
Base Vol: 0 382 75 33 316 0 100 914 112 0 0 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: 0 382 75 33 316 0 100 914 112 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 382 75 33 316 0 100 914 112 0 0 0
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: 0 382 75 33 316 0 100 914 112 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 382 75 33 316 0 100 914 112 0 0 0
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: 0 382 75 33 316 0 100 914 112 0 0 0

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00 0.94 1.00 0.94
Lanes: 0.00 0.84 0.16 1.00 1.00 0.00 0.27 2.43 0.30 0.00 0.00 0.00
Final Sat.: 0 1421 279 1598 1700 0 453 4140 507 0 0 0

Capacity Analysis Module:
Vol/Sat: 0.00 0.27 0.27 0.02 0.19 0.00 0.06 0.22 0.22 0.00 0.00 0.00
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #25 Bush St (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.576
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 27 Level Of Service: A

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
Lanes: 1 0 0 1 0 1 0 0 1 0 0 0

Volume Module:
Base Vol: 23 369 53 72 266 70 16 279 32 22 309 49
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: 23 369 53 72 266 70 16 279 32 22 309 49
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 23 369 53 72 266 70 16 279 32 22 309 49
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: 23 369 53 72 266 70 16 279 32 22 309 49
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 23 369 53 72 266 70 16 279 32 22 309 49
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: 23 369 53 72 266 70 16 279 32 22 309 49

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 0.87 0.13 1.00 0.79 0.21 0.05 0.85 0.10 0.06 0.81 0.13
Final Sat.: 1598 1486 214 1598 1346 354 83 1450 166 98 1382 219

Capacity Analysis Module:
Vol/Sat: 0.01 0.25 0.25 0.05 0.20 0.20 0.01 0.19 0.19 0.01 0.22 0.22
Crit Moves: ****

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Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #26 Spurgeon St (N/S) / 1st St (E/W)

Average Delay (sec/veh): 0.8 Worst Case Level Of Service: C[18.7]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Stop Sign, Uncontrolled), Rights (Include), Lanes (0-3).

Volume Module table with 12 columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module table with 12 columns: Critical Gp, FollowUpTim.

Capacity Module table with 12 columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with 12 columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

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

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Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #27 French St (N/S) / Santa Ana Bl (E/W)

Average Delay (sec/veh): 5.6 Worst Case Level Of Service: C[24.0]

Table with 4 columns: Approach (North, South, East, West), Movement (L-T-R), Control (Stop Sign, Uncontrolled), Rights (Include), Lanes (0-3).

Volume Module table with 12 columns: Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, FinalVolume.

Critical Gap Module table with 12 columns: Critical Gp, FollowUpTim.

Capacity Module table with 12 columns: Cnflct Vol, Potent Cap., Move Cap., Volume/Cap.

Level of Service Module table with 12 columns: 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, ApproachLOS.

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

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Level of Service Computation Report

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

Intersection #28 French St (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.543
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level Of Service: A

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
Lanes: 0 0 1! 0 0 1 0 0 1 0 0 0 0 1 0 0 1

Volume Module:

Base Vol: 23 82 91 155 75 47 32 274 40 92 353 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: 23 82 91 155 75 47 32 274 40 92 353 78
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 23 82 91 155 75 47 32 274 40 92 353 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: 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: 23 82 91 155 75 47 32 274 40 92 353 78
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 23 82 91 155 75 47 32 274 40 92 353 78
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: 23 82 91 155 75 47 32 274 40 92 353 78

Saturation Flow Module:

Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 0.94 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.94
Lanes: 0.12 0.42 0.46 1.00 0.61 0.39 0.09 0.79 0.12 0.21 0.79 1.00
Final Sat.: 199 711 789 1598 1045 655 157 1346 197 351 1349 1598

Capacity Analysis Module:

Vol/Sat: 0.01 0.12 0.12 0.10 0.07 0.07 0.02 0.20 0.20 0.05 0.26 0.05
Crit Moves: **** **** **** ****

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Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #29 Lacy St (N/S) / Civic Center Dr (E/W)

Average Delay (sec/veh): 9.5 Worst Case Level Of Service: F[69.9]

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 1! 0 0 0 0 1! 0 0 0 0 1! 0 0

Volume Module:

Base Vol: 26 27 49 101 16 19 17 704 22 10 242 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: 26 27 49 101 16 19 17 704 22 10 242 81
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 26 27 49 101 16 19 17 704 22 10 242 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: 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: 26 27 49 101 16 19 17 704 22 10 242 81
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 26 27 49 101 16 19 17 704 22 10 242 81

Critical Gap Module:

Critical Gp: 7.1 6.5 6.2 7.1 6.5 6.2 4.1 xxxx xxxxx 4.1 xxxx xxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxx xxxxx 2.2 xxxx xxxxx

Capacity Module:

Cnflct Vol: 1069 1092 715 1090 1063 283 323 xxxx xxxxx 726 xxxx xxxxx
Potent Cap.: 201 216 434 195 225 761 1248 xxxx xxxxx 886 xxxx xxxxx
Move Cap.: 181 211 434 153 220 761 1248 xxxx xxxxx 886 xxxx xxxxx
Volume/Cap: 0.14 0.13 0.11 0.66 0.07 0.02 0.01 xxxx xxxxx 0.01 xxxx xxxxx

Level of Service Module:

2Way95thQ: xxxx xxxx xxxxx xxxx xxxx xxxxx 0.0 xxxx xxxxx 0.0 xxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx 7.9 xxxx xxxxx 9.1 xxxx xxxxx
LOS by Move: * * * * * A * * * A * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx 266 xxxxx xxxx 179 xxxxx xxxx xxxxx xxxxx xxxx xxxxx
SharedQueue:xxxxx 1.7 xxxxx xxxxx 4.9 xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx 26.8 xxxxx xxxxx 69.9 xxxxx xxxxx xxxxx xxxxx xxxx xxxxx
Shared LOS: * D * * F * * * * *
ApproachDel: 26.8 69.9 xxxxxx xxxxxx
ApproachLOS: D F * *

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

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Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #30 Lacy st (N/S) / Santa Ana Bl (E/W)

Average Delay (sec/veh): 12.5 Worst Case Level Of Service: F[179.1]

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 1 0 0 0 0 1 0 0 1 0

Volume Module:
Base Vol: 16 49 17 26 21 17 3 791 7 26 795 23
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: 16 49 17 26 21 17 3 791 7 26 795 23
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 16 49 17 26 21 17 3 791 7 26 795 23
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: 16 49 17 26 21 17 3 791 7 26 795 23
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 16 49 17 26 21 17 3 791 7 26 795 23

Critical Gap Module:
Critical Gp: 7.1 6.5 6.2 7.1 6.5 6.2 4.1 xxxx xxxxxx 4.1 xxxx xxxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxx xxxxxx 2.2 xxxx xxxxxx

Capacity Module:
Cnflct Vol: 1678 1671 795 1692 1663 807 818 xxxx xxxxxx 798 xxxx xxxxxx
Potent Cap.: 76 97 391 75 98 385 819 xxxx xxxxxx 833 xxxx xxxxxx
Move Cap.: 59 94 391 41 95 385 819 xxxx xxxxxx 833 xxxx xxxxxx
Volume/Cap: 0.27 0.52 0.04 0.64 0.22 0.04 0.00 xxxx xxxxxx 0.03 xxxx xxxxxx

Level of Service Module:
2Way95thQ: xxxx xxxx xxxxxx xxxx xxxx xxxxxx 0.0 xxxx xxxxxx 0.1 xxxx xxxxxx
Control Del:xxxxx xxxx xxxxxx xxxxxx xxxx xxxxxx 9.4 xxxx xxxxxx 9.5 xxxx xxxxxx
LOS by Move: * * * * * A * * A * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx 98 xxxxxx xxxx 71 xxxxxx xxxx xxxxxx xxxxxx xxxxxx xxxxxx
SharedQueue:xxxxx 4.6 xxxxxx xxxxxx 4.5 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Shrd ConDel:xxxxx 129 xxxxxx xxxxxx 179 xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Shared LOS: * F * * F * * * * * * * * * *
ApproachDel: 128.9 179.1 xxxxxxxx xxxxxxxx
ApproachLOS: F F * *

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

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Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #31 Lacy St (N/S) / Brown St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.250
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 8.1
Optimal Cycle: 0 Level Of Service: A

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 Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 0 0 0 0 1 0 0 0 1 0 0 0

Volume Module:
Base Vol: 78 74 65 7 40 16 9 19 11 22 34 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: 78 74 65 7 40 16 9 19 11 22 34 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 78 74 65 7 40 16 9 19 11 22 34 0
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: 78 74 65 7 40 16 9 19 11 22 34 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 78 74 65 7 40 16 9 19 11 22 34 0
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 74 65 7 40 16 9 19 11 22 34 0

Saturation Flow Module:
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: 0.36 0.34 0.30 0.11 0.64 0.25 0.23 0.49 0.28 0.39 0.61 0.00
Final Sat.: 312 296 260 93 529 212 177 374 217 291 450 0

Capacity Analysis Module:
Vol/Sat: 0.25 0.25 0.25 0.08 0.08 0.08 0.05 0.05 0.05 0.08 0.08 xxxxx
Crit Moves: **** * * * * *
Delay/Veh: 8.4 8.4 8.4 7.5 7.5 7.5 7.6 7.6 7.6 8.0 8.0 0.0
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 8.4 8.4 8.4 7.5 7.5 7.5 7.6 7.6 7.6 8.0 8.0 0.0
LOS by Move: A A A A A A A A A A A *
ApproachDel: 8.4 7.5 7.6 8.0
Delay Adj: 1.00 1.00 1.00 1.00
ApprAdjDel: 8.4 7.5 7.6 8.0
LOS by Appr: A A A A
AllWayAvgQ: 0.3 0.3 0.3 0.1 0.1 0.1 0.0 0.0 0.0 0.1 0.1 0.1

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

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Level of Service Computation Report

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

Intersection #32 Lacy St (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.751
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 44 Level Of Service: C

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
Lanes: 0 0 1 0 0 0 0 1 0 0 1 0 1 0 1 0 1

Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 0 0 0 0 1 0 0 1 0 1 0 1 0 1

Volume Module:

Base Vol: 52 92 80 65 37 19 17 687 30 175 705 125
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: 52 92 80 65 37 19 17 687 30 175 705 125
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 52 92 80 65 37 19 17 687 30 175 705 125
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: 52 92 80 65 37 19 17 687 30 175 705 125
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 52 92 80 65 37 19 17 687 30 175 705 125
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: 52 92 80 65 37 19 17 687 30 175 705 125

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 0.94 1.00 1.00 0.94 1.00 0.94
Lanes: 0.23 0.41 0.36 0.54 0.30 0.16 1.00 0.96 0.04 1.00 1.00 1.00
Final Sat.: 395 698 607 913 520 267 1598 1629 71 1598 1700 1598

Capacity Analysis Module:

Vol/Sat: 0.03 0.13 0.13 0.04 0.07 0.07 0.01 0.42 0.42 0.11 0.41 0.08
Crit Moves: **** **** **** ****

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Level of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #33 Lacy St (N/S) / 1st St (E/W)

Average Delay (sec/veh): 19.0 Worst Case Level Of Service: F[410.8]

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 1 0 0 0 0 1 0 0 1 0 3 0 0 0 0 2 1 0

Volume Module:
Base Vol: 0 0 0 11 0 151 216 1691 0 0 1734 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 11 0 151 216 1691 0 0 1734 47
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 0 0 11 0 151 216 1691 0 0 1734 47
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: 0 0 0 11 0 151 216 1691 0 0 1734 47
Reduct Vol: 0
FinalVolume: 0 0 0 11 0 151 216 1691 0 0 1734 47

Critical Gap Module:
Critical Gp: 7.5 6.5 6.9 6.8 6.5 6.9 4.1 xxxx xxxxx xxxxx xxxxx xxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxx xxxxx xxxxx xxxxx xxxxx

Capacity Module:

Cnflct Vol: 2701 3904 564 2753 3881 602 1781 xxxx xxxxx xxxxx xxxxx xxxxx
Potent Cap.: 10 3 474 16 4 448 353 xxxx xxxxx xxxxx xxxxx xxxxx
Move Cap.: 4 1 474 8 1 448 353 xxxx xxxxx xxxxx xxxxx xxxxx
Volume/Cap: 0.00 0.00 0.00 1.32 0.00 0.34 0.61 xxxx xxxxx xxxxx xxxxx xxxxx

Level of Service Module:

2Way95thQ: xxxx xxxx xxxxx xxxx xxxx xxxxx 3.9 xxxx xxxxx xxxxx xxxxx xxxxx
Control Del:xxxxx xxxx xxxxx xxxxx xxxx xxxxx 30.0 xxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: * * * * * D * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxx 0 xxxxx xxxx 98 xxxxx xxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx 12.8 xxxxx xxxxx xxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx 411 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * * * F * * * * *
ApproachDel: xxxxxx 410.8 xxxxxx xxxxxx
ApproachLOS: * * * * *

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

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Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #34 Santiago St (N/S) / Washington Av (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 1.458
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 143.1
Optimal Cycle: 0 Level Of Service: F

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 Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 0 1 1 0 1 0 0 0 0

Volume Module:
Base Vol: 94 588 251 30 444 155 333 222 42 95 171 46
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: 94 588 251 30 444 155 333 222 42 95 171 46
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 94 588 251 30 444 155 333 222 42 95 171 46
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: 94 588 251 30 444 155 333 222 42 95 171 46
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 94 588 251 30 444 155 333 222 42 95 171 46
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: 94 588 251 30 444 155 333 222 42 95 171 46

Saturation Flow Module:
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 0.56 0.37 0.07 0.30 0.55 0.15
Final Sat.: 382 403 438 379 400 434 231 154 29 121 217 58

Capacity Analysis Module:
Vol/Sat: 0.25 1.46 0.57 0.08 1.11 0.36 1.44 1.44 1.44 0.79 0.79 0.79
Crit Moves: ****
Delay/Veh: 15.2 243 21.4 13.0 108 15.5 236.9 237 236.9 38.6 38.6 38.6
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 15.2 243 21.4 13.0 108 15.5 236.9 237 236.9 38.6 38.6 38.6
LOS by Move: C F C B F C F F F E E E
ApproachDel: 160.3 80.3 236.9 38.6
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 160.3 80.3 236.9 38.6
LOS by Appr: F F F E
AllWayAvgQ: 0.3 25.9 1.3 0.1 10.7 0.5 25.9 25.9 25.9 2.9 2.9 2.9

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

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Level of Service Computation Report

2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #35 Santiago St (N/S) / Civic Center Dr (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 1.781
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 221.7
Optimal Cycle: 0 Level Of Service: F

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 Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 0 1 0 1 0 0 1 0 1 0

Volume Module:
Base Vol: 258 694 64 26 578 174 363 67 474 48 40 21
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: 258 694 64 26 578 174 363 67 474 48 40 21
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 258 694 64 26 578 174 363 67 474 48 40 21
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: 258 694 64 26 578 174 363 67 474 48 40 21
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 258 694 64 26 578 174 363 67 474 48 40 21
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: 258 694 64 26 578 174 363 67 474 48 40 21

Saturation Flow Module:
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 0.92 0.08 1.00 0.77 0.23 0.84 0.16 1.00 0.44 0.37 0.19
Final Sat.: 415 406 37 389 325 98 356 66 486 164 136 72

Capacity Analysis Module:
Vol/Sat: 0.62 1.71 1.71 0.07 1.78 1.78 1.02 1.02 0.97 0.29 0.29 0.29
Crit Moves: ****
Delay/Veh: 24.6 349 348.8 12.5 381 381.2 78.0 78.0 61.7 16.7 16.7 16.7
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 24.6 349 348.8 12.5 381 381.2 78.0 78.0 61.7 16.7 16.7 16.7
LOS by Move: C F F B F F F F C C C
ApproachDel: 266.5 368.9 69.4 16.7
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 266.5 368.9 69.4 16.7
LOS by Appr: F F F C
AllWayAvgQ: 1.5 41.6 41.6 0.1 43.4 43.4 7.8 7.8 7.0 0.4 0.4 0.4

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

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Level of Service Computation Report

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

Intersection #36 Santiago St (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.993
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: E

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

Volume Module:
Base Vol: 41 279 113 461 271 282 278 995 75 147 809 506
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: 41 279 113 461 271 282 278 995 75 147 809 506
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 41 279 113 461 271 282 278 995 75 147 809 506
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: 41 279 113 461 271 282 278 995 75 147 809 506
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 41 279 113 461 271 282 278 995 75 147 809 506
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: 41 279 113 461 271 282 278 995 75 147 809 506

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.86 0.14 1.00 2.00 1.00
Final Sat.: 1598 1700 1598 1598 1700 1598 1598 3162 238 1598 3400 1598

Capacity Analysis Module:
Vol/Sat: 0.03 0.16 0.07 0.29 0.16 0.18 0.17 0.31 0.31 0.09 0.24 0.32
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #40 Standard Av (N/S) / 1st St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.970
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: E

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
Lanes: 1 0 0 1 0 0 0 1 1 0 0 1 0 1 1 0

Volume Module:
Base Vol: 235 365 173 22 287 32 100 1594 98 119 1625 14
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: 235 365 173 22 287 32 100 1594 98 119 1625 14
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 235 365 173 22 287 32 100 1594 98 119 1625 14
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: 235 365 173 22 287 32 100 1594 98 119 1625 14
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 235 365 173 22 287 32 100 1594 98 119 1625 14
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: 235 365 173 22 287 32 100 1594 98 119 1625 14

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 1.00 1.00 1.00 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 1.00 0.68 0.32 0.06 0.85 0.09 1.00 1.88 0.12 1.00 1.98 0.02
Final Sat.: 1598 1153 547 110 1431 160 1598 3203 197 1598 3371 29

Capacity Analysis Module:
Vol/Sat: 0.15 0.32 0.32 0.01 0.20 0.20 0.06 0.50 0.50 0.07 0.48 0.48
Crit Moves: ****

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Level of Service Computation Report

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

Intersection #42 Grand Av (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 1.312
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: F

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 Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 2 1 0 1 0 2 0 2 2 0 1 0 1 0

Volume Module:
Base Vol: 300 2707 59 186 1425 833 452 240 509 109 246 124
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: 300 2707 59 186 1425 833 452 240 509 109 246 124
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 300 2707 59 186 1425 833 452 240 509 109 246 124
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: 300 2707 59 186 1425 833 452 240 509 109 246 124
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 300 2707 59 186 1425 833 452 240 509 109 246 124
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: 300 2707 59 186 1425 833 452 240 509 109 246 124

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 0.94 0.94 1.00 0.94 1.00 1.00 1.00
Lanes: 1.00 2.94 0.06 1.00 2.00 2.00 2.00 1.00 2.00 0.45 1.03 0.52
Final Sat.: 1598 4991 109 1598 3400 3196 3196 1700 3196 774 1746 880

Capacity Analysis Module:
Vol/Sat: 0.19 0.54 0.54 0.12 0.42 0.26 0.14 0.14 0.16 0.14 0.14 0.14
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project PM

Level of Service Computation Report

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

Intersection #43 Grand Av (N/S) / 4th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.841
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 62 Level Of Service: D

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: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 3 0 1 1 0 2 1 0 1 0 1 1 0 1 0 2 0 1

Volume Module:
Base Vol: 188 1351 98 162 967 102 208 713 102 296 927 202
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: 188 1351 98 162 967 102 208 713 102 296 927 202
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 188 1351 98 162 967 102 208 713 102 296 927 202
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: 188 1351 98 162 967 102 208 713 102 296 927 202
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 188 1351 98 162 967 102 208 713 102 296 927 202
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: 188 1351 98 162 967 102 208 713 102 296 927 202

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 1.00 0.94 1.00 0.94
Lanes: 1.00 3.00 1.00 1.00 2.71 0.29 1.00 1.75 0.25 1.00 2.00 1.00
Final Sat.: 1598 5100 1598 1598 4613 487 1598 2974 426 1598 3400 1598

Capacity Analysis Module:
Vol/Sat: 0.12 0.26 0.06 0.10 0.21 0.21 0.13 0.24 0.24 0.19 0.27 0.13
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project PM

Level of Service Computation Report

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

Intersection #44 Grand Av (N/S) / 1st St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.960
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: E

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: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 2 0 2 1 0 2 0 3 0 1 2 0 2 1 0 2 0 2 0 1

Volume Module:
Base Vol: 498 1900 185 122 1293 109 230 1467 297 284 1328 53
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: 498 1900 185 122 1293 109 230 1467 297 284 1328 53
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 498 1900 185 122 1293 109 230 1467 297 284 1328 53
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: 498 1900 185 122 1293 109 230 1467 297 284 1328 53
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 498 1900 185 122 1293 109 230 1467 297 284 1328 53
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: 498 1900 185 122 1293 109 230 1467 297 284 1328 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 0.94 0.94 1.00 1.00 0.94 1.00 0.94
Lanes: 2.00 2.73 0.27 2.00 3.00 1.00 2.00 2.49 0.51 2.00 2.00 1.00
Final Sat.: 3196 4647 453 3196 5100 1598 3196 4241 859 3196 3400 1598

Capacity Analysis Module:
Vol/Sat: 0.16 0.41 0.41 0.04 0.25 0.07 0.07 0.35 0.35 0.09 0.39 0.03
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project PM

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #45 Penn Way (NS) at I-5 SB Ramps (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.658
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 28.5
Optimal Cycle: 54 Level Of Service: C

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 Permitted Permitted
Rights: Include Include Include Owl
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 2 0 1 2 0 2 0 0 0 0 0 0 0 1 0 0 0 2

Volume Module:
Base Vol: 0 418 292 713 229 0 0 0 0 284 0 297
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: 0 418 292 713 229 0 0 0 0 284 0 297
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 418 292 713 229 0 0 0 0 284 0 297
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: 0 418 292 713 229 0 0 0 0 284 0 297
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 418 292 713 229 0 0 0 0 284 0 297
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: 0 418 292 713 229 0 0 0 0 284 0 297

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.95 0.85 0.92 0.95 1.00 1.00 1.00 1.00 0.77 1.00 0.75
Lanes: 0.00 2.00 1.00 2.00 2.00 0.00 0.00 0.00 0.00 1.00 0.00 2.00
Final Sat.: 0 3610 1615 3502 3610 0 0 0 0 1461 0 2842

Capacity Analysis Module:
Vol/Sat: 0.00 0.12 0.18 0.20 0.06 0.00 0.00 0.00 0.00 0.19 0.00 0.10
Crit Moves: ****

Green/Cycle: 0.00 0.27 0.27 0.31 0.31 0.00 0.00 0.00 0.00 0.30 0.00 0.61
Volume/Cap: 0.00 0.42 0.66 0.66 0.20 0.00 0.00 0.00 0.00 0.66 0.00 0.17
Delay/Veh: 0.0 30.0 35.7 31.4 25.5 0.0 0.0 0.0 0.0 34.5 0.0 8.8
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 30.0 35.7 31.4 25.5 0.0 0.0 0.0 0.0 34.5 0.0 8.8
LOS by Move: A C D C C A A A A C A A
HCM2kAvgQ: 0 6 9 11 3 0 0 0 0 9 0 2

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

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project PM

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #46 I-5 SB Ramps (NS) / Santa Ana Bl (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.615
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 29.7
Optimal Cycle: 50 Level Of Service: C

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 Split Phase Split Phase
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 0 0 0 2 0 0 0 1 2 0 3 0 0 0 0 0 2 1 0

Volume Module:
Base Vol: 0 0 0 351 0 190 509 870 0 0 1012 273
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 0 351 0 190 509 870 0 0 1012 273
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 351 0 190 509 870 0 0 1012 273
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: 0 0 0 351 0 190 509 870 0 0 1012 273
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 0 0 351 0 190 509 870 0 0 1012 273
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 0 0 351 0 190 509 870 0 0 1012 273

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 1.00 1.00 0.92 1.00 0.85 0.92 0.91 1.00 1.00 0.88 0.88
Lanes: 0.00 0.00 0.00 2.00 0.00 1.00 2.00 3.00 0.00 0.00 2.36 0.64
Final Sat.: 0 0 0 3502 0 1615 3502 5187 0 0 3954 1067

Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.10 0.00 0.12 0.15 0.17 0.00 0.00 0.26 0.26
Crit Moves: **** **
Green/Cycle: 0.00 0.00 0.00 0.19 0.00 0.19 0.27 0.27 0.00 0.00 0.42 0.42
Volume/Cap: 0.00 0.00 0.00 0.52 0.00 0.62 0.53 0.62 0.00 0.00 0.62 0.62
Delay/Veh: 0.0 0.0 0.0 37.1 0.0 40.7 31.5 32.6 0.0 0.0 23.5 23.5
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 0.0 0.0 37.1 0.0 40.7 31.5 32.6 0.0 0.0 23.5 23.5
LOS by Move: A A A D A D C C A A C C
HCM2kAvgQ: 0 0 0 6 0 6 7 9 0 0 12 12

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

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project PM

Level of Service Computation Report

2000 HCM Operations Method (Future Volume Alternative)

Intersection #47 I-5 NB Ramps (NS) / 17th St. (EW)

Cycle (sec): 100 Critical Vol./Cap.(X): 1.108
Loss Time (sec): 16 (Y+R=4.0 sec) Average Delay (sec/veh): 73.0
Optimal Cycle: 100 Level Of Service: E

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 Ignore Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 1 0 0 1 1 0 0 0 1 1 0 3 0 1 0 0 2 1 0

Volume Module:
Base Vol: 934 84 36 135 0 138 164 1548 458 0 2333 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: 934 84 36 135 0 138 164 1548 458 0 2333 111
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 934 84 36 135 0 138 164 1548 458 0 2333 111
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: 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 Volume: 934 84 36 135 0 138 164 1548 0 0 2333 111
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 934 84 36 135 0 138 164 1548 0 0 2333 111
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: 934 84 36 135 0 138 164 1548 0 0 2333 111

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 0.96 0.96 0.85 0.95 1.00 0.85 0.95 0.91 1.00 1.00 0.90 0.90
Lanes: 1.83 0.17 1.00 1.00 0.00 1.00 1.00 3.00 1.00 0.00 2.86 0.14
Final Sat.: 3333 300 1615 1805 0 1615 1805 5187 1900 0 4917 234

Capacity Analysis Module:
Vol/Sat: 0.28 0.28 0.02 0.07 0.00 0.09 0.09 0.30 0.00 0.00 0.47 0.47
Crit Moves: **** **
Green/Cycle: 0.25 0.25 0.25 0.08 0.00 0.08 0.08 0.51 0.00 0.00 0.43 0.43
Volume/Cap: 1.11 1.11 0.09 0.97 0.00 1.11 1.11 0.59 0.00 0.00 1.11 1.11
Delay/Veh: 101.4 101 28.6 112.9 0.0 158.9 151.9 17.4 0.0 0.0 84.6 84.6
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 101.4 101 28.6 112.9 0.0 158.9 151.9 17.4 0.0 0.0 84.6 84.6
LOS by Move: F F C F A F F B A A F F
HCM2kAvgQ: 26 26 1 8 0 9 10 12 0 0 42 42

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

Santa Ana Renaissance Specific Plan Traffic Study
2035 Without Project PM

Level of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #50 Mortimer (N/S) / 5th St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.973
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 33.5
Optimal Cycle: 0 Level Of Service: D

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 Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 0 1 0 0 0 1 0 0 0 0

Volume Module:
Base Vol: 0 218 7 7 34 12 592 104 61 13 0 56
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: 0 218 7 7 34 12 592 104 61 13 0 56
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 218 7 7 34 12 592 104 61 13 0 56
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: 0 218 7 7 34 12 592 104 61 13 0 56
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 218 7 7 34 12 592 104 61 13 0 56
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: 0 218 7 7 34 12 592 104 61 13 0 56

Saturation Flow Module:
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: 0.00 0.97 0.03 0.13 0.64 0.23 1.00 0.63 0.37 0.19 0.00 0.81
Final Sat.: 0 581 19 75 363 128 609 440 258 122 0 526

Capacity Analysis Module:
Vol/Sat: xxxx 0.38 0.38 0.09 0.09 0.09 0.97 0.24 0.24 0.11 xxxx 0.11
Crit Moves: **** **** ****
Delay/Veh: 0.0 12.3 12.3 9.8 9.8 9.8 53.2 9.4 9.4 8.9 0.0 8.9
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 12.3 12.3 9.8 9.8 9.8 53.2 9.4 9.4 8.9 0.0 8.9
LOS by Move: * B B A A A F A A A * A
ApproachDel: 12.3 9.8 43.7 8.9
Delay Adj: 1.00 1.00 1.00
ApprAdjDel: 12.3 9.8 43.7 8.9
LOS by Appr: B A E A
AllWayAvgQ: 0.6 0.6 0.6 0.1 0.1 0.1 7.5 0.3 0.3 0.1 0.1 0.1

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

APPENDIX H
2030 With Project Conditions Analysis Worksheets

Santa Ana Renaissance Specific Plan Traffic Study
2030 With Project AM

Scenario Report
Scenario: 2030WPAM
Command: 2030WP AM
Volume: 2030WPAM
Geometry: Future WP
Impact Fee: Default Impact Fee
Trip Generation: Default Trip Generation
Trip Distribution: Default Trip Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Santa Ana Renaissance Specific Plan Traffic Study
2030 With Project AM

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh	Del/ LOS	V/ Veh	
# 1 Flower St (NS) / Civic Center D	B	xxxxxx 0.678	B	xxxxxx 0.678	+ 0.000 V/C
# 2 Flower St (N/S) / Santa Ana Bl	A	xxxxxx 0.587	A	xxxxxx 0.587	+ 0.000 V/C
# 3 Parton St (E/W) / Santa Ana Bl	A	xxxxxx 0.274	A	xxxxxx 0.274	+ 0.000 V/C
# 4 Ross St (N/S) / Civic Center D	A	xxxxxx 0.538	A	xxxxxx 0.538	+ 0.000 V/C
# 5 Ross St (N/S) / Santa Ana Bl (	A	xxxxxx 0.476	A	xxxxxx 0.476	+ 0.000 V/C
# 6 Ross St (N/S) / 4th St (E/W)	B	10.9 0.000	B	10.9 0.000	+ 0.000 D/V
# 7 Broadway (N/S) / Civic Center	B	xxxxxx 0.634	B	xxxxxx 0.634	+ 0.000 V/C
# 8 Broadway (N/S) / Santa Ana Bl	A	xxxxxx 0.491	A	xxxxxx 0.491	+ 0.000 V/C
# 9 Broadway (N/S) / 5th St (E/W)	A	xxxxxx 0.354	A	xxxxxx 0.354	+ 0.000 V/C
# 10 Broadway (N/S) / 4th St (E/W)	A	xxxxxx 0.334	A	xxxxxx 0.334	+ 0.000 V/C
# 11 Broadway (N/S) / 3rd st (E/W)	A	xxxxxx 0.338	A	xxxxxx 0.338	+ 0.000 V/C
# 12 Broadway (N/S) / 1st St (E/W)	B	xxxxxx 0.654	B	xxxxxx 0.654	+ 0.000 V/C
# 13 Sycamore St (N/S) / Civic Cent	A	xxxxxx 0.439	A	xxxxxx 0.439	+ 0.000 V/C
# 14 Sycamore St (N/S) / Santa Ana	C	24.0 0.000	C	24.0 0.000	+ 0.000 D/V
# 15 Sycamore St (N/S) / 5th St (E/	C	16.0 0.000	C	16.0 0.000	+ 0.000 D/V
# 16 Sycamore St (N/S) / 4th St (E/	A	8.1 0.251	A	8.1 0.251	+ 0.000 V/C
# 17 Main St (N/S) / Civic Center D	C	xxxxxx 0.774	C	xxxxxx 0.774	+ 0.000 V/C
# 18 Main St (N/S) / Santa Ana Dr (	B	xxxxxx 0.666	B	xxxxxx 0.666	+ 0.000 V/C
# 19 Main St (N/S) / 5th St (E/W)	A	xxxxxx 0.511	A	xxxxxx 0.511	+ 0.000 V/C
# 20 Main St (N/S) / 4th St (E/W)	A	xxxxxx 0.555	A	xxxxxx 0.555	+ 0.000 V/C
# 21 Main St (N/S) / 3rd St (E/W)	A	xxxxxx 0.490	A	xxxxxx 0.490	+ 0.000 V/C
# 22 Main St (N/S) / 1st St (E/W)	C	xxxxxx 0.771	C	xxxxxx 0.771	+ 0.000 V/C
# 23 Bush St (N/S) / Santa Ana Bl (	A	xxxxxx 0.305	A	xxxxxx 0.305	+ 0.000 V/C
# 24 Bush St (N/S) / 5th St (E/W)	A	xxxxxx 0.242	A	xxxxxx 0.242	+ 0.000 V/C

Santa Ana Renaissance Specific Plan Traffic Study
2030 With Project AM

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh	Del/ LOS	V/ Veh	
# 25 Bush St (N/S) / 4th St (E/W)	A	xxxxxx 0.280	A	xxxxxx 0.280	+ 0.000 V/C
# 26 Spurgeon St (N/S) / 1st St (E/	B	10.5 0.000	B	10.5 0.000	+ 0.000 D/V
# 27 French St (N/S) / Santa Ana Bl	C	19.3 0.000	C	19.3 0.000	+ 0.000 D/V
# 28 French St (N/S) / 4th St (E/W)	A	xxxxxx 0.308	A	xxxxxx 0.308	+ 0.000 V/C
# 29 Lacy St (N/S) / Civic Center D	D	25.4 0.000	D	25.4 0.000	+ 0.000 D/V
# 30 Lacy st (N/S) / Santa Ana Bl (	D	31.1 0.000	D	31.1 0.000	+ 0.000 D/V
# 31 Lacy St (N/S) / Brown St (E/W)	A	7.3 0.114	A	7.3 0.114	+ 0.000 V/C
# 32 Lacy St (N/S) / 4th St (E/W)	A	xxxxxx 0.398	A	xxxxxx 0.398	+ 0.000 V/C
# 33 Lacy St (N/S) / 1st St (E/W)	D	32.5 0.000	D	32.5 0.000	+ 0.000 D/V
# 34 Santiago St (N/S) / Washington	C	16.3 0.683	C	16.3 0.683	+ 0.000 V/C
# 35 Santiago St (N/S) / Civic Cent	C	23.5 0.844	C	23.5 0.844	+ 0.000 V/C
# 36 Santiago St (N/S) / Santa Ana	A	xxxxxx 0.544	A	xxxxxx 0.544	+ 0.000 V/C
# 37 Santiago St (N/S) / Brown St (	B	12.1 0.000	B	12.1 0.000	+ 0.000 D/V
# 38 Santiago St (N/S) / 6th St (E/	B	11.3 0.000	B	11.3 0.000	+ 0.000 D/V
# 39 Santiago St (N/S) / 4th (E/W)	F	OVRFL 0.000	F	OVRFL 0.000	+ 0.000 D/V
# 40 Standard Av (N/S) / 1st St (E/	D	xxxxxx 0.825	D	xxxxxx 0.825	+ 0.000 V/C
# 41 U-24 (N/S) / Santa Ana Bl (E/W)	E	45.7 0.000	E	45.7 0.000	+ 0.000 D/V
# 42 Grand Av (N/S) / Santa Ana Bl	D	xxxxxx 0.877	D	xxxxxx 0.877	+ 0.000 V/C
# 43 Grand Av (N/S) / 4th St (E/W)	B	xxxxxx 0.664	B	xxxxxx 0.664	+ 0.000 V/C
# 44 Grand Av (N/S) / 1st St (E/W)	C	xxxxxx 0.724	C	xxxxxx 0.724	+ 0.000 V/C
# 45 Penn Way (NS) at I-5 SB Ramps	C	22.7 0.439	C	22.7 0.439	+ 0.000 D/V
# 46 I-5 SB Ramps (NS) / Santa Ana	C	28.7 0.524	C	28.7 0.524	+ 0.000 D/V
# 47 I-5 NB Ramps (NS) / 17th St. (	C	33.2 0.780	C	33.2 0.780	+ 0.000 D/V
# 48 I-5 NB Ramps (NS) / Grand Ave	C	20.6 0.625	C	20.6 0.625	+ 0.000 D/V
# 49 Mortimer (N/S) / Santa Ana Blv	C	21.8 0.000	C	21.8 0.000	+ 0.000 D/V

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Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh	Del/ LOS	V/ Veh	
# 50 Mortimer (N/S) / 5th St (E/W)	A	9.0 0.289	A	9.0 0.289	+ 0.000 V/C

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative) Intersection #1 Flower St (NS)/ Civic Center Dr (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.678 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 35 Level Of Service: B 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: Include Include Include Include Min. Green: 0 0 0 0 Lanes: 1 0 1 1 1 0 1 0 1 1 0 1 0 1 1 0 Volume Module: Base Vol: 156 689 163 116 634 180 133 531 158 141 499 58 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: 156 689 163 116 634 180 133 531 158 141 499 58 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Initial Fut: 156 689 163 116 634 180 133 531 158 141 499 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: 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: 156 689 163 116 634 180 133 531 158 141 499 58 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Reduced Vol: 156 689 163 116 634 180 133 531 158 141 499 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: 156 689 163 116 634 180 133 531 158 141 499 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 1.00 0.94 1.00 1.00 Lanes: 1.00 1.62 0.38 1.00 1.56 0.44 1.00 1.54 0.46 1.00 1.79 0.21 Final Sat.: 1598 2750 650 1598 2648 752 1598 2620 780 1598 3046 354 Capacity Analysis Module: Vol/Sat: 0.10 0.25 0.25 0.07 0.24 0.24 0.08 0.20 0.20 0.09 0.16 0.16 Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative) Intersection #2 Flower St (N/S) / Santa Ana Bl (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.587 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 28 Level Of Service: A 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 Lanes: 1 0 2 0 1 1 0 2 0 1 1 0 3 0 1 1 0 2 0 1 Volume Module: Base Vol: 65 957 59 164 850 80 88 494 153 82 332 119 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: 65 957 59 164 850 80 88 494 153 82 332 119 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Initial Fut: 65 957 59 164 850 80 88 494 153 82 332 119 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: 65 957 59 164 850 80 88 494 153 82 332 119 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Reduced Vol: 65 957 59 164 850 80 88 494 153 82 332 119 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: 65 957 59 164 850 80 88 494 153 82 332 119 Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00 0.94 Lanes: 1.00 2.00 1.00 1.00 2.00 1.00 1.00 2.00 1.00 1.00 2.00 1.00 Final Sat.: 1598 3400 1598 1598 3400 1598 1598 3400 1598 1598 3400 1598 Capacity Analysis Module: Vol/Sat: 0.04 0.28 0.04 0.10 0.25 0.05 0.06 0.10 0.10 0.05 0.10 0.07 Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative) Intersection #3 Parton St (E/W) / Santa Ana Bl (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.274 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 17 Level Of Service: A 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 Lanes: 0 0 1 1 0 0 1 1 0 2 1 0 1 0 2 1 0 Volume Module: Base Vol: 14 4 32 21 7 22 31 577 114 75 554 84 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: 14 4 32 21 7 22 31 577 114 75 554 84 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Initial Fut: 14 4 32 21 7 22 31 577 114 75 554 84 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: 14 4 32 21 7 22 31 577 114 75 554 84 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Reduced Vol: 14 4 32 21 7 22 31 577 114 75 554 84 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: 14 4 32 21 7 22 31 577 114 75 554 84 Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 Adjustment: 1.00 1.00 1.00 0.94 1.00 0.94 1.00 1.00 0.94 1.00 1.00 1.00 Lanes: 0.28 0.08 0.64 0.75 0.25 1.00 1.00 2.51 0.49 1.00 2.61 0.39 Final Sat.: 476 136 1068 1275 425 1598 1598 4259 841 1598 4429 671 Capacity Analysis Module: Vol/Sat: 0.01 0.03 0.03 0.01 0.02 0.01 0.02 0.14 0.14 0.05 0.13 0.13 Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative) Intersection #4 Ross St (N/S) / Civic Center Dr (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.538 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 25 Level Of Service: A 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 Lanes: 1 0 1 0 1 1 0 0 1 0 1 1 0 1 1 0 1 1 0 Volume Module: Base Vol: 92 197 67 64 218 56 48 578 97 66 762 51 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: 92 197 67 64 218 56 48 578 97 66 762 51 Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Initial Fut: 92 197 67 64 218 56 48 578 97 66 762 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: 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: 92 197 67 64 218 56 48 578 97 66 762 51 Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 Reduced Vol: 92 197 67 64 218 56 48 578 97 66 762 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: 92 197 67 64 218 56 48 578 97 66 762 51 Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 Adjustment: 0.94 1.00 0.94 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 0.80 0.20 1.00 1.71 0.29 1.00 1.87 0.13 Final Sat.: 1598 1700 1598 1598 1353 347 1598 2911 489 1598 3187 213 Capacity Analysis Module: Vol/Sat: 0.06 0.12 0.04 0.04 0.16 0.16 0.03 0.20 0.20 0.04 0.24 0.24 Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #5 Ross St (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.476
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 23 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Ignored Permitted Ignored Permitted Ignored Permitted Ignored
Rights: Include Include Include Include
Lanes: 1 0 1 0 1 1 1 0 2 0 1 1 1 0 3 0 1
Volume Module:
Base Vol: 28 160 64 59 170 108 76 557 23 209 447 101
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 Base: 28 160 64 59 170 108 76 557 23 209 447 101
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 28 160 64 59 170 108 76 557 23 209 447 101
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: 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 Volume: 28 160 64 59 170 108 76 557 0 209 447 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 28 160 64 59 170 108 76 557 0 209 447 0
PCE 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
MLF 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
FinalVolume: 28 160 64 59 170 108 76 557 0 209 447 0
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 0.94
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 2.00 1.00 1.00 3.00 1.00
Final Sat.: 1598 1700 1598 1598 1700 1598 1598 3400 1598 1598 5100 1598
Capacity Analysis Module:
Vol/Sat: 0.02 0.09 0.04 0.04 0.10 0.07 0.05 0.16 0.00 0.13 0.09 0.00
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #6 Ross St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.476
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 23 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 0 0 1 1 0 1 0 0 0 1 0 0 0 1
Volume Module:
Base Vol: 0 260 0 43 205 0 0 0 0 0 0 0 27 0 58
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 1.00 1.00
Initial Base: 0 260 0 43 205 0 0 0 0 0 0 0 27 0 58
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 260 0 43 205 0 0 0 0 0 0 0 27 0 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 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 1.00 1.00 1.00 1.00
PHF Volume: 0 260 0 43 205 0 0 0 0 0 0 0 27 0 58
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 260 0 43 205 0 0 0 0 0 0 0 27 0 58
Critical Gap Module:
Critical Gap: xxxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 6.4 xxxxx 6.2
FollowUpTim: xxxxxx xxxxx xxxxxx 2.2 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 3.5 xxxxx 3.3
Capacity Module:
Conflict Vol: xxxxx xxxxx xxxxxx 260 xxxxx xxxxxx xxxxx xxxxx xxxxxx 551 xxxxx 260
Potent Cap.: xxxxx xxxxx xxxxxx 1316 xxxxx xxxxxx xxxxx xxxxx xxxxxx 499 xxxxx 784
Move Cap.: xxxxx xxxxx xxxxxx 1316 xxxxx xxxxxx xxxxx xxxxx xxxxxx 486 xxxxx 784
Volume/Cap: xxxxx xxxxx xxxxx 0.03 xxxxx xxxxx xxxxx xxxxx xxxxx 0.06 xxxxx 0.07
Level Of Service Module:
Way55HQ: xxxxx xxxxx xxxxxx 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx 0.2 xxxxx 0.2
Control Del: xxxxxx xxxxx xxxxxx 7.8 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 12.8 xxxxx 10.0
LOS by Move: * * * * A * * * B * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue: xxxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Shrd Comb: xxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Shared LOS: *
ApproachDel: xxxxxx xxxxxx xxxxxx 10.9
ApproachLOS: B
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #7 Broadway (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.634
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 31 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Ignored Permitted Ignored Permitted Ignored Permitted Ignored
Rights: Include Include Include Include
Lanes: 1 0 2 0 1 1 1 0 2 0 1 1 0 1 1 1 0
Volume Module:
Base Vol: 97 539 54 130 693 260 148 433 70 43 662 108
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 Base: 97 539 54 130 693 260 148 433 70 43 662 108
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 97 539 54 130 693 260 148 433 70 43 662 108
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: 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 Volume: 97 539 0 130 693 0 148 433 70 43 662 108
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 97 539 0 130 693 0 148 433 70 43 662 108
PCE 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
MLF 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
FinalVolume: 97 539 0 130 693 0 148 433 70 43 662 108
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 0.94 1.00 0.94 1.00
Lanes: 1.00 2.00 1.00 1.00 2.00 1.00 1.00 1.72 0.28 1.00 1.72 0.28
Final Sat.: 1598 3400 1598 1598 3400 1598 1598 2927 473 1598 2923 477
Capacity Analysis Module:
Vol/Sat: 0.06 0.16 0.00 0.08 0.20 0.00 0.09 0.15 0.15 0.03 0.23 0.23
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #8 Broadway (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.491
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 23 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Ignored Permitted Ignored Permitted Ignored Permitted Ignored
Rights: Include Include Include Include
Lanes: 1 0 2 0 0 1 0 0 1 1 0 0 0 0 0 0 1 1 1 0
Volume Module:
Base Vol: 58 662 0 0 676 205 0 0 0 0 0 25 603 114
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 1.00 1.00 1.00 1.00 1.00 1.00
Initial Base: 58 662 0 0 676 205 0 0 0 0 0 25 603 114
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 58 662 0 0 676 205 0 0 0 0 0 25 603 114
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 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 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume: 58 662 0 0 676 205 0 0 0 0 0 25 603 114
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 58 662 0 0 676 205 0 0 0 0 0 25 603 114
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 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 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 58 662 0 0 676 205 0 0 0 0 0 25 603 114
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00 1.00 1.00 1.00 1.00 1.00
Lanes: 1.00 2.00 0.00 0.00 1.53 0.47 0.00 0.00 0.00 0.10 2.44 0.46
Final Sat.: 1598 3400 0 0 2609 791 0 0 0 172 4145 784
Capacity Analysis Module:
Vol/Sat: 0.04 0.19 0.00 0.00 0.26 0.26 0.00 0.00 0.00 0.01 0.15 0.15
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #9 Broadway (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.354
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 19 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Protected Include Permitted Include Permitted Include
Min. Green: 0
Lanes: 0 0 1 1 0 1 0 2 0 0 0 0 1 1 1 0 0 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 518 44 75 535 0 119 350 1 0 0 0 0 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 1.00 1.00
Initial Base: 0 518 44 75 535 0 119 350 1 0 0 0 0 0
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 518 44 75 535 0 119 350 1 0 0 0 0 0
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 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 1.00 1.00
PHF Volume: 0 518 44 75 535 0 119 350 1 0 0 0 0 0
Reduc Vol: 0
Reduced Vol: 0 518 44 75 535 0 119 350 1 0 0 0 0 0
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 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 1.00 1.00
FinalVolume: 0 518 44 75 535 0 119 350 1 0 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00 0.94 1.00 0.94 1.00 1.00
Lanes: 0.00 1.84 0.16 1.00 2.00 0.00 0.76 2.23 0.01 0.00 0.00 0.00 0.00
Final Sat.: 0 3134 266 1598 3400 0 1291 3798 11 0 0 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.00 0.17 0.17 0.05 0.16 0.00 0.07 0.09 0.09 0.00 0.00 0.00 0.00
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #10 Broadway (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.334
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 18 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Protected Include Permitted Include Permitted Include
Min. Green: 0
Lanes: 1 0 1 1 0 1 0 1 1 0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0
Volume Module:
Base Vol: 14 490 23 12 464 79 24 47 30 40 105 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 1.00 1.00
Initial Base: 14 490 23 12 464 79 24 47 30 40 105 28
Added Vol: 0
PasserByVol: 0
Initial Fut: 14 490 23 12 464 79 24 47 30 40 105 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 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 1.00 1.00
PHF Volume: 14 490 23 12 464 79 24 47 30 40 105 28
Reduc Vol: 0
Reduced Vol: 14 490 23 12 464 79 24 47 30 40 105 28
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 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 1.00 1.00
FinalVolume: 14 490 23 12 464 79 24 47 30 40 105 28
Saturation Flow Module:
Sat/Lane: 1700 1700 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 0.94 1.00 1.00 1.00 1.00
Lanes: 1.00 1.91 0.09 1.00 1.71 0.29 0.24 0.46 0.30 0.23 0.61 0.16
Final Sat.: 1598 3248 152 1598 2905 495 404 791 505 393 1032 275
Capacity Analysis Module:
Vol/Sat: 0.01 0.15 0.15 0.01 0.16 0.16 0.01 0.06 0.06 0.02 0.10 0.10
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #11 Broadway (N/S) / 3rd St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.338
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 18 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Protected Include Permitted Include Permitted Include
Min. Green: 0
Lanes: 1 0 0 1 0 1 0 1 0 1 0 1 0 0 1 0 1 0 0 1 0 1 0 1 0 1 0
Volume Module:
Base Vol: 24 377 8 24 355 21 12 51 18 10 37 18
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 Base: 24 377 8 24 355 21 12 51 18 10 37 18
Added Vol: 0
PasserByVol: 0
Initial Fut: 24 377 8 24 355 21 12 51 18 10 37 18
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 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 1.00 1.00
PHF Volume: 24 377 8 24 355 21 12 51 18 10 37 18
Reduc Vol: 0
Reduced Vol: 24 377 8 24 355 21 12 51 18 10 37 18
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 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 1.00 1.00
FinalVolume: 24 377 8 24 355 21 12 51 18 10 37 18
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00 0.94 1.00 1.00 1.00 1.00
Lanes: 1.00 0.98 0.02 1.00 1.00 1.00 1.00 0.74 0.26 1.00 0.67 0.33
Final Sat.: 1598 1665 35 1598 1700 1598 1598 1257 443 1598 1144 556
Capacity Analysis Module:
Vol/Sat: 0.02 0.23 0.23 0.02 0.21 0.01 0.01 0.04 0.04 0.01 0.03 0.03
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #12 Broadway (N/S) / 1st St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.654
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 33 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Protected Include Protected Include Protected Include Protected Include
Min. Green: 0
Lanes: 1 0 1 0 1 1 1 0 1 0 1 1 0 2 1 0 1 0 2 1 0 1 0 2 1 0 1 0
Volume Module:
Base Vol: 59 340 102 64 345 78 187 1343 69 140 939 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 1.00 1.00
Initial Base: 59 340 102 64 345 78 187 1343 69 140 939 63
Added Vol: 0
PasserByVol: 0
Initial Fut: 59 340 102 64 345 78 187 1343 69 140 939 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 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 1.00 1.00
PHF Volume: 59 340 102 64 345 78 187 1343 69 140 939 63
Reduc Vol: 0
Reduced Vol: 59 340 102 64 345 78 187 1343 69 140 939 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 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 1.00 1.00
FinalVolume: 59 340 102 64 345 78 187 1343 69 140 939 63
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 1.00 0.94 1.00 1.00 0.94 1.00 1.00 1.00
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 2.85 0.15 1.00 2.81 0.19
Final Sat.: 1598 1700 1598 1598 1700 1598 1598 4851 249 1598 4779 321
Capacity Analysis Module:
Vol/Sat: 0.04 0.20 0.06 0.04 0.20 0.05 0.12 0.28 0.28 0.09 0.20 0.20
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM Level Of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative) Intersection #13 Sycamore St (N/S) / Civic Center Dr (E/W)

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM Level Of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative) Intersection #14 Sycamore St (N/S) / Santa Ana Bl (E/W)

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM Level Of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative) Intersection #15 Sycamore St (N/S) / 5th St (E/W)

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM Level Of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative) Intersection #16 Sycamore St (N/S) / 4th St (E/W)

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #17 Main St (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.774
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 47 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module:
Base Vol: 183 963 85 99 1014 189 94 432 131 64 612 58
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 Base: 183 963 85 99 1014 189 94 432 131 64 612 58
Added Vol: 0
PasserByVol: 0
Initial Fut: 183 963 85 99 1014 189 94 432 131 64 612 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: 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: 183 963 85 99 1014 189 94 432 131 64 612 58
Reduct Vol: 0
Reduced Vol: 183 963 85 99 1014 189 94 432 131 64 612 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: 183 963 85 99 1014 189 94 432 131 64 612 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 1.00 0.94 1.00 1.00
Lanes: 1.00 1.84 0.16 1.00 1.69 0.31 1.00 1.53 0.47 1.00 1.83 0.17
Final Sat.: 1598 3124 276 1598 2866 534 1598 2609 791 1598 3106 294
Capacity Analysis Module:
Vol/Sat: 0.11 0.31 0.31 0.06 0.35 0.35 0.06 0.17 0.17 0.04 0.20 0.20
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #18 Main St (N/S) / Santa Ana Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.666
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 34 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 2 0 0 0 0 1 1 0 0 0 0 0 0 0 0 1 1 1 0
Volume Module:
Base Vol: 68 1034 0 0 1128 90 0 0 0 66 955 75
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 Base: 68 1034 0 0 1128 90 0 0 0 66 955 75
Added Vol: 0
PasserByVol: 0
Initial Fut: 68 1034 0 0 1128 90 0 0 0 66 955 75
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: 68 1034 0 0 1128 90 0 0 0 66 955 75
Reduct Vol: 0
Reduced Vol: 68 1034 0 0 1128 90 0 0 0 66 955 75
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: 68 1034 0 0 1128 90 0 0 0 66 955 75
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 1.00 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00
Lanes: 1.00 2.00 0.00 0.00 1.85 0.15 0.00 0.00 0.00 0.18 2.61 0.21
Final Sat.: 1598 3400 0 0 3149 251 0 0 0 307 4444 349
Capacity Analysis Module:
Vol/Sat: 0.04 0.30 0.00 0.00 0.36 0.36 0.00 0.00 0.00 0.04 0.21 0.21
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #19 Main St (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.511
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 24 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Protected Include Permitted Include Permitted Include
Rights: Include Include Include Include
Min. Green: 0 0 1 1 0 1 0 2 0 0 0 1 1 1 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 1 0 2 0 0 0 0 1 1 1 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 1008 45 69 1048 0 72 448 30 0 0 0 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 Base: 0 1008 45 69 1048 0 72 448 30 0 0 0 0
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 1008 45 69 1048 0 72 448 30 0 0 0 0
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: 0 1008 45 69 1048 0 72 448 30 0 0 0 0
Reduct Vol: 0
Reduced Vol: 0 1008 45 69 1048 0 72 448 30 0 0 0 0
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 1008 45 69 1048 0 72 448 30 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00 0.94 1.00 1.00
Lanes: 0.00 1.91 0.09 1.00 2.00 0.00 0.39 2.45 0.16 0.00 0.00 0.00
Final Sat.: 0 3255 145 1598 3400 0 668 4154 278 0 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.00 0.31 0.31 0.04 0.31 0.00 0.04 0.11 0.11 0.00 0.00 0.00
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #20 Main St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.555
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 26 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Rights: Include Include Include Include
Min. Green: 0 0 1 1 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 0 0 1 1 0 0 0 0 0 1 0 0 0 0 1 0 0
Volume Module:
Base Vol: 0 960 5 0 1153 20 0 107 35 0 230 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 Base: 0 960 5 0 1153 20 0 107 35 0 230 42
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 960 5 0 1153 20 0 107 35 0 230 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: 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: 0 960 5 0 1153 20 0 107 35 0 230 42
Reduct Vol: 0
Reduced Vol: 0 960 5 0 1153 20 0 107 35 0 230 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: 0 960 5 0 1153 20 0 107 35 0 230 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 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 0.00 1.99 0.01 0.00 1.97 0.03 0.00 0.75 0.25 0.00 0.85 0.15
Final Sat.: 0 3382 18 0 3242 58 0 1281 419 0 1438 263
Capacity Analysis Module:
Vol/Sat: 0.00 0.28 0.28 0.00 0.34 0.35 0.00 0.08 0.08 0.00 0.16 0.16
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #21 Main St (N/S) / 3rd St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.490
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 23 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 0 0 1 1 0 1 0 0 1 0 1 0 0 1 0 0
Volume Module:
Base Vol: 0 945 15 0 1192 23 39 95 32 13 73 13
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: 0 945 15 0 1192 23 39 95 32 13 73 13
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 945 15 0 1192 23 39 95 32 13 73 13
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: 0 945 15 0 1192 23 39 95 32 13 73 13
Reduct Vol: 0
Reduced Vol: 0 945 15 0 1192 23 39 95 32 13 73 13
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: 0 945 15 0 1192 23 39 95 32 13 73 13
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: 0.00 1.97 0.03 0.00 1.96 0.04 1.00 0.75 0.25 1.00 0.85 0.15
Final Sat.: 0 3347 53 0 3336 64 1598 1272 428 1598 1443 257
Capacity Analysis Module:
Vol/Sat: 0.00 0.28 0.28 0.00 0.36 0.36 0.02 0.07 0.07 0.01 0.05 0.05
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #22 Main St (N/S) / 1st St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.771
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 47 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 1 0 1 0 2 0 1 1 0 2 1 0 1 0 2 1 0 1 0 2 1 0
Volume Module:
Base Vol: 166 756 78 186 911 99 126 1428 110 93 957 75
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: 166 756 78 186 911 99 126 1428 110 93 957 75
Added Vol: 0
PasserByVol: 0
Initial Fut: 166 756 78 186 911 99 126 1428 110 93 957 75
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: 166 756 78 186 911 99 126 1428 110 93 957 75
Reduct Vol: 0
Reduced Vol: 166 756 78 186 911 99 126 1428 110 93 957 75
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: 166 756 78 186 911 99 126 1428 110 93 957 75
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 1.81 0.19 1.00 2.00 1.00 1.00 2.79 0.21 1.00 2.78 0.22
Final Sat.: 1598 3082 318 1598 3400 1598 1598 4735 365 1598 4729 371
Capacity Analysis Module:
Vol/Sat: 0.10 0.25 0.25 0.12 0.27 0.06 0.08 0.30 0.30 0.06 0.20 0.20
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #23 Bush St (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.305
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 17 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 0 0 0 0 0 1 0 0 0 0 0 0 1 1 1 1 0 0
Volume Module:
Base Vol: 23 135 0 0 95 37 0 0 0 24 720 89
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: 23 135 0 0 95 37 0 0 0 24 720 89
Added Vol: 0
PasserByVol: 0
Initial Fut: 23 135 0 0 95 37 0 0 0 24 720 89
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: 23 135 0 0 95 37 0 0 0 24 720 89
Reduct Vol: 0
Reduced Vol: 23 135 0 0 95 37 0 0 0 24 720 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: 23 135 0 0 95 37 0 0 0 24 720 89
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 0.00 0.00 0.72 0.28 0.00 0.00 0.00 0.09 2.59 0.32
Final Sat.: 1598 1700 0 0 1223 477 0 0 0 147 4408 545
Capacity Analysis Module:
Vol/Sat: 0.01 0.08 0.00 0.00 0.08 0.08 0.00 0.00 0.00 0.01 0.16 0.16
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #24 Bush St (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.242
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 16 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 0 1 0 1 0 1 0 0 0 0 1 1 1 0 0 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 134 34 30 102 0 24 339 14 0 0 0 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: 0 134 34 30 102 0 24 339 14 0 0 0 0
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 134 34 30 102 0 24 339 14 0 0 0 0
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: 0 134 34 30 102 0 24 339 14 0 0 0 0
Reduct Vol: 0
Reduced Vol: 0 134 34 30 102 0 24 339 14 0 0 0 0
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: 0 134 34 30 102 0 24 339 14 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 1.00 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 0.00 0.80 0.20 1.00 1.00 0.00 0.19 2.70 0.11 0.00 0.00 0.00
Final Sat.: 0 1356 244 1598 1700 0 325 4586 189 0 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.00 0.10 0.10 0.10 0.02 0.06 0.00 0.01 0.07 0.07 0.00 0.00 0.00
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM Level Of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative) Intersection #25 Bush St (N/S) / 4th St (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.280 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 17 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM Level Of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative) Intersection #26 Spurgeon St (N/S) / 1st St (E/W) Average Delay (sec/veh): 0.1 Worst Case Level Of Service: B[10.5]

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM Level Of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative) Intersection #27 French St (N/S) / Santa Ana Bl (E/W) Average Delay (sec/veh): 2.9 Worst Case Level Of Service: C[19.3]

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM Level Of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative) Intersection #28 French St (N/S) / 4th St (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.308 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 18 Level Of Service: A

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #29 Lacy St (N/S) / Civic Center Dr (E/W)
Average Delay (sec/veh): 3.5 Worst Case Level Of Service: D [25.4]
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 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #30 Lacy St (N/S) / Santa Ana Bl (E/W)
Average Delay (sec/veh): 3.3 Worst Case Level Of Service: D [31.1]
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 1 0 0 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)
Intersection #31 Lacy St (N/S) / Brown St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.114
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 7.3
Optimal Cycle: 20 Level Of Service: A
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 Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0
Lanes: 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 1 0 0 0

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM

Level Of Service Computation Report
ICU 1 (Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #32 Lacy St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.398
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 20 Level Of Service: A
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
Lanes: 0 0 1 0 0 0 0 0 1 0 0 1 0 0 1 0 1 0 1 0 1 0 1

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #37 Santiago St (N/S) / Brown St (E/W)
Average Delay (sec/veh): 3.6 Worst Case Level Of Service: B(12.1)
Approach: North Bound South Bound East Bound West Bound
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 1 1 0 0 1 1 1 0 1 0 0 1 0 0 0 0 0 0

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #38 Santiago St (N/S) / 6th St (E/W)
Average Delay (sec/veh): 3.9 Worst Case Level Of Service: B(11.3)
Approach: North Bound South Bound East Bound West Bound
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 1 1 0 0 1 1 1 0 1 0 0 0 1 0 0 0 0 0

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #39 Santiago St (N/S) / 4th (E/W)
Average Delay (sec/veh): OVERFLOW Worst Case Level Of Service: F(XXXXXX)
Approach: North Bound South Bound East Bound West Bound
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 1 1 0 1 0 2 1 0 0 1 0 1 0 0 1 0 1 0

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #40 Standard Av (N/S) / 1st St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.825
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): XXXXXX
Optimal Cycle: 58 Level Of Service: D
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Lanes: 1 0 0 1 0 0 0 1 1 0 0 1 0 1 1 0 1 0 1 1 0

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM. Level Of Service Computation Report. 2000 HCM Operations Method (Future Volume Alternative). Intersection #45 Penn Way (NS) at I-5 SB Ramps (EW). Cycle (sec): 100. Critical Vol./Cap.(X): 0.439. Loss Time (sec): 12 (Y+R=4.0 sec). Average Delay (sec/veh): 22.7. Optimal Cycle: 37. Level Of Service: C. Approach: North Bound, South Bound, East Bound, West Bound. Control: Split Phase, Split Phase, Permitted, Permitted. Rights: Include, Include, Include, Include. Lanes: 0 0 2 0 1 2 0 2 0 0 0 0 0 0 0 0 0 0 2. Volume Module: Base Vol: 0 181 82 647 59 0 0 0 0 220 0 219. 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: 0 181 82 647 59 0 0 0 0 220 0 219. Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. Initial Fut: 0 181 82 647 59 0 0 0 0 220 0 219. 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: 0 181 82 647 59 0 0 0 0 220 0 219. Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. Reduced Vol: 0 181 82 647 59 0 0 0 0 220 0 219. 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: 0 181 82 647 59 0 0 0 0 220 0 219. Saturation Flow Module: Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900. Adjustment: 1.00 0.95 0.85 0.92 0.95 1.00 1.00 1.00 1.00 0.77 1.00 0.75. Lanes: 0.00 2.00 1.00 2.00 2.00 0.00 0.00 0.00 0.00 1.00 0.00 2.00. Final Sat.: 0 3610 1615 3502 3610 0 0 0 0 1461 0 2842. Capacity Analysis Module: Vol/Sat: 0.00 0.05 0.05 0.18 0.02 0.00 0.00 0.00 0.00 0.15 0.00 0.08. Crit Moves: ****. Green/Cycle: 0.00 0.12 0.12 0.42 0.42 0.00 0.00 0.00 0.00 0.34 0.00 0.76. Volume/Cap: 0.00 0.43 0.44 0.44 0.04 0.00 0.00 0.00 0.00 0.44 0.00 0.10. Delay/Veh: 0.0 41.9 42.8 20.8 17.0 0.0 0.0 0.0 0.0 26.0 0.0 3.0. User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. AdjDel/Veh: 0.0 41.9 42.8 20.8 17.0 0.0 0.0 0.0 0.0 26.0 0.0 3.0. LOS by Move: A D C B A A A A C A A C. HCM2kAvgQ: 0 3 3 7 1 0 0 0 0 5 0 1. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM. Level Of Service Computation Report. 2000 HCM Operations Method (Future Volume Alternative). Intersection #46 I-5 SB Ramps (NS) / Santa Ana Bl (EW). Cycle (sec): 100. Critical Vol./Cap.(X): 0.524. Loss Time (sec): 12 (Y+R=4.0 sec). Average Delay (sec/veh): 28.7. Optimal Cycle: 42. Level Of Service: C. Approach: North Bound, South Bound, East Bound, West Bound. Control: Split Phase, Split Phase, Split Phase, Split Phase. Rights: Include, Include, Include, Include. Lanes: 0 0 0 0 0 2 0 0 0 1 2 0 3 0 0 0 0 0 2 1 0. Volume Module: Base Vol: 0 0 0 432 0 101 295 639 0 0 922 166. 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 0 432 0 101 295 639 0 0 922 166. Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. Initial Fut: 0 0 0 432 0 101 295 639 0 0 922 166. 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: 0 0 0 432 0 101 295 639 0 0 922 166. Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. Reduced Vol: 0 0 0 432 0 101 295 639 0 0 922 166. 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 0 0 432 0 101 295 639 0 0 922 166. Saturation Flow Module: Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900. Adjustment: 1.00 1.00 1.00 0.92 1.00 0.85 0.92 0.91 1.00 1.00 0.89 0.89. Lanes: 0.00 0.00 0.00 2.00 0.00 1.00 2.00 3.00 0.00 0.00 2.54 0.46. Final Sat.: 0 0 0 3502 0 1615 3502 5187 0 0 4295 773. Capacity Analysis Module: Vol/Sat: 0.00 0.00 0.00 0.12 0.00 0.06 0.08 0.12 0.00 0.00 0.21 0.21. Crit Moves: ****. Green/Cycle: 0.00 0.00 0.00 0.24 0.00 0.24 0.24 0.24 0.00 0.00 0.41 0.41. Volume/Cap: 0.00 0.00 0.00 0.52 0.00 0.27 0.36 0.52 0.00 0.00 0.52 0.52. Delay/Veh: 0 0 0 34.0 0 0 31.6 32.3 33.8 0 0 0 22.4 22.4. User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. AdjDel/Veh: 0.0 0.0 0.0 34.0 0.0 31.6 32.3 33.8 0.0 0.0 22.4 22.4. LOS by Move: A A A A C A C A C A A C A C. HCM2kAvgQ: 0 0 0 6 0 3 4 7 0 0 9 9. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM. Level Of Service Computation Report. 2000 HCM Operations Method (Future Volume Alternative). Intersection #47 I-5 NB Ramps (NS) / 17th St. (EW). Cycle (sec): 100. Critical Vol./Cap.(X): 0.780. Loss Time (sec): 16 (Y+R=4.0 sec). Average Delay (sec/veh): 33.2. Optimal Cycle: 82. Level Of Service: C. Approach: North Bound, South Bound, East Bound, West Bound. Control: Split Phase, Split Phase, Protected, Protected. Rights: Include, Include, Ignore, Include. Lanes: 1 1 0 0 1 1 0 0 0 1 1 0 3 0 1 0 0 2 1 0. Volume Module: Base Vol: 665 85 38 37 0 197 130 913 271 0 1268 48. 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: 665 85 38 37 0 197 130 913 271 0 1268 48. Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. Initial Fut: 665 85 38 37 0 197 130 913 271 0 1268 48. 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: 665 85 38 37 0 197 130 913 0 0 1268 48. Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. Reduced Vol: 665 85 38 37 0 197 130 913 0 0 1268 48. 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: 665 85 38 37 0 197 130 913 0 0 1268 48. Saturation Flow Module: Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900. Adjustment: 0.96 0.96 0.85 0.95 1.00 0.85 0.95 0.91 1.00 1.00 0.91 0.91. Lanes: 1.77 0.23 1.00 1.00 0.00 1.00 1.00 3.00 1.00 0.00 2.89 0.11. Final Sat.: 3228 413 1615 1805 0 1615 1805 5187 1900 0 4973 188. Capacity Analysis Module: Vol/Sat: 0.21 0.21 0.02 0.02 0.00 0.12 0.07 0.18 0.00 0.00 0.25 0.25. Crit Moves: ****. Green/Cycle: 0.26 0.26 0.26 0.16 0.00 0.16 0.09 0.42 0.00 0.00 0.33 0.33. Volume/Cap: 0.78 0.78 0.09 0.13 0.00 0.78 0.78 0.42 0.00 0.00 0.78 0.78. Delay/Veh: 38.2 38.2 27.8 36.5 0.0 54.9 65.0 20.6 0.0 0.0 32.8 32.8. User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. AdjDel/Veh: 38.2 38.2 27.8 36.5 0.0 54.9 65.0 20.6 0.0 0.0 32.8 32.8. LOS by Move: D D C D A D E C A A C A C. HCM2kAvgQ: 13 13 1 1 0 8 6 7 0 0 15 15. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project AM. Level Of Service Computation Report. 2000 HCM Operations Method (Future Volume Alternative). Intersection #48 I-5 NB Ramps (NS) / Grand Ave (EW). Cycle (sec): 100. Critical Vol./Cap.(X): 0.625. Loss Time (sec): 12 (Y+R=4.0 sec). Average Delay (sec/veh): 20.6. Optimal Cycle: 51. Level Of Service: C. Approach: North Bound, South Bound, East Bound, West Bound. Control: Protected, Protected, Split Phase, Split Phase. Rights: Ignore, Include, Include, Include. Lanes: 0 0 3 0 1 1 0 3 0 0 0 0 0 0 0 0 2 0 0 0 1. Volume Module: Base Vol: 0 851 482 34 1642 0 0 0 0 817 0 139. 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: 0 851 482 34 1642 0 0 0 0 817 0 139. Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. Initial Fut: 0 851 482 34 1642 0 0 0 0 817 0 139. User Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. PHF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. PHF Volume: 0 851 0 34 1642 0 0 0 0 817 0 139. Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. Reduced Vol: 0 851 0 34 1642 0 0 0 0 817 0 139. PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. FinalVolume: 0 851 0 34 1642 0 0 0 0 817 0 139. Saturation Flow Module: Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900. Adjustment: 1.00 0.91 1.00 1.00 0.95 0.91 1.00 1.00 1.00 1.00 0.92 1.00 0.85. Lanes: 0.00 3.00 1.00 1.00 3.00 0.00 0.00 0.00 0.00 2.00 0.00 1.00. Final Sat.: 0 5187 1900 1805 5187 0 0 0 0 3502 0 1615. Capacity Analysis Module: Vol/Sat: 0.00 0.16 0.00 0.02 0.32 0.00 0.00 0.00 0.00 0.23 0.00 0.09. Crit Moves: ****. Green/Cycle: 0.00 0.45 0.00 0.05 0.51 0.00 0.00 0.00 0.00 0.37 0.00 0.37. Volume/Cap: 0.00 0.36 0.00 0.36 0.62 0.00 0.00 0.00 0.00 0.62 0.00 0.23. Delay/Veh: 0.0 17.9 0.0 48.1 18.3 0.0 0.0 0.0 0.0 26.6 0.0 21.7. User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. AdjDel/Veh: 0.0 17.9 0.0 48.1 18.3 0.0 0.0 0.0 0.0 26.6 0.0 21.7. LOS by Move: A B A D B A A A A C A C A C. HCM2kAvgQ: 0 6 0 1 14 0 0 0 0 11 0 3. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study
2030 With Project AM

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #49 Mortimer (N/S) / Santa Ana Blvd (E/W)

Average Delay (sec/veh): 2.1 Worst Case Level Of Service: C [21.8]

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 0 1	0 0 1 1 0 0	0 0 0 0 0 0	1 0 0 0 1 0

Volume Module:

Base Vol:	0 0 193	3 4 1	0 0 0	0 31 908	3
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 0 193	3 4 1	0 0 0	0 31 908	3
Added Vol:	0 0 0	0 0 0	0 0 0	0 0 0	0
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0	0
Initial Fut:	0 0 193	3 4 1	0 0 0	0 31 908	3
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	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	1.00
PHF Volume:	0 0 193	3 4 1	0 0 0	0 31 908	3
Reduct Vol:	0 0 0	0 0 0	0 0 0	0 0 0	0
FinalVolume:	0 0 193	3 4 1	0 0 0	0 31 908	3

Critical Gap Module:

Critical Gap:	xxxxx xxxxx	6.2 7.1 6.5	6.2 xxxxx xxxxx xxxxx	4.1 xxxxx xxxxx
FollowUpTim:	xxxxxx xxxxx	3.3 3.5 4.0	3.3 xxxxx xxxxx xxxxx	2.2 xxxxx xxxxx

Capacity Module:

Conflict Vol:	xxxxx xxxxx	0 972 972 910	xxxxx xxxxx xxxxx	0 xxxxx xxxxx
Potent Cap.:	xxxxx xxxxx	900 234 255 336	xxxxx xxxxx xxxxx	900 xxxxx xxxxx
Move Cap.:	xxxxx xxxxx	900 179 246 336	xxxxx xxxxx xxxxx	900 xxxxx xxxxx
Volume/Cap.:	xxxxx xxxxx	0.21 0.02 0.02 0.00	xxxxx xxxxx xxxxx	0.03 xxxxx xxxxx

Level Of Service Module:

2Way95thQ:	xxxxx xxxxx	0.8 xxxxx xxxxx xxxxx	xxxxx xxxxx xxxxx	0.1 xxxxx xxxxx
Control Del:	xxxxxx xxxxx	10.1 xxxxx xxxxx xxxxx	xxxxxx xxxxx xxxxx	9.1 xxxxx xxxxx
LOS by Move:	* * * * *	B * * * * *	* * * * *	A * * * * *
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxxx xxxxx xxxxx	xxxxx xxxxx xxxxx	xxxxx xxxxx xxxxx	xxxxx xxxxx xxxxx
SharedQueue:	xxxxxx xxxxx xxxxx	xxxxxx xxxxx xxxxx	xxxxxx xxxxx xxxxx	xxxxxx xxxxx xxxxx
Shrd ConDel:	xxxxxx xxxxx xxxxx	xxxxxx 21.8 xxxxx xxxxx	xxxxxx xxxxx xxxxx	xxxxxx xxxxx xxxxx
Shared LOS:	* * * * *	* * * * *	* * * * *	* * * * *
ApproachDel:	10.1	21.8	xxxxxxx	xxxxxxx
ApproachLOS:	B	C	xxxxxxx	xxxxxxx

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

Santa Ana Renaissance Specific Plan Traffic Study
2030 With Project AM

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #50 Mortimer (N/S) / 5th St (E/W)

Cycle (sec): 100 Critical Vol./Cap. (X): 0.289
 Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 9.0
 Optimal Cycle: Level Of Service: A

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	Stop Sign	Stop Sign
Rights:	Include	Include	Include	Include
Lanes:	0 0 0 1 0	0 0 1 0 0	1 0 0 1 0	0 0 1 0 0

Volume Module:

Base Vol:	0 129 4	3 19 0	190 28 37	6 0 10
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:	0 129 4	3 19 0	190 28 37	6 0 10
Added Vol:	0 0 0	0 0 0	0 0 0	0 0 0
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0
Initial Fut:	0 129 4	3 19 0	190 28 37	6 0 10
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:	0 129 4	3 19 0	190 28 37	6 0 10
Reduct Vol:	0 0 0	0 0 0	0 0 0	0 0 0
Reduced Vol:	0 129 4	3 19 0	190 28 37	6 0 10
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:	0 129 4	3 19 0	190 28 37	6 0 10

Saturation Flow Module:

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:	0.00 0.97 0.03	0.14 0.86 0.00	1.00 0.43 0.57	0.37 0.00 0.63
Final Sat.:	0 734 23	98 623 0	658 339 448	298 0 496

Capacity Analysis Module:

Vol/Sat:	xxxxx 0.18 0.18	0.03 0.03 xxxxx	0.29 0.08 0.08	0.02 xxxxx 0.02
Crit Moves:	xxxxx	xxxxx	xxxxx	xxxxx
Delay/Veh:	0.0 8.5 8.5	7.9 7.9 0.0	10.2 7.6 7.6	7.4 0.0 7.4
Delay Adj:	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AdjDel/Veh:	0.0 8.5 8.5	7.9 7.9 0.0	10.2 7.6 7.6	7.4 0.0 7.4
LOS by Move:	* A A A	* B A A	* B A A	* A * A
ApproachDel:	8.5	7.9	9.5	7.4
Delay Adj:	1.00	1.00	1.00	1.00
ApprAdjDel:	8.5	7.9	9.5	7.4
LOS by Appr:	A	A	A	A
AllWayAvgQ:	0.2 0.2 0.2	0.0 0.0 0.0	0.4 0.1 0.1	0.0 0.0 0.0

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

Santa Ana Renaissance Specific Plan Traffic Study
2030 With Project PM

Scenario Report

Scenario: 2030WPPM

Command: 2030WP PM
 Volume: 2030WPPM
 Geometry: Future WP
 Impact Fee: Default Impact Fee
 Trip Generation: Default Trip Generation
 Trip Distribution: Default Trip Distribution
 Paths: Default Path
 Routes: Default Route
 Configuration: Default Configuration

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Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change
	Del/ LOS Veh	V/ C	Del/ LOS Veh	V/ C	
# 1 Flower St (NS) / Civic Center D	C xxxxxx	0.758	C xxxxxx	0.758	+ 0.000 V/C
# 2 Flower St (N/S) / Santa Ana Bl	A xxxxxx	0.596	A xxxxxx	0.596	+ 0.000 V/C
# 3 Parton St (E/W) / Santa Ana Bl	A xxxxxx	0.377	A xxxxxx	0.377	+ 0.000 V/C
# 4 Ross St (N/S) / Civic Center D	A xxxxxx	0.504	A xxxxxx	0.504	+ 0.000 V/C
# 5 Ross St (N/S) / Santa Ana Bl (	A xxxxxx	0.429	A xxxxxx	0.429	+ 0.000 V/C
# 6 Ross St (N/S) / 4th St (E/W)	B	12.4 0.000	B	12.4 0.000	+ 0.000 D/V
# 7 Broadway (N/S) / Civic Center	B xxxxxx	0.654	B xxxxxx	0.654	+ 0.000 V/C
# 8 Broadway (N/S) / Santa Ana Bl	A xxxxxx	0.534	A xxxxxx	0.534	+ 0.000 V/C
# 9 Broadway (N/S) / 5th St (E/W)	A xxxxxx	0.486	A xxxxxx	0.486	+ 0.000 V/C
# 10 Broadway (N/S) / 4th St (E/W)	A xxxxxx	0.437	A xxxxxx	0.437	+ 0.000 V/C
# 11 Broadway (N/S) / 3rd st (E/W)	B xxxxxx	0.643	B xxxxxx	0.643	+ 0.000 V/C
# 12 Broadway (N/S) / 1st St (E/W)	C xxxxxx	0.753	C xxxxxx	0.753	+ 0.000 V/C
# 13 Sycamore St (N/S) / Civic Cent	A xxxxxx	0.525	A xxxxxx	0.525	+ 0.000 V/C
# 14 Sycamore St (N/S) / Santa Ana	C	22.9 0.000	C	22.9 0.000	+ 0.000 D/V
# 15 Sycamore St (N/S) / 5th St (E/	C	15.4 0.000	C	15.4 0.000	+ 0.000 D/V
# 16 Sycamore St (N/S) / 4th St (E/	A	9.7 0.391	A	9.7 0.391	+ 0.000 V/C
# 17 Main St (N/S) / Civic Center D	D xxxxxx	0.804	D xxxxxx	0.804	+ 0.000 V/C
# 18 Main St (N/S) / Santa Ana Dr (	C xxxxxx	0.726	C xxxxxx	0.726	+ 0.000 V/C
# 19 Main St (N/S) / 5th St (E/W)	B xxxxxx	0.664	B xxxxxx	0.664	+ 0.000 V/C
# 20 Main St (N/S) / 4th St (E/W)	C xxxxxx	0.726	C xxxxxx	0.726	+ 0.000 V/C
# 21 Main St (N/S) / 3rd St (E/W)	B xxxxxx	0.641	B xxxxxx	0.641	+ 0.000 V/C
# 22 Main St (N/S) / 1st St (E/W)	E xxxxxx	0.956	E xxxxxx	0.956	+ 0.000 V/C
# 23 Bush St (N/S) / Santa Ana Bl (A xxxxxx	0.409	A xxxxxx	0.409	+ 0.000 V/C
# 24 Bush St (N/S) / 5th St (E/W)	A xxxxxx	0.458	A xxxxxx	0.458	+ 0.000 V/C

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Table with columns: Intersection, Base Del/LOS Veh, V/C, Future Del/LOS Veh, V/C, Change in. Lists 49 intersections including Bush St, Spurgeon St, French St, Lacy St, Santiago St, Standard Av, etc.

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Table with columns: Intersection, Base Del/LOS Veh, V/C, Future Del/LOS Veh, V/C, Change in. Lists 1 intersection: # 50 Mortimer (N/S) / 5th St (E/W).

Traffic 7.9.0415 (c) 2007 Dowling Assoc. Licensed to KATZ OKITSU, TUSTIN, CA

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Level Of Service Computation Report for Intersection #1 Flower St (NS)/ Civic Center Dr (E/W). Includes Cycle, Loss Time, Optimal Cycle, Approach, Control, Rights, Volume Module, Saturation Flow Module, Capacity Analysis Module.

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Level Of Service Computation Report for Intersection #2 Flower St (N/S) / Santa Ana Bl (E/W). Includes Cycle, Loss Time, Optimal Cycle, Approach, Control, Rights, Volume Module, Saturation Flow Module, Capacity Analysis Module.

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #3 Parton St (E/W) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.377
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 19 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Volume Module: Base Vol: 79 4 95 48 8 28 4 636 51 32 959 19
Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Capacity Analysis Module: Vol/Sat: 0.05 0.10 0.10 0.03 0.03 0.02 0.00 0.13 0.13 0.02 0.19 0.19

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #4 Ross St (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.504
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 24 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Volume Module: Base Vol: 79 242 128 79 147 88 51 744 57 49 628 97
Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Capacity Analysis Module: Vol/Sat: 0.05 0.14 0.08 0.05 0.14 0.14 0.03 0.24 0.24 0.03 0.21 0.21

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #5 Ross St (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.429
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 21 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Protected Ignore Protected Ignore
Volume Module: Base Vol: 51 152 97 63 215 109 62 511 63 113 644 101
Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Capacity Analysis Module: Vol/Sat: 0.03 0.09 0.06 0.04 0.13 0.07 0.04 0.15 0.00 0.07 0.13 0.00

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #6 Ross St (N/S) / 4th St (E/W)
Average Delay (sec/veh): 2.6 Worst Case Level of Service: Bf 12.4]
Approach: North Bound South Bound East Bound West Bound
Control: Uncontrolled Include Uncontrolled Include Stop Sign Include Stop Sign Include
Volume Module: Base Vol: 0 315 40 78 242 0 0 0 0 0 40 0 77
Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Level Of Service Module: Critical Gap Module: Critical Gap: xxxxxx xxxxx xxxxxx 4.1 xxxxx xxxxxx xxxxxx xxxxx xxxxxx 6.4 xxxxx 6.2
Level Of Service Module: 2Way95thQ: xxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx xxxxx xxxxx xxxxxx 0.4 xxxxx 0.4

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #7 Broadway (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.654
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 33 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Ignored Permitted Include Permitted Include
Volume Module: Base Vol: 76 636 62 143 728 179 217 838 77 42 530 120
Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Capacity Analysis Module: Vol/Sat: 0.05 0.19 0.00 0.09 0.21 0.00 0.14 0.27 0.27 0.03 0.19 0.19

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #8 Broadway (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.534
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 25 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Volume Module: Base Vol: 52 709 0 0 698 144 0 0 0 52 849 139
Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Capacity Analysis Module: Vol/Sat: 0.03 0.21 0.00 0.00 0.25 0.25 0.00 0.00 0.00 0.03 0.20 0.20

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #9 Broadway (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.486
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 23 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Protected Include Permitted Include Permitted Include
Volume Module: Base Vol: 0 592 82 92 726 0 194 688 38 0 0 0 0
Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Capacity Analysis Module: Vol/Sat: 0.00 0.20 0.20 0.06 0.21 0.00 0.11 0.18 0.18 0.00 0.00 0.00

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #10 Broadway (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.437
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 21 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Volume Module: Base Vol: 37 525 122 45 612 32 57 124 42 63 134 47
Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Capacity Analysis Module: Vol/Sat: 0.02 0.19 0.19 0.03 0.19 0.19 0.03 0.13 0.13 0.04 0.14 0.14

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #11 Broadway (N/S) / 3rd at (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.643
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 32 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 1 0 0 1 0 1 0 1 0 0 1 0 1 0 0 1 0

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #12 Broadway (N/S) / 1st St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.753
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 44 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 2 1 0 1 0 2 1 0

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #13 Sycamore St (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.525
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 25 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0
Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 1 0 1 1 0 0

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #14 Sycamore St (N/S) / Santa Ana Bl (E/W)
Average Delay (sec/veh): 5.9 Worst Case Level of Service: C [22.9]
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 1 0 0 0 0 0 0 1 0 0 0 0 0 1 1 1 0 0

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #15 Sycamore St (N/S) / 5th St (E/W)
Average Delay (sec/veh): 3.8 Worst Case Level Of Service: C [15.4]
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 1 0 0 0 0 1 1 1 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 10 26 82 44 0 65 524 15 0 0 0 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 1.00
Initial Bse: 0 10 26 82 44 0 65 524 15 0 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 10 26 82 44 0 65 524 15 0 0 0 0 0
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 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 1.00
PHF Volume: 0 10 26 82 44 0 65 524 15 0 0 0 0 0
Reduce Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 10 26 82 44 0 65 524 15 0 0 0 0 0
Critical Gap Module:
Critical Gap: 6.5 6.2 7.1 6.5
FollowUpTim: 4.0 3.3 3.5 4.0
Capacity Module:
Conflict Vol: 662 182 310 669
Potent Cap.: 385 866 647 381
Move Cap.: 356 866 579 352
Volume/Cap.: 0.03 0.03 0.14 0.12
Level of Service Module:
2Way95thQ:
Control Del:
LOS by Move:
Movement:
Shared Cap.:
Shared Queue:
Shrd Condel:
Shared LOS:
ApproachDel:
ApproachLOS:
Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)
Intersection #16 Sycamore St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.391
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 9.7
Optimal Cycle: 40 Level Of Service: C
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 Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0 0
Volume Module:
Base Vol: 9 9 81 19 10 35 37 182 22 88 189 22
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: 9 9 81 19 10 35 37 182 22 88 189 22
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 9 9 81 19 10 35 37 182 22 88 189 22
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 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 1.00
PHF Volume: 9 9 81 19 10 35 37 182 22 88 189 22
Reduce Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 9 9 81 19 10 35 37 182 22 88 189 22
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 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 1.00
FinalVolume: 9 9 81 19 10 35 37 182 22 88 189 22
Saturation Flow Module:
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 1.00
Lanes: 0.09 0.09 0.82 0.30 0.15 0.55 0.15 0.76 0.09 0.29 0.64 0.07 0.00
Final Sat.: 63 63 567 194 102 358 116 571 69 225 483 56
Capacity Analysis Module:
Vol/Sat: 0.14 0.14 0.14 0.10 0.10 0.10 0.32 0.32 0.32 0.39 0.39 0.39 0.39
Crit Moves:
Delay/Veh: 8.4 8.4 8.4 8.4 8.4 8.4 9.6 9.6 9.6 10.4 10.4 10.4 10.4
Delay Adj: 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
AdjDel/Veh: 8.4 8.4 8.4 8.4 8.4 8.4 9.6 9.6 9.6 10.4 10.4 10.4 10.4
LOS by Move: A A A A A A A A A B B B B
ApproachDel: 8.4 8.4 8.4 9.6 10.4 10.4
Delay Adj: 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
ApprAdjDel: 8.4 8.4 8.4 9.6 10.4 10.4
LOS by Appr: A A A A A A A A A B B B B
AllWayAvgQ: 0.1 0.1 0.1 0.1 0.1 0.1 0.4 0.4 0.4 0.6 0.6 0.6 0.6
Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #17 Main St (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.804
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh):
Optimal Cycle: 53 Level Of Service: D
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
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0 1 1 0
Volume Module:
Base Vol: 122 1070 92 87 1059 89 138 865 148 68 411 74
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: 122 1070 92 87 1059 89 138 865 148 68 411 74
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 122 1070 92 87 1059 89 138 865 148 68 411 74
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 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 1.00
PHF Volume: 122 1070 92 87 1059 89 138 865 148 68 411 74
Reduce Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 122 1070 92 87 1059 89 138 865 148 68 411 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 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 1.00
FinalVolume: 122 1070 92 87 1059 89 138 865 148 68 411 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 1.00
Lanes: 1.00 1.84 0.16 1.00 1.84 0.16 1.00 1.71 0.29 1.00 1.69 0.31 0.31
Final Sat.: 1598 3131 269 1598 3136 264 1598 2903 497 1598 2881 519
Capacity Analysis Module:
Vol/Sat: 0.08 0.34 0.34 0.05 0.34 0.34 0.09 0.30 0.30 0.04 0.14 0.14 0.14
Crit Moves:
Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #18 Main St (N/S) / Santa Ana Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.726
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh):
Optimal Cycle: 40 Level Of Service: C
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
Lanes: 1 0 2 0 0 0 0 1 1 0 0 0 0 0 0 0 0 1 1 1 0 0
Volume Module:
Base Vol: 85 1316 0 0 0 1341 78 0 0 0 85 854 108
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: 85 1316 0 0 0 1341 78 0 0 0 85 854 108
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 85 1316 0 0 0 1341 78 0 0 0 85 854 108
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 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 1.00
PHF Volume: 85 1316 0 0 0 1341 78 0 0 0 85 854 108
Reduce Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 85 1316 0 0 0 1341 78 0 0 0 85 854 108
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 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 1.00
FinalVolume: 85 1316 0 0 0 1341 78 0 0 0 85 854 108
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00 1.00
Lanes: 1.00 2.00 0.00 0.00 1.89 0.11 0.00 0.00 0.00 0.24 2.45 0.31 0.31
Final Sat.: 1598 3400 0 0 3213 187 0 0 0 414 4160 526
Capacity Analysis Module:
Vol/Sat: 0.05 0.39 0.00 0.00 0.42 0.42 0.00 0.00 0.00 0.05 0.21 0.21 0.21
Crit Moves:
Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #19 Main St (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.664
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 34 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Protected Include Permitted Include Permitted Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 1 0 2 0 0 0 1 1 1 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 1294 30 84 1301 0 113 685 79 0 0 0 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 Base: 0 1294 30 84 1301 0 113 685 79 0 0 0 0
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 1294 30 84 1301 0 113 685 79 0 0 0 0
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: 0 1294 30 84 1301 0 113 685 79 0 0 0 0
Reduct Vol: 0
Reduced Vol: 0 1294 30 84 1301 0 113 685 79 0 0 0 0
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 1294 30 84 1301 0 113 685 79 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00 0.94 1.00 0.94
Lanes: 0.00 1.95 0.05 1.00 2.00 0.00 0.39 2.34 0.27 0.00 0.00 0.00
Final Sat.: 0 3323 77 1598 3400 0 657 3983 459 0 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.00 0.39 0.39 0.05 0.38 0.00 0.07 0.17 0.17 0.00 0.00 0.00
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #20 Main St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.726
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 40 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Protected Include Permitted Include Permitted Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 0 0 1 1 0 0 0 0 0 1 0 0 0 0 1 0
Volume Module:
Base Vol: 0 1344 136 0 1276 60 0 241 64 0 344 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 Base: 0 1344 136 0 1276 60 0 241 64 0 344 66
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 1344 136 0 1276 60 0 241 64 0 344 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: 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: 0 1344 136 0 1276 60 0 241 64 0 344 66
Reduct Vol: 0
Reduced Vol: 0 1344 136 0 1276 60 0 241 64 0 344 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: 0 1344 136 0 1276 60 0 241 64 0 344 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: 0.00 1.82 0.18 0.00 1.91 0.09 0.00 0.79 0.21 0.00 0.84 0.16
Final Sat.: 0 3088 312 0 3247 153 0 1343 357 0 1426 274
Capacity Analysis Module:
Vol/Sat: 0.00 0.44 0.44 0.00 0.39 0.39 0.00 0.18 0.18 0.00 0.24 0.24
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #21 Main St (N/S) / 3rd St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.641
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 32 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Protected Include Permitted Include Permitted Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 0 0 1 1 0 1 0 0 1 0 0 1 0 0 1 0
Volume Module:
Base Vol: 0 1393 44 0 1333 58 47 164 43 41 195 41
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 Base: 0 1393 44 0 1333 58 47 164 43 41 195 41
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 1393 44 0 1333 58 47 164 43 41 195 41
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: 0 1393 44 0 1333 58 47 164 43 41 195 41
Reduct Vol: 0
Reduced Vol: 0 1393 44 0 1333 58 47 164 43 41 195 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: 0 1393 44 0 1333 58 47 164 43 41 195 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 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 0.00 1.94 0.06 0.00 1.92 0.08 1.00 0.79 0.21 1.00 0.83 0.17
Final Sat.: 0 3296 104 0 3258 142 1598 1347 353 1598 1405 295
Capacity Analysis Module:
Vol/Sat: 0.00 0.42 0.42 0.00 0.41 0.41 0.03 0.12 0.12 0.03 0.14 0.14
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #22 Main St (N/S) / 1st St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.956
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: E
Approach: North Bound South Bound East Bound West Bound
Control: Protected Include Protected Include Protected Include Protected Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 1 0 1 0 2 0 1 1 0 2 1 0 1 0 2 1 0 1 0
Volume Module:
Base Vol: 217 1056 92 243 967 167 198 1222 97 114 1304 186
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 Base: 217 1056 92 243 967 167 198 1222 97 114 1304 186
Added Vol: 0
PasserByVol: 0
Initial Fut: 217 1056 92 243 967 167 198 1222 97 114 1304 186
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: 217 1056 92 243 967 167 198 1222 97 114 1304 186
Reduct Vol: 0
Reduced Vol: 217 1056 92 243 967 167 198 1222 97 114 1304 186
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: 217 1056 92 243 967 167 198 1222 97 114 1304 186
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 1.84 0.16 1.00 2.00 1.00 1.00 2.78 0.22 1.00 2.63 0.37
Final Sat.: 1598 3128 272 1598 3400 1598 1598 4725 375 1598 4463 637
Capacity Analysis Module:
Vol/Sat: 0.14 0.34 0.34 0.15 0.28 0.10 0.12 0.26 0.26 0.07 0.29 0.29
Crit Moves: ****

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #23 Bush St (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.409
Loas Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 20 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 0 0 0 0 1 0 0 0 0 0 0 1 1 1 0 0
Volume Module:
Base Vol: 43 327 0 0 211 36 0 0 0 0 39 746 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 1.00
Initial Base: 43 327 0 0 211 36 0 0 0 0 39 746 63
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 43 327 0 0 211 36 0 0 0 0 39 746 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 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 1.00
PHF Volume: 43 327 0 0 211 36 0 0 0 0 39 746 63
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 43 327 0 0 211 36 0 0 0 0 39 746 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 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 1.00
FinalVolume: 43 327 0 0 211 36 0 0 0 0 39 746 63
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00
Lanes: 1.00 1.00 0.00 0.00 0.85 0.15 0.00 0.00 0.00 0.14 2.64 0.22
Final Sat.: 1598 1700 0 0 1452 248 0 0 0 235 4487 379
Capacity Analysis Module:
Vol/Sat: 0.03 0.19 0.00 0.00 0.15 0.15 0.00 0.00 0.00 0.02 0.17 0.17
Crit Moves: ****

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #24 Bush St (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.458
Loas Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 22 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 0 1 0 1 0 1 0 0 0 1 1 1 0 0 0 0 0 0
Volume Module:
Base Vol: 0 315 67 29 269 0 46 731 65 0 0 0 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 1.00
Initial Base: 0 315 67 29 269 0 46 731 65 0 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 315 67 29 269 0 46 731 65 0 0 0 0
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 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 1.00
PHF Volume: 0 315 67 29 269 0 46 731 65 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 315 67 29 269 0 46 731 65 0 0 0 0
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 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 1.00
FinalVolume: 0 315 67 29 269 0 46 731 65 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00 0.94 1.00 1.00 0.94
Lanes: 0.00 0.82 0.18 1.00 1.00 0.00 0.16 2.61 0.23 0.00 0.00 0.00
Final Sat.: 0 1402 298 1598 1700 0 279 4428 394 0 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.00 0.22 0.22 0.02 0.16 0.00 0.03 0.17 0.17 0.00 0.00 0.00
Crit Moves: ****

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #25 Bush St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.490
Loas Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 23 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 0 1 0 1 0 1 0 0 0 1 1 0 0 0
Volume Module:
Base Vol: 20 317 26 43 229 12 13 259 28 19 285 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 Base: 20 317 26 43 229 12 13 259 28 19 285 42
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 20 317 26 43 229 12 13 259 28 19 285 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 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 1.00
PHF Volume: 20 317 26 43 229 12 13 259 28 19 285 42
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 20 317 26 43 229 12 13 259 28 19 285 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 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 1.00
FinalVolume: 20 317 26 43 229 12 13 259 28 19 285 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 0.92 0.08 1.00 0.95 0.05 0.04 0.87 0.09 0.05 0.83 0.12
Final Sat.: 1598 1571 129 1598 1615 85 74 1468 159 93 1400 206
Capacity Analysis Module:
Vol/Sat: 0.01 0.20 0.20 0.03 0.14 0.14 0.01 0.18 0.18 0.01 0.20 0.20
Crit Moves: ****

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #26 Spurgeon St (N/S) / 1st St (E/W)
Average Delay (sec/veh): 0.5 Worst Case Level of Service: C [15.4]
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 0 0 0 1 0 0 3 0 0 0 0 2 1 0 0
Volume Module:
Base Vol: 0 0 0 0 0 0 124 0 1688 0 0 1648 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 1.00
Initial Base: 0 0 0 0 0 0 124 0 1688 0 0 1648 40
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 0 0 0 124 0 1688 0 0 1648 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 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 1.00
PHF Volume: 0 0 0 0 0 0 124 0 1688 0 0 1648 40
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 0 0 0 0 0 124 0 1688 0 0 1648 40
Critical Gap Module:
Critical Gap: xxxxxx xxxxx xxxxxx xxxxxx xxxxx 6.9 xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
FollowUpTim: xxxxxxx xxxxxx xxxxxx xxxxxx xxxxx 3.3 xxxxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Capacity Module:
Conflict Vol: xxxxx xxxxx xxxxxx xxxxxx xxxxxx 569 xxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Potent Cap.: xxxxx xxxxx xxxxxx xxxxxx xxxxxx 470 xxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Move Cap.: xxxxx xxxxx xxxxxx xxxxxx xxxxxx 470 xxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Volume/Cap: xxxxx xxxxx xxxxx xxxxxx xxxxxx 0.26 xxxxxx xxxxx xxxxx xxxxxx xxxxxx
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx xxxxxx xxxxxx 1.0 xxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Control Del: xxxxxx xxxxx xxxxxx xxxxxx xxxxxx 15.4 xxxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx
LOS by Move: * * * * * C * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
ShareQueue: xxxxxx xxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Shrd ConDel: xxxxxx xxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Shared LOS: * * * * * C * * * * *
ApproachDel: xxxxxx 15.4 xxxxxx xxxxxx
ApproachLOS: * * * * *
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #27 French St (N/S) / Santa Ana Bl (E/W). Average Delay (sec/veh): 5.6. Worst Case Level Of Service: C [20.2].

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. ICU (Loss as Cycle Length %) Method (Future Volume Alternative). Intersection #28 French St (N/S) / 4th St (E/W). Average Delay (sec/veh): 5.6. Worst Case Level Of Service: C [20.2].

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #29 Lacy St (N/S) / Civic Center Dr (E/W). Average Delay (sec/veh): 6.8. Worst Case Level Of Service: E [44.8].

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #30 Lacy St (N/S) / Santa Ana Bl (E/W). Average Delay (sec/veh): 32.7. Worst Case Level Of Service: F [375.3].

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. 2000 HCM 4-Way Stop Method (Future Volume Alternative). Intersection #31 Lacy St (N/S) / Brown St (E/W). Includes tables for Cycle, Loss Time, Optimal Cycle, Approach, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module, and Crit Moves.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. 2000 HCM 4-Way Stop Method (Future Volume Alternative). Intersection #32 Lacy St (N/S) / 4th St (E/W). Includes tables for Cycle, Loss Time, Optimal Cycle, Approach, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module, and Crit Moves.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #33 Lacy St (N/S) / 1st St (E/W). Includes tables for Average Delay, Approach, Control, Rights, Lanes, Volume Module, Critical Gap Module, Capacity Module, Level of Service Module, and Saturation Flow Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. 2000 HCM 4-Way Stop Method (Future Volume Alternative). Intersection #34 Santiago St (N/S) / Washington Av (E/W). Includes tables for Cycle, Loss Time, Optimal Cycle, Approach, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module, and Crit Moves.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. 2000 HCM 4-Way Stop Method (Future Volume Alternative). Intersection #35 Santiago St (N/S) / Civic Center Dr (E/W). Cycle (sec): 100. Critical Vol./Cap.(X): 1.021. Average Delay (sec/veh): 42.6. Level Of Service: E. Approach: North Bound, South Bound, East Bound, West Bound. Volume Module: Base Vol: 210 265 31 15 323 148 323 58 434 42 36 13. Saturation Flow Module: 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. Capacity Analysis Module: Vol/Sat: 0.50 0.65 0.65 0.04 1.02 1.02 0.86 0.86 0.85 0.24 0.24 0.24. Crit Moves: ****. Delay/Veh: 19.1 24.0 24.0 11.5 75.3 75.3 43.7 43.7 37.1 15.1 15.1 15.1. LOS by Move: C C C B F F E E C C. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #36 Santiago St (N/S) / Santa Ana Bl (E/W). Cycle (sec): 100. Critical Vol./Cap.(X): 0.690. Average Delay (sec/veh): xxxxxx. Level Of Service: B. Approach: North Bound, South Bound, East Bound, West Bound. Volume Module: Base Vol: 49 111 79 395 295 135 82 807 104 121 775 322. Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700. Capacity Analysis Module: Vol/Sat: 0.03 0.03 0.05 0.25 0.09 0.08 0.05 0.27 0.27 0.08 0.23 0.20. Crit Moves: ****. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #37 Santiago St (N/S) / Brown St (E/W). Average Delay (sec/veh): 3.0. Worst Case Level Of Service: B[13.9]. Approach: North Bound, South Bound, East Bound, West Bound. Volume Module: Base Vol: 57 228 0 0 0 380 140 98 0 79 0 0 0 0. Saturation Flow Module: Critical Gap Module: Critical Gap: 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 6.8 6.5 6.9 xxxxx xxxxx xxxxx. FollowUpTim: 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 4.0 3.3 xxxxx xxxxx xxxxx. Capacity Module: Conflict Vol: 520 xxxxx xxxxx xxxxx xxxxx xxxxx 640 792 197 xxxxx xxxxx xxxxx. Potent Cap: 1056 xxxxx xxxxx xxxxx xxxxx xxxxx 412 324 818 xxxxx xxxxx xxxxx. Move Cap: 1056 xxxxx xxxxx xxxxx xxxxx xxxxx 395 306 818 xxxxx xxxxx xxxxx. Volume/Cap: 0.05 xxxxx xxxxx xxxxx xxxxx xxxxx 0.25 0.00 0.10 xxxxx xxxxx xxxxx. Level Of Service Module: 2Way95thQ: 0.2 xxxxx xxxxx xxxxx xxxxx xxxxx 1.0 xxxxx xxxxx xxxxx xxxxx xxxxx. Control Del: 8.6 xxxxx xxxxx xxxxx xxxxx xxxxx 17.1 xxxxx xxxxx xxxxx xxxxx xxxxx. LOS by Move: A * * * * * C * * * * *. Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT. Shared Cap: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 818 xxxxx xxxxx xxxxx xxxxx. SharedQueue: 0.2 xxxxx xxxxx 0.0 xxxxx xxxxx xxxxx xxxxx 0.3 xxxxx xxxxx xxxxx. Shrd ConDel: 8.6 xxxxx xxxxx 9.0 xxxxx xxxxx xxxxx xxxxx 9.9 xxxxx xxxxx xxxxx. Shared LOS: A * * * * * A * * * * *. ApproachDel: xxxxxxx xxxxxxx 13.9 xxxxxxx. ApproachLOS: * * * * * B * * * * *. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #38 Santiago St (N/S) / 6th St (E/W). Average Delay (sec/veh): 2.8. Worst Case Level Of Service: B[13.0]. Approach: North Bound, South Bound, East Bound, West Bound. Volume Module: Base Vol: 59 199 0 0 330 129 86 0 60 0 0 0 0. Saturation Flow Module: Critical Gap Module: Critical Gap: 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 6.8 xxxxx 6.9 xxxxx xxxxx xxxxx. FollowUpTim: 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 xxxxx 3.3 xxxxx xxxxx xxxxx. Capacity Module: Conflict Vol: 459 xxxxx xxxxx xxxxx xxxxx xxxxx 579 xxxxx 175 xxxxx xxxxx xxxxx. Potent Cap: 1113 xxxxx xxxxx xxxxx xxxxx xxxxx 451 xxxxx 845 xxxxx xxxxx xxxxx. Move Cap: 1113 xxxxx xxxxx xxxxx xxxxx xxxxx 432 xxxxx 845 xxxxx xxxxx xxxxx. Volume/Cap: 0.05 xxxxx xxxxx xxxxx xxxxx xxxxx 0.20 xxxxx 0.07 xxxxx xxxxx xxxxx. Level Of Service Module: 2Way95thQ: 0.2 xxxxx xxxxx xxxxx xxxxx xxxxx 0.7 xxxxx 0.2 xxxxx xxxxx xxxxx. Control Del: 8.4 xxxxx xxxxx xxxxx xxxxx xxxxx 15.4 xxxxx 9.6 xxxxx xxxxx xxxxx. LOS by Move: A * * * * * C * * * * *. Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT. Shared Cap: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 818 xxxxx xxxxx xxxxx xxxxx. SharedQueue: 0.2 xxxxx xxxxx 0.0 xxxxx xxxxx xxxxx xxxxx 0.3 xxxxx xxxxx xxxxx. Shrd ConDel: 8.4 xxxxx xxxxx 9.0 xxxxx xxxxx xxxxx xxxxx 9.9 xxxxx xxxxx xxxxx. Shared LOS: A * * * * * A * * * * *. ApproachDel: xxxxxxx xxxxxxx 13.0 xxxxxxx. ApproachLOS: * * * * * B * * * * *. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. Intersection #43 Grand Av (N/S) / 4th St (E/W). Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. Intersection #44 Grand Av (N/S) / 1st St (E/W). Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. Intersection #45 Penn Way (NS) at I-5 SB Ramps (EW). Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. Intersection #46 I-5 SB Ramps (NS) / Santa Ana Bl (EW). Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. 2000 HCM Operations Method (Future Volume Alternative). Intersection #47 I-5 NB Ramps (NS) / 17th St. (EW). Table with columns for Cycle, Loss Time, Optimal Cycle, Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module, and LOS by Move.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. 2000 HCM Operations Method (Future Volume Alternative). Intersection #48 I-5 NB Ramps (NS) / Grand Ave (EW). Table with columns for Cycle, Loss Time, Optimal Cycle, Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module, and LOS by Move.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #49 Mortimer (N/S) / Santa Ana Blvd (E/W). Table with columns for Average Delay, Approach, Movement, Control, Rights, Lanes, Volume Module, Critical Gap Module, Capacity Module, Saturation Flow Module, and LOS by Move.

Santa Ana Renaissance Specific Plan Traffic Study 2030 With Project PM. Level Of Service Computation Report. 2000 HCM 4-Way Stop Method (Future Volume Alternative). Intersection #50 Mortimer (N/S) / 5th St (E/W). Table with columns for Cycle, Loss Time, Optimal Cycle, Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module, and LOS by Move.

APPENDIX I
2035 With Project Conditions Analysis Worksheets

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project AM

Scenario Report
Scenario: 2035WPAM
Command: 2035WP AM
Volume: 2035WPAM
Geometry: Future WP
Impact Fee: Default Impact Fee
Trip Generation: Default Trip Generation
Trip Distribution: Default Trip Distribution
Paths: Default Path
Routes: Default Route
Configuration: Default Configuration

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project AM

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change in
	Del/ LOS	V/ C	Del/ LOS	V/ C	
# 1 Flower St (NS)/ Civic Center D	C	xxxxxx 0.784	C	xxxxxx 0.784	+ 0.000 V/C
# 2 Flower St (N/S) / Santa Ana Bl	B	xxxxxx 0.695	B	xxxxxx 0.695	+ 0.000 V/C
# 3 Parton St (E/W) / Santa Ana Bl	A	xxxxxx 0.313	A	xxxxxx 0.313	+ 0.000 V/C
# 4 Ross St (N/S) / Civic Center D	B	xxxxxx 0.652	B	xxxxxx 0.652	+ 0.000 V/C
# 5 Ross St (N/S) / Santa Ana Bl (	A	xxxxxx 0.582	A	xxxxxx 0.582	+ 0.000 V/C
# 6 Ross St (N/S) / 4th St (E/W)	B	11.9 0.000	B	11.9 0.000	+ 0.000 D/V
# 7 Broadway (N/S) / Civic Center	C	xxxxxx 0.740	C	xxxxxx 0.740	+ 0.000 V/C
# 8 Broadway (N/S) / Santa Ana Bl	B	xxxxxx 0.618	B	xxxxxx 0.618	+ 0.000 V/C
# 9 Broadway (N/S) / 5th St (E/W)	A	xxxxxx 0.404	A	xxxxxx 0.404	+ 0.000 V/C
# 10 Broadway (N/S) / 4th St (E/W)	A	xxxxxx 0.477	A	xxxxxx 0.477	+ 0.000 V/C
# 11 Broadway (N/S)/ 3rd st (E/W)	A	xxxxxx 0.409	A	xxxxxx 0.409	+ 0.000 V/C
# 12 Broadway (N/S) / 1st St (E/W)	C	xxxxxx 0.778	C	xxxxxx 0.778	+ 0.000 V/C
# 13 Sycamore St (N/S) / Civic Cent	A	xxxxxx 0.502	A	xxxxxx 0.502	+ 0.000 V/C
# 14 Sycamore St (N/S) / Santa Ana	D	32.4 0.000	D	32.4 0.000	+ 0.000 D/V
# 15 Sycamore St (N/S) / 5th St (E/	C	19.7 0.000	C	19.7 0.000	+ 0.000 D/V
# 16 Sycamore St (N/S) / 4th St (E/	A	8.6 0.300	A	8.6 0.300	+ 0.000 V/C
# 17 Main St (N/S) / Civic Center D	D	xxxxxx 0.899	D	xxxxxx 0.899	+ 0.000 V/C
# 18 Main St (N/S) / Santa Ana Dr (	D	xxxxxx 0.810	D	xxxxxx 0.810	+ 0.000 V/C
# 19 Main St (N/S) / 5th St (E/W)	B	xxxxxx 0.623	B	xxxxxx 0.623	+ 0.000 V/C
# 20 Main St (N/S) / 4th St (E/W)	B	xxxxxx 0.654	B	xxxxxx 0.654	+ 0.000 V/C
# 21 Main St (N/S) / 3rd St (E/W)	A	xxxxxx 0.559	A	xxxxxx 0.559	+ 0.000 V/C
# 22 Main St (N/S) / 1st St (E/W)	E	xxxxxx 0.927	E	xxxxxx 0.927	+ 0.000 V/C
# 23 Bush St (N/S) / Santa Ana Bl (	A	xxxxxx 0.346	A	xxxxxx 0.346	+ 0.000 V/C
# 24 Bush St (N/S) / 5th St (E/W)	A	xxxxxx 0.296	A	xxxxxx 0.296	+ 0.000 V/C

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project AM

Intersection	Base		Future		Change in
	Del/ LOS	V/ C	Del/ LOS	V/ C	
# 25 Bush St (N/S) / 4th St (E/W)	A	xxxxxx 0.357	A	xxxxxx 0.357	+ 0.000 V/C
# 26 Spurgeon St (N/S) / 1st St (E/	B	11.3 0.000	B	11.3 0.000	+ 0.000 D/V
# 27 French St (N/S) / Santa Ana Bl	D	26.1 0.000	D	26.1 0.000	+ 0.000 D/V
# 28 French St (N/S) / 4th St (E/W)	A	xxxxxx 0.359	A	xxxxxx 0.359	+ 0.000 V/C
# 29 Lacy St (N/S) / Civic Center D	E	37.9 0.000	E	37.9 0.000	+ 0.000 D/V
# 30 Lacy st (N/S) / Santa Ana Bl (	F	55.7 0.000	F	55.7 0.000	+ 0.000 D/V
# 31 Lacy St (N/S) / Brown St (E/W)	A	7.4 0.131	A	7.4 0.131	+ 0.000 V/C
# 32 Lacy St (N/S) / 4th St (E/W)	A	xxxxxx 0.465	A	xxxxxx 0.465	+ 0.000 V/C
# 33 Lacy St (N/S) / 1st St (E/W)	F	97.4 0.000	F	97.4 0.000	+ 0.000 D/V
# 34 Santiago St (N/S) / Washington	F	112.3 1.466	F	112.3 1.466	+ 0.000 V/C
# 35 Santiago St (N/S) / Civic Cent	F	263.9 2.252	F	263.9 2.252	+ 0.000 V/C
# 36 Santiago St (N/S) / Santa Ana	D	xxxxxx 0.865	D	xxxxxx 0.865	+ 0.000 V/C
# 37 Santiago St (N/S) / Brown St (	C	16.7 0.000	C	16.7 0.000	+ 0.000 D/V
# 38 Santiago St (N/S) / 6th St (E/	B	13.7 0.000	B	13.7 0.000	+ 0.000 D/V
# 39 Santiago St (N/S) / 4th (E/W)	F	OVRFL 0.000	F	OVRFL 0.000	+ 0.000 D/V
# 40 Standard Av (N/S) / 1st St (E/	E	xxxxxx 0.957	E	xxxxxx 0.957	+ 0.000 V/C
# 41 U-24 (N/S) / Santa Ana Bl (E/W)	F	79.4 0.000	F	79.4 0.000	+ 0.000 D/V
# 42 Grand Av (N/S) / Santa Ana Bl	F	xxxxxx 1.188	F	xxxxxx 1.188	+ 0.000 V/C
# 43 Grand Av (N/S) / 4th St (E/W)	C	xxxxxx 0.754	C	xxxxxx 0.754	+ 0.000 V/C
# 44 Grand Av (N/S) / 1st St (E/W)	E	xxxxxx 0.918	E	xxxxxx 0.918	+ 0.000 V/C
# 45 Penn Way (NS) at I-5 SB Ramps	C	25.0 0.546	C	25.0 0.546	+ 0.000 D/V
# 46 I-5 SB Ramps (NS) / Santa Ana	C	30.5 0.668	C	30.5 0.668	+ 0.000 D/V
# 47 I-5 NB Ramps (NS) / 17th St. (	D	39.7 0.901	D	39.7 0.901	+ 0.000 D/V
# 48 I-5 NB Ramps (NS) / Grand Ave	E	79.9 1.143	E	79.9 1.143	+ 0.000 D/V
# 49 Mortimer (N/S) / Santa Ana Blv	F	324.2 0.000	F	324.2 0.000	+ 0.000 D/V

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project AM

Intersection	Base		Future		Change in
	Del/ LOS	V/ C	Del/ LOS	V/ C	
# 50 Mortimer (N/S) / 5th St (E/W)	A	9.5 0.345	A	9.5 0.345	+ 0.000 V/C

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #1 Flower St (NS)/ Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.784
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 49 Level Of Service: C
Approach: North Bound South Bound East Bound West Bound
Control: Protected Protected Protected Protected
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0 1
Volume Module:
Base Vol: 182 802 190 137 738 210 155 626 184 164 583 67
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: 182 802 190 137 738 210 155 626 184 164 583 67
Added Vol: 0
PasserByVol: 0
Initial Fut: 182 802 190 137 738 210 155 626 184 164 583 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: 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: 182 802 190 137 738 210 155 626 184 164 583 67
Reduct Vol: 0
Reduced Vol: 182 802 190 137 738 210 155 626 184 164 583 67
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: 182 802 190 137 738 210 155 626 184 164 583 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 1.00 0.94 1.00 1.00
Lanes: 1.00 1.62 0.38 1.00 1.56 0.44 1.00 1.55 0.45 1.00 1.79 0.21
Final Sat.: 1598 2749 651 1598 2647 753 1598 2628 772 1598 3050 350
Capacity Analysis Module:
Vol/Sat: 0.11 0.29 0.29 0.09 0.28 0.28 0.10 0.24 0.24 0.10 0.19 0.19
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #2 Flower St (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.695
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 37 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 2 0 1 1 0 2 0 1 1 0 3 0 1 1 0 2 0 1
Volume Module:
Base Vol: 84 1114 70 191 1005 100 121 616 223 93 389 137
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: 84 1114 70 191 1005 100 121 616 223 93 389 137
Added Vol: 0
PasserByVol: 0
Initial Fut: 84 1114 70 191 1005 100 121 616 223 93 389 137
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: 84 1114 70 191 1005 100 121 616 223 93 389 137
Reduct Vol: 0
Reduced Vol: 84 1114 70 191 1005 100 121 616 223 93 389 137
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: 84 1114 70 191 1005 100 121 616 223 93 389 137
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 0.94 0.94 1.00 0.94
Lanes: 1.00 2.00 1.00 1.00 2.00 1.00 1.00 3.00 1.00 1.00 2.00 1.00
Final Sat.: 1598 3400 1598 1598 3400 1598 1598 5100 1598 1598 3400 1598
Capacity Analysis Module:
Vol/Sat: 0.05 0.33 0.04 0.12 0.30 0.06 0.08 0.12 0.14 0.06 0.11 0.09
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #3 Parton St (E/W) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.313
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 18 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 0 1 1 0 2 1 0 1 0 2 1 0
Volume Module:
Base Vol: 17 6 37 24 8 26 36 677 133 87 642 98
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: 17 6 37 24 8 26 36 677 133 87 642 98
Added Vol: 0
PasserByVol: 0
Initial Fut: 17 6 37 24 8 26 36 677 133 87 642 98
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: 17 6 37 24 8 26 36 677 133 87 642 98
Reduct Vol: 0
Reduced Vol: 17 6 37 24 8 26 36 677 133 87 642 98
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: 17 6 37 24 8 26 36 677 133 87 642 98
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 0.94 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 0.28 0.10 0.62 0.75 0.25 1.00 1.00 2.51 0.49 1.00 2.60 0.40
Final Sat.: 462 170 1048 1275 425 1598 1598 4263 837 1598 4425 675
Capacity Analysis Module:
Vol/Sat: 0.01 0.04 0.04 0.01 0.02 0.02 0.02 0.16 0.16 0.05 0.15 0.15
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #4 Ross St (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.652
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 33 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 1 0 1 1 0 0 1 0 1 0 1 0 1 1 0 1 0 1 1 0
Volume Module:
Base Vol: 133 228 78 74 253 85 61 683 118 77 899 59
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: 133 228 78 74 253 85 61 683 118 77 899 59
Added Vol: 0
PasserByVol: 0
Initial Fut: 133 228 78 74 253 85 61 683 118 77 899 59
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: 133 228 78 74 253 85 61 683 118 77 899 59
Reduct Vol: 0
Reduced Vol: 133 228 78 74 253 85 61 683 118 77 899 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: 133 228 78 74 253 85 61 683 118 77 899 59
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 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 0.75 0.25 1.00 1.71 0.29 1.00 1.88 0.12
Final Sat.: 1598 1700 1598 1598 1272 428 1598 2899 501 1598 3191 209
Capacity Analysis Module:
Vol/Sat: 0.08 0.13 0.05 0.05 0.20 0.20 0.04 0.24 0.24 0.05 0.28 0.28
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative). Intersection #5 Ross St (N/S) / Santa Ana Bl (E/W). Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #6 Ross St (N/S) / 4th St (E/W). Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Capacity Module, Level of Service Module, Shared Queue, Shared LOS, ApproachDel, ApproachLOS.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative). Intersection #7 Broadway (N/S) / Civic Center Dr (E/W). Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative). Intersection #8 Broadway (N/S) / Santa Ana Bl (E/W). Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Saturation Flow Module, Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project AM

Level Of Service Computation Report													
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)													
Intersection #9 Broadway (N/S) / 5th St (E/W)													
Cycle (sec):	100	Critical Vol./Cap.(X):								0.404			
Loss Time (sec):	5 (Y+R=4.0 sec)	Average Delay (sec/veh):								xxxxxxx			
Optimal Cycle:	20	Level Of Service:								A			
Approach:	North Bound	South Bound				East Bound				West Bound			
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	
Control:	Permitted	Protected				Permitted				Permitted			
Rights:	Include	Include				Include				Include			
Min. Green:	0 0 0	0 0 0				0 0 0				0 0 0			
Lanes:	0 0 1 1 0	1 0 2 0 0				0 1 1 1 0				0 0 0 0 0			
Volume Module:													
Base Vol:	0 599 49	87 622 0				138 414 2				0 0 0 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 Base:	0 599 49	87 622 0				138 414 2				0 0 0 0			
Added Vol:	0 0 0	0 0 0				0 0 0				0 0 0 0			
PasserByVol:	0 0 0	0 0 0				0 0 0				0 0 0 0			
Initial Fut:	0 599 49	87 622 0				138 414 2				0 0 0 0			
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:	0 599 49	87 622 0				138 414 2				0 0 0 0			
Reduct Vol:	0 0 0	0 0 0				0 0 0				0 0 0 0			
Reduced Vol:	0 599 49	87 622 0				138 414 2				0 0 0 0			
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:	0 599 49	87 622 0				138 414 2				0 0 0 0			
Saturation Flow Module:													
Sat/Lane:	1700 1700 1700	1700 1700 1700				1700 1700 1700				1700 1700 1700			
Adjustment:	0.94 1.00 1.00	0.94 1.00 0.94				1.00 1.00 1.00				0.94 1.00 0.94			
Lanes:	0.00 1.85 0.15	1.00 2.00 0.00				0.75 2.24 0.01				0.00 0.00 0.00			
Final Sat.:	0 3143	257 1598 3400				0 1270 3811				18 0 0 0			
Capacity Analysis Module:													
Vol/Sat:	0.00 0.19 0.19	0.05 0.18 0.00				0.08 0.11 0.11				0.00 0.00 0.00			
Crit Moves:	****	****				****				****			

Santa Ana Renaissance Specific Plan Traffic Study
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Level Of Service Computation Report													
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)													
Intersection #10 Broadway (N/S) / 4th St (E/W)													
Cycle (sec):	100	Critical Vol./Cap.(X):								0.477			
Loss Time (sec):	5 (Y+R=4.0 sec)	Average Delay (sec/veh):								xxxxxxx			
Optimal Cycle:	23	Level Of Service:								A			
Approach:	North Bound	South Bound				East Bound				West Bound			
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	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			
Lanes:	1 0 1 1 0	1 0 1 1 0				0 0 1 1 0				0 0 1 1 0			
Volume Module:													
Base Vol:	66 876 89	14 555 92				26 56 50				50 122 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 Base:	66 876 89	14 555 92				26 56 50				50 122 30			
Added Vol:	0 0 0	0 0 0				0 0 0				0 0 0 0			
PasserByVol:	0 0 0	0 0 0				0 0 0				0 0 0 0			
Initial Fut:	66 876 89	14 555 92				26 56 50				50 122 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:	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:	66 876 89	14 555 92				26 56 50				50 122 30			
Reduct Vol:	0 0 0	0 0 0				0 0 0				0 0 0 0			
Reduced Vol:	66 876 89	14 555 92				26 56 50				50 122 30			
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:	66 876 89	14 555 92				26 56 50				50 122 30			
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 1.82 0.18	1.00 1.72 0.28				0.20 0.42 0.38				0.25 0.60 0.15			
Final Sat.:	1598 3086	314 1598 2917				483 335 721				644 421 1027 252			
Capacity Analysis Module:													
Vol/Sat:	0.04 0.28 0.28	0.01 0.19 0.19				0.02 0.08 0.08				0.03 0.12 0.12			
Crit Moves:	****	****				****				****			

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project AM

Level Of Service Computation Report													
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)													
Intersection #11 Broadway (N/S) / 3rd St (E/W)													
Cycle (sec):	100	Critical Vol./Cap.(X):								0.409			
Loss Time (sec):	5 (Y+R=4.0 sec)	Average Delay (sec/veh):								xxxxxxx			
Optimal Cycle:	20	Level Of Service:								A			
Approach:	North Bound	South Bound				East Bound				West Bound			
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	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			
Lanes:	1 0 0 1 0	1 0 1 0 1				1 0 0 1 0				1 0 0 1 0			
Volume Module:													
Base Vol:	28 440 9	29 407 31				41 59 20				11 43 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 Base:	28 440 9	29 407 31				41 59 20				11 43 43			
Added Vol:	0 0 0	0 0 0				0 0 0				0 0 0 0			
PasserByVol:	0 0 0	0 0 0				0 0 0				0 0 0 0			
Initial Fut:	28 440 9	29 407 31				41 59 20				11 43 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:	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:	28 440 9	29 407 31				41 59 20				11 43 43			
Reduct Vol:	0 0 0	0 0 0				0 0 0				0 0 0 0			
Reduced Vol:	28 440 9	29 407 31				41 59 20				11 43 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:	28 440 9	29 407 31				41 59 20				11 43 43			
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 0.94				1.00 1.00 1.00				0.94 1.00 0.94			
Lanes:	1.00 0.98 0.02	1.00 1.00 1.00				1.00 0.75 0.25				1.00 0.50 0.50			
Final Sat.:	1598 1666	34 1598 1700 1598				1598 1270 430 1598 850 850							
Capacity Analysis Module:													
Vol/Sat:	0.02 0.26 0.26	0.02 0.24 0.02				0.03 0.05 0.05				0.01 0.05 0.05			
Crit Moves:	****	****				****				****			

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project AM

Level Of Service Computation Report													
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)													
Intersection #12 Broadway (N/S) / 1st St (E/W)													
Cycle (sec):	100	Critical Vol./Cap.(X):								0.778			
Loss Time (sec):	5 (Y+R=4.0 sec)	Average Delay (sec/veh):								xxxxxxx			
Optimal Cycle:	48	Level Of Service:								C			
Approach:	North Bound	South Bound				East Bound				West Bound			
Movement:	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	L - T - R	
Control:	Protected	Protected				Protected				Protected			
Rights:	Include	Include				Include				Include			
Min. Green:	0 0 0	0 0 0				0 0 0				0 0 0			
Lanes:	1 0 1 0 1	1 0 1 0 1				1 0 2 1 0				1 0 2 1 0			
Volume Module:													
Base Vol:	69 405 119	87 392 95				216 1571 81				178 1190 119			
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 Base:	69 405 119	87 392 95				216 1571 81				178 1190 119			
Added Vol:	0 0 0	0 0 0				0 0 0				0 0 0 0			
PasserByVol:	0 0 0	0 0 0				0 0 0				0 0 0 0			
Initial Fut:	69 405 119	87 392 95				216 1571 81				178 1190 119			
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:	69 405 119	87 392 95				216 1571 81				178 1190 119			
Reduct Vol:	0 0 0	0 0 0				0 0 0				0 0 0 0			
Reduced Vol:	69 405 119	87 392 95				216 1571 81				178 1190 119			
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:	69 405 119	87 392 95				216 1571 81				178 1190 119			
Saturation Flow Module:													
Sat/Lane:	1700 1700 1700	1700 1700 1700				1700 1700 1700				1700 1700 1700			
Adjustment:	0.94 1.00 0.94	0.94 1.00 0.94				1.00 1.00 1.00				0.94 1.00 0.94			
Lanes:	1.00 1.00 1.00	1.00 1.00 1.00				1.00 2.85 0.15				1.00 2.73 0.27			
Final Sat.:	1598 1700 1598	1598 1700 1598				1598 4850 250 1598 4636 464							
Capacity Analysis Module:													
Vol/Sat:	0.04 0.24 0.07	0.05 0.23 0.06				0.14 0.32 0.32				0.11 0.26 0.26			
Crit Moves:	****	****				****				****			

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #13 Sycamore St (N/S) / Civic Center Dr (E/W)
Average Delay (sec/veh): 5 (Y+R=4.0 sec)
Approach: North Bound, South Bound, East Bound, West Bound
Control: Stop Sign, Uncontrolled
Volume Module: Base Vol, Growth Adj, Initial Base, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume

Traffic 7.9.0415 (c) 2007 Dowling Assoc. Licensed to KATZ OKITSU, TUSTIN, CA

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #14 Sycamore St (N/S) / Santa Ana Bl (E/W)
Average Delay (sec/veh): 4.1
Approach: North Bound, South Bound, East Bound, West Bound
Control: Stop Sign, Uncontrolled
Volume Module: Base Vol, Growth Adj, Initial Base, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume

Traffic 7.9.0415 (c) 2007 Dowling Assoc. Licensed to KATZ OKITSU, TUSTIN, CA

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #15 Sycamore St (N/S) / 5th St (E/W)
Average Delay (sec/veh): 3.9
Approach: North Bound, South Bound, East Bound, West Bound
Control: Stop Sign, Uncontrolled
Volume Module: Base Vol, Growth Adj, Initial Base, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume

Traffic 7.9.0415 (c) 2007 Dowling Assoc. Licensed to KATZ OKITSU, TUSTIN, CA

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #16 Sycamore St (N/S) / 4th St (E/W)
Average Delay (sec/veh): 3.9
Approach: North Bound, South Bound, East Bound, West Bound
Control: Stop Sign, Uncontrolled
Volume Module: Base Vol, Growth Adj, Initial Base, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCE Adj, MLF Adj, Final Volume

Traffic 7.9.0415 (c) 2007 Dowling Assoc. Licensed to KATZ OKITSU, TUSTIN, CA

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative) Intersection #17 Main St (N/S) / Civic Center Dr (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.899 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 86 Level Of Service: D

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative) Intersection #18 Main St (N/S) / Santa Ana Dr (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.810 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 54 Level Of Service: D

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative) Intersection #19 Main St (N/S) / 5th St (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.623 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 30 Level Of Service: B

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative) Intersection #20 Main St (N/S) / 4th St (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 0.654 Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx Optimal Cycle: 33 Level Of Service: B

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #21 Main St (N/S) / 3rd St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.559
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 26 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 0 1 0 1 0 1 0 0 0 1 0 0 1 0 0 1 0
Volume Module:
Base Vol: 0 1105 18 1 1375 27 44 110 37 16 85 16
Growth Adj: 1.00
Initial Base: 0 1105 18 1 1375 27 44 110 37 16 85 16
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 1105 18 1 1375 27 44 110 37 16 85 16
User Adj: 1.00
PHF Adj: 1.00
PHF Volume: 0 1105 18 1 1375 27 44 110 37 16 85 16
Reduct Vol: 0
Reduced Vol: 0 1105 18 1 1375 27 44 110 37 16 85 16
PCE Adj: 1.00
MLF Adj: 1.00
FinalVolume: 0 1105 18 1 1375 27 44 110 37 16 85 16
Saturation Flow Module:
Sat/Lane: 1700
Adjustment: 0.94 1.00 1.00 1.00 1.00 1.00 0.94 1.00 1.00 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: 0.00 1.97 0.03 0.01 1.96 0.03 1.00 0.75 0.25 1.00 0.84 0.16
Final Sat.: 0 3346 54 2 3332 65 1598 1272 428 1598 1431 269
Capacity Analysis Module:
Vol/Sat: 0.00 0.33 0.33 0.00 0.41 0.41 0.03 0.09 0.09 0.01 0.06 0.06
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #22 Main St (N/S) / 1st St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.927
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 100 Level Of Service: E
Approach: North Bound South Bound East Bound West Bound
Control: Protected Include Protected Include Protected Include Protected Include
Min. Green: 0
Lanes: 1 0 1 1 0 1 0 2 0 1 1 0 2 1 0 1 0 2 1 0 1 0 2 1 0
Volume Module:
Base Vol: 227 882 93 207 1059 135 152 1667 128 114 1138 90
Growth Adj: 1.00
Initial Base: 227 882 93 207 1059 135 152 1667 128 114 1138 90
Added Vol: 0
PasserByVol: 0
Initial Fut: 227 882 93 207 1059 135 152 1667 128 114 1138 90
User Adj: 1.00
PHF Adj: 1.00
PHF Volume: 227 882 93 207 1059 135 152 1667 128 114 1138 90
Reduct Vol: 0
Reduced Vol: 227 882 93 207 1059 135 152 1667 128 114 1138 90
PCE Adj: 1.00
MLF Adj: 1.00
FinalVolume: 227 882 93 207 1059 135 152 1667 128 114 1138 90
Saturation Flow Module:
Sat/Lane: 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 0.94 1.00 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 1.81 0.19 1.00 2.00 1.00 1.00 2.79 0.21 1.00 2.78 0.22
Final Sat.: 1598 3076 324 1598 3400 1598 1598 4736 364 1598 4726 374
Capacity Analysis Module:
Vol/Sat: 0.14 0.29 0.29 0.13 0.31 0.08 0.10 0.35 0.35 0.07 0.24 0.24
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #23 Bush St (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.346
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 18 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Min. Green: 0
Lanes: 1 0 1 0 0 0 0 0 1 0 0 0 0 0 0 0 1 1 1 1 0 0
Volume Module:
Base Vol: 27 158 0 0 110 43 0 0 0 29 829 104
Growth Adj: 1.00
Initial Base: 27 158 0 0 110 43 0 0 0 29 829 104
Added Vol: 0
PasserByVol: 0
Initial Fut: 27 158 0 0 110 43 0 0 0 29 829 104
User Adj: 1.00
PHF Adj: 1.00
PHF Volume: 27 158 0 0 110 43 0 0 0 29 829 104
Reduct Vol: 0
Reduced Vol: 27 158 0 0 110 43 0 0 0 29 829 104
PCE Adj: 1.00
MLF Adj: 1.00
FinalVolume: 27 158 0 0 110 43 0 0 0 29 829 104
Saturation Flow Module:
Sat/Lane: 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 1.00 0.94 1.00 0.94 1.00 0.94 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 0.00 0.00 0.72 0.28 0.00 0.00 0.00 0.09 2.59 0.32
Final Sat.: 1598 1700 0 0 1222 478 0 0 0 154 4395 551
Capacity Analysis Module:
Vol/Sat: 0.02 0.09 0.00 0.00 0.09 0.09 0.00 0.00 0.00 0.02 0.19 0.19
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #24 Bush St (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.296
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 17 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Include Permitted Include Permitted Include Permitted Include
Min. Green: 0
Lanes: 0 0 0 1 0 1 0 1 0 0 0 0 1 1 1 0 0 0 0 0 0 0 0 0
Volume Module:
Base Vol: 0 149 39 34 128 0 50 501 31 0 0 0 0
Growth Adj: 1.00
Initial Base: 0 149 39 34 128 0 50 501 31 0 0 0 0
Added Vol: 0
PasserByVol: 0
Initial Fut: 0 149 39 34 128 0 50 501 31 0 0 0 0
User Adj: 1.00
PHF Adj: 1.00
PHF Volume: 0 149 39 34 128 0 50 501 31 0 0 0 0
Reduct Vol: 0
Reduced Vol: 0 149 39 34 128 0 50 501 31 0 0 0 0
PCE Adj: 1.00
MLF Adj: 1.00
FinalVolume: 0 149 39 34 128 0 50 501 31 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 0.94 1.00 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: 0.00 0.79 0.21 1.00 1.00 0.00 0.26 2.58 0.16 0.00 0.00 0.00
Final Sat.: 0 1347 353 1598 1700 0 438 4390 272 0 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.00 0.11 0.11 0.11 0.02 0.08 0.00 0.03 0.11 0.11 0.00 0.00 0.00
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #25 Bush St (N/S) / 4th St (E/W). Cycle (sec): 100. Critical Vol./Cap.(X): 0.357. Loss Time (sec): 5 (Y+R=4.0 sec). Average Delay (sec/veh): xxxxxxx. Optimal Cycle: 19. Level Of Service: A.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #26 Spurgeon St (N/S) / 1st St (E/W). Average Delay (sec/veh): 0.2. Worst Case Level Of Service: B1 11.3]. Level Of Service: A.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #27 French St (N/S) / Santa Ana Bl (E/W). Average Delay (sec/veh): 3.7. Worst Case Level Of Service: D[26.1]. Level Of Service: A.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #28 French St (N/S) / 4th St (E/W). Cycle (sec): 100. Critical Vol./Cap.(X): 0.359. Loss Time (sec): 5 (Y+R=4.0 sec). Average Delay (sec/veh): xxxxxxx. Optimal Cycle: 19. Level Of Service: A.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #29 Lacy St (N/S) / Civic Center Dr (E/W)
Average Delay (sec/veh): 4.9 Worst Case Level Of Service: E [37.9]
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 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0
Volume Module:
Base Vol: 49 36 38 29 7 38 7 444 11 8 512 180
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 Base: 49 36 38 29 7 38 7 444 11 8 512 180
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 49 36 38 29 7 38 7 444 11 8 512 180
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: 49 36 38 29 7 38 7 444 11 8 512 180
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 49 36 38 29 7 38 7 444 11 8 512 180
Critical Gap Module:
Critical Gap: 7.1 6.5 6.2 7.1 6.5 6.2 4.1 xxxxx xxxxx 4.1 xxxxx xxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxx 2.2 xxxxx xxxxx
Capacity Module:
Conflict Vol: 1104 1172 450 1119 1087 602 692 xxxxx xxxxx 455 xxxxx xxxxx
Potent Cap.: 190 194 614 186 218 503 912 xxxxx xxxxx 1116 xxxxx xxxxx
Move Cap.: 169 191 614 147 215 503 912 xxxxx xxxxx 1116 xxxxx xxxxx
Volume/Cap: 0.29 0.19 0.06 0.20 0.03 0.08 0.01 xxxxx xxxxx 0.01 xxxxx xxxxx
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.0 xxxxx xxxxx 0.0 xxxxx xxxxx
Control Del: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 9.0 xxxxx xxxxx 8.2 xxxxx xxxxx
LOS by Move: * * * * * A * * * * * A * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx 228 xxxxx xxxxx 243 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue: xxxxx 2.9 xxxxx xxxxx 1.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd Condel: xxxxx 37.9 xxxxx xxxxx 26.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * * * D * * * * * * * * * *
ApproachDel: 37.9 * 26.2 * xxxxxxx * xxxxxxx
ApproachLOS: E D * * * * *
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #30 Lacy St (N/S) / Santa Ana Bl (E/W)
Average Delay (sec/veh): 5.5 Worst Case Level Of Service: F [55.7]
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 1 1 0 0 0 0 1 1 0 0 1 0 0 1 0 0
Volume Module:
Base Vol: 4 58 67 6 16 21 11 454 11 7 996 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 Base: 4 58 67 6 16 21 11 454 11 7 996 52
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 4 58 67 6 16 21 11 454 11 7 996 52
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: 4 58 67 6 16 21 11 454 11 7 996 52
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 4 58 67 6 16 21 11 454 11 7 996 52
Critical Gap Module:
Critical Gap: 7.1 6.5 6.2 7.1 6.5 6.2 4.1 xxxxx xxxxx 4.1 xxxxx xxxxx
FollowUpTim: 3.5 4.0 3.3 3.5 4.0 3.3 2.2 xxxxx xxxxx 2.2 xxxxx xxxxx
Capacity Module:
Conflict Vol: 1536 1544 460 1580 1523 1022 1048 xxxxx xxxxx 465 xxxxx xxxxx
Potent Cap.: 96 116 606 89 119 289 672 xxxxx xxxxx 1107 xxxxx xxxxx
Move Cap.: 78 113 606 47 117 289 672 xxxxx xxxxx 1107 xxxxx xxxxx
Volume/Cap: 0.05 0.51 0.11 0.13 0.14 0.07 0.02 xxxxx xxxxx 0.01 xxxxx xxxxx
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0.0 xxxxx xxxxx 0.0 xxxxx xxxxx
Control Del: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 10.4 xxxxx xxxxx 8.3 xxxxx xxxxx
LOS by Move: * * * * * B * * * * * A * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx 192 xxxxx xxxxx 127 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue: xxxxx 4.1 xxxxx xxxxx 1.4 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd Condel: xxxxx 55.7 xxxxx xxxxx 47.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: * * * * * E * * * * * * * * * *
ApproachDel: 55.7 * 47.2 * xxxxxxx * xxxxxxx
ApproachLOS: F E * * * * *
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)
Intersection #31 Lacy St (N/S) / Brown St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.131
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 7.4
Optimal Cycle: 0 Level Of Service: A
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 Stop Sign Stop Sign
Rights: Include Include Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 0 0 1 1 0 0
Volume Module:
Base Vol: 27 46 48 6 6 2 2 8 9 17 20 6
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 Base: 27 46 48 6 6 2 2 8 9 17 20 6
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 27 46 48 6 6 2 2 8 9 17 20 6
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: 27 46 48 6 6 2 2 8 9 17 20 6
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 27 46 48 6 6 2 2 8 9 17 20 6
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: 27 46 48 6 6 2 2 8 9 17 20 6
Saturation Flow Module:
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: 0.22 0.38 0.40 0.43 0.43 0.14 0.11 0.42 0.47 0.40 0.46 0.14
Final Sat.: 206 351 366 366 366 122 93 372 418 330 389 117
Capacity Analysis Module:
Vol/Sat: 0.13 0.13 0.13 0.02 0.02 0.02 0.02 0.02 0.02 0.05 0.05 0.05
Crit Moves: * * * * *
Delay/Veh: 7.4 7.4 7.4 7.2 7.2 7.2 7.0 7.0 7.0 7.4 7.4 7.4
Delay Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 7.4 7.4 7.4 7.2 7.2 7.2 7.0 7.0 7.0 7.4 7.4 7.4
LOS by Move: A A A A A A A A A A A A
ApproachDel: 7.4 * 7.2 * * * * *
Delay Adj: 1.00 * 1.00 * * * * *
ApprAdjDel: 7.4 * 7.2 * * * * *
LOS by Appr: A A A A A A A A
AllWayAvgQ: 0.1 0.1 0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.1 0.1 0.1
Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report
ICU 1 (Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #32 Lacy St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.465
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 22 Level Of Service: A
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 0 0 0 0
Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 1 0 1 0 1
Volume Module:
Base Vol: 23 36 94 13 30 47 13 362 28 13 525 67
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 Base: 23 36 94 13 30 47 13 362 28 13 525 67
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 23 36 94 13 30 47 13 362 28 13 525 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: 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: 23 36 94 13 30 47 13 362 28 13 525 67
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 23 36 94 13 30 47 13 362 28 13 525 67
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: 23 36 94 13 30 47 13 362 28 13 525 67
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 0.94 1.00 1.00 0.94 1.00 0.94
Lanes: 0.15 0.24 0.61 0.14 0.33 0.53 1.00 0.93 0.07 1.00 1.00 1.00
Final Sat.: 256 400 1044 246 567 888 1598 1578 122 1598 1700 1598
Capacity Analysis Module:
Vol/Sat: 0.01 0.09 0.09 0.01 0.05 0.05 0.01 0.23 0.23 0.01 0.31 0.04
Crit Moves: * * * * *
Note: Queue reported is the number of cars per lane.

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Level Of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative) Intersection #33 Lacy St (N/S) / 1st St (E/W) ... Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Capacity Module, Saturation Flow Module, and Capacity Analysis Module.

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Level Of Service Computation Report 2000 HCM 4-Way Stop Method (Future Volume Alternative) Intersection #34 Santiago St (N/S) / Washington Av (E/W) ... Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Capacity Module, Saturation Flow Module, and Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report 2000 HCM 4-Way Stop Method (Future Volume Alternative) Intersection #35 Santiago St (N/S) / Civic Center Dr (E/W) ... Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Capacity Module, Saturation Flow Module, and Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative) Intersection #36 Santiago St (N/S) / Santa Ana Bl (E/W) ... Table with columns for Approach, Movement, Control, Rights, Lanes, Volume Module, Capacity Module, Saturation Flow Module, and Capacity Analysis Module.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #37 Santiago St (N/S) / Brown St (E/W)
Average Delay (sec/veh): 3.8 Worst Case Level Of Service: C [16.7]
Approach: North Bound South Bound East Bound West Bound
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 1 1 0 0 1 1 1 0 1 0 0 1 0 0 0 0 0 0
Volume Module:
Base Vol: 75 204 0 0 388 110 130 0 50 0 0 0 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 1.00
Initial Base: 75 204 0 0 388 110 130 0 50 0 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 75 204 0 0 388 110 130 0 50 0 0 0 0 0 0
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 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 1.00
PHF Volume: 75 204 0 0 388 110 130 0 50 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 75 204 0 0 388 110 130 0 50 0 0 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxxx xxxxx 6.8 6.5 6.9 xxxxx xxxxx xxxxx
FollowUpTim: 2.2 xxxxx xxxxx 3.5 4.0 3.3 xxxxx xxxxx xxxxx
Capacity Module:
Conflict Vol: 498 xxxxx xxxxx 661 797 184 xxxxx xxxxx xxxxx
Potent Cap.: 1076 xxxxx xxxxx 400 322 833 xxxxx xxxxx xxxxx
Move Cap.: 1076 xxxxx xxxxx 378 298 833 xxxxx xxxxx xxxxx
Volume/Cap: 0.07 xxxxx xxxxx 0.34 0.00 0.06 xxxxx xxxxx xxxxx
Level Of Service Module:
2Way95thQ: 0.2 xxxxx xxxxx 1.5 xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del: 8.6 xxxxx xxxxx 19.4 xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: A * * * * * C * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue: 0.2 xxxxx xxxxx 0.0 xxxxx xxxxx xxxxx 0.2 xxxxx xxxxx xxxxx
Shrd ConDel: 8.6 xxxxx xxxxx 9.0 xxxxx xxxxx xxxxx xxxxx 9.6 xxxxx xxxxx xxxxx
Shared LOS: A * * * * * A * * * * *
ApproachDel: xxxxxxx xxxxxxx 16.7 xxxxxxx
ApproachLOS: * * * * * C * * * * *

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #38 Santiago St (N/S) / 6th St (E/W)
Average Delay (sec/veh): 3.6 Worst Case Level Of Service: B [13.7]
Approach: North Bound South Bound East Bound West Bound
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 1 1 0 0 1 1 1 0 1 0 0 0 1 0 0 0 0 0
Volume Module:
Base Vol: 38 141 0 0 320 118 138 0 50 0 0 0 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 1.00
Initial Base: 38 141 0 0 320 118 138 0 50 0 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 38 141 0 0 320 118 138 0 50 0 0 0 0 0 0
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 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 1.00
PHF Volume: 38 141 0 0 320 118 138 0 50 0 0 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 38 141 0 0 320 118 138 0 50 0 0 0 0 0 0
Critical Gap Module:
Critical Gp: 4.1 xxxxx xxxxx xxxxx xxxxx xxxxx 6.8 xxxxx 6.9 xxxxx xxxxx xxxxx
FollowUpTim: 2.2 xxxxx xxxxx xxxxx xxxxx xxxxx 3.5 xxxxx 3.3 xxxxx xxxxx xxxxx
Capacity Module:
Conflict Vol: 438 xxxxx xxxxx xxxxx xxxxx xxxxx 502 xxxxx 166 xxxxx xxxxx xxxxx
Potent Cap.: 1133 xxxxx xxxxx xxxxx xxxxx xxxxx 504 xxxxx 856 xxxxx xxxxx xxxxx
Move Cap.: 1133 xxxxx xxxxx xxxxx xxxxx xxxxx 490 xxxxx 856 xxxxx xxxxx xxxxx
Volume/Cap: 0.03 xxxxx xxxxx xxxxx xxxxx xxxxx 0.28 xxxxx 0.06 xxxxx xxxxx xxxxx
Level Of Service Module:
2Way95thQ: 0.1 xxxxx xxxxx xxxxx xxxxx xxxxx 1.1 xxxxx 0.2 xxxxx xxxxx xxxxx
Control Del: 8.3 xxxxx xxxxx xxxxx xxxxx xxxxx 15.2 xxxxx 9.5 xxxxx xxxxx xxxxx
LOS by Move: A * * * * * C * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
SharedQueue: 0.1 xxxxx xxxxx 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shrd ConDel: 8.3 xxxxx xxxxx 9.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Shared LOS: A * * * * * A * * * * *
ApproachDel: xxxxxxx xxxxxxx 13.7 xxxxxxx
ApproachLOS: * * * * * B * * * * *

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #39 Santiago St (N/S) / 4th (E/W)
Average Delay (sec/veh): OVERFLOW Worst Case Level Of Service: F [xxxxxx]
Approach: North Bound South Bound East Bound West Bound
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 1 1 1 0 1 0 2 1 0 0 1 0 1 0 0 1 0 1 0
Volume Module:
Base Vol: 64 98 264 19 137 214 10 957 73 12 504 71
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 Base: 64 98 264 19 137 214 10 957 73 12 504 71
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 64 98 264 19 137 214 10 957 73 12 504 71
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 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 1.00
PHF Volume: 64 98 264 19 137 214 10 957 73 12 504 71
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 64 98 264 19 137 214 10 957 73 12 504 71
Critical Gap Module:
Critical Gp: 4.1 xxxxx xxxxx 4.1 xxxxx xxxxx 7.5 6.5 6.9 7.5 6.5 6.9
FollowUpTim: 2.2 xxxxx xxxxx 2.2 xxxxx xxxxx 3.5 4.0 3.3 3.5 4.0 3.3
Capacity Module:
Conflict Vol: 351 xxxxx xxxxx 362 xxxxx xxxxx 695 772 153 920 747 165
Potent Cap.: 1219 xxxxx xxxxx 1208 xxxxx xxxxx 333 333 872 229 344 857
Move Cap.: 1219 xxxxx xxxxx 1208 xxxxx xxxxx 0 306 872 0 317 857
Volume/Cap: 0.05 xxxxx xxxxx 0.02 xxxxx xxxxx xxxxx 3.12 0.08 xxxxx 1.59 0.08
Level Of Service Module:
2Way95thQ: 0.2 xxxxx xxxxx 0.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Control Del: 8.1 xxxxx xxxxx 8.0 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
LOS by Move: A * * * * * A * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 0 xxxxx 321 0 xxxxx 343
SharedQueue: 0.2 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 35.1
Shrd ConDel: 8.1 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx 1026 xxxxx xxxxx 343.0
Shared LOS: A * * * * * A * * * * * F * * * * *
ApproachDel: xxxxxxx xxxxxxx xxxxxxx xxxxxxx
ApproachLOS: * * * * * F * * * * *

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #40 Standard Av (N/S) / 1st St (E/W)
Cycle (sec): 100 Critical Vol./Cap. (X): 0.957
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 100 Level Of Service: E
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Protected Protected
Rights: Include Include Include Include
Lanes: 1 0 0 1 0 0 0 1 1 0 0 1 0 1 1 0 1 0 1 1 0
Volume Module:
Base Vol: 85 200 141 49 323 8 107 1800 172 81 1219 14
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 Base: 85 200 141 49 323 8 107 1800 172 81 1219 14
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 85 200 141 49 323 8 107 1800 172 81 1219 14
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 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 1.00
PHF Volume: 85 200 141 49 323 8 107 1800 172 81 1219 14
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 85 200 141 49 323 8 107 1800 172 81 1219 14
PCF Adj: 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
MPL Adj: 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
FinalVolume: 85 200 141 49 323 8 107 1800 172 81 1219 14
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 1.00 1.00 1.00 0.94 1.00 1.00 0.94 1.00 1.00
Lanes: 1.00 0.59 0.41 0.13 0.85 0.02 1.00 1.83 0.17 1.00 1.98 0.02
Final Sat.: 1598 997 703 219 1445 36 1598 3103 297 1598 3361 39
Capacity Analysis Module:
Vol/Sat: 0.05 0.20 0.20 0.03 0.22 0.22 0.07 0.58 0.58 0.05 0.36 0.36
Crit Moves: **** **** **** ****

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #41 U-24 (N/S) / Santa Ana Bl (E/W)
Average Delay (sec/veh): 1.9 Worst Case Level Of Service: F [79.4]
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 0 1 1 0 0 2 1 0 0
Volume Module:
Base Vol: 0 0 0 44 0 13 10 1008 0 0 1375 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: 0 0 0 44 0 13 10 1008 0 0 1375 28
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 44 0 13 10 1008 0 0 1375 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: 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: 0 0 0 44 0 13 10 1008 0 0 1375 28
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 0 0 44 0 13 10 1008 0 0 1375 28
Critical Gap Module:
Critical Gap: xxxxxx xxxxxx xxxxxx 6.8 xxxxx 6.9 4.1 xxxxx xxxxxx xxxxxx xxxxxx xxxxxx
FollowUpTim: xxxxxx xxxxxx xxxxxx 3.5 xxxxx 3.3 2.2 xxxxx xxxxxx xxxxxx xxxxxx xxxxxx
Capacity Module:
Conflict Vol: xxxxx xxxxx xxxxxx 1745 xxxxx 472 1403 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Potent Cap.: xxxxx xxxxx xxxxxx 79 xxxxx 544 493 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Move Cap.: xxxxx xxxxx xxxxxx 78 xxxxx 544 493 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Volume/Cap: xxxxx xxxxx xxxxx 0.56 xxxxx 0.02 0.02 xxxxx xxxxx xxxxx xxxxx xxxxx
Level of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx 2.5 xxxxx 0.1 0.1 xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del: xxxxxx xxxxx xxxxxx 99.4 xxxxx 11.8 12.5 xxxxx xxxxxx xxxxxx xxxxx xxxxxx
LOS by Move: * * * * * B B * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
SharedQueue: xxxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Shrd Condel: xxxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Shared LOS: * * * * *
ApproachDel: xxxxxxxx 79.4 xxxxxxxx xxxxxxxx
ApproachLOS: * * * * *

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Level Of Service Computation Report
ICU (Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #42 Grand Av (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 1.188
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 100 Level Of Service: F
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 Split Phase Split Phase
Rights: Include Include Include Include
Lanes: 1 0 2 1 0 1 0 2 0 2 2 0 1 0 2 0 1 0 1 0
Volume Module:
Base Vol: 192 1052 31 140 2161 1199 439 231 765 27 113 34
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: 192 1052 31 140 2161 1199 439 231 765 27 113 34
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 192 1052 31 140 2161 1199 439 231 765 27 113 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 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 1.00
PHF Volume: 192 1052 31 140 2161 1199 439 231 765 27 113 34
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 192 1052 31 140 2161 1199 439 231 765 27 113 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 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 1.00
FinalVolume: 192 1052 31 140 2161 1199 439 231 765 27 113 34
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00 1.00
Lanes: 1.00 2.91 0.09 1.00 2.00 2.00 2.00 2.00 2.00 0.31 1.30 0.39
Final Sat.: 1598 4954 146 1598 3400 3196 3196 1700 3196 528 2208 664
Capacity Analysis Module:
Vol/Sat: 0.12 0.21 0.21 0.09 0.64 0.38 0.14 0.14 0.24 0.05 0.05 0.05
Crit Moves: **** **** **** **** ****

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
ICU (Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #43 Grand Av (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.754
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 44 Level Of Service: C
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: Include Include Include Include
Lanes: 1 0 3 0 1 1 0 2 1 0 1 0 1 1 0 1 0 2 0 1
Volume Module:
Base Vol: 85 338 137 152 598 107 127 1300 183 139 382 147
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: 85 338 137 152 598 107 127 1300 183 139 382 147
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 85 338 137 152 598 107 127 1300 183 139 382 147
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: 85 338 137 152 598 107 127 1300 183 139 382 147
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 85 338 137 152 598 107 127 1300 183 139 382 147
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: 85 338 137 152 598 107 127 1300 183 139 382 147
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 0.94 1.00 0.94 1.00 0.94 1.00 0.94
Lanes: 1.00 3.00 1.00 1.00 2.54 0.46 1.00 1.75 0.25 1.00 2.00 1.00
Final Sat.: 1598 5100 1598 1598 4326 774 1598 2980 420 1598 3400 1598
Capacity Analysis Module:
Vol/Sat: 0.05 0.07 0.09 0.10 0.14 0.14 0.08 0.44 0.44 0.09 0.11 0.09
Crit Moves: **** **** **** ****

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM

Level Of Service Computation Report
ICU (Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #44 Grand Av (N/S) / 1st St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.918
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 99 Level Of Service: E
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: Include Include Include Include
Lanes: 2 0 2 1 0 2 0 3 0 1 2 0 2 1 0 2 0 2 0 1
Volume Module:
Base Vol: 361 695 89 148 1620 137 354 1277 346 382 783 74
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: 361 695 89 148 1620 137 354 1277 346 382 783 74
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 361 695 89 148 1620 137 354 1277 346 382 783 74
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: 361 695 89 148 1620 137 354 1277 346 382 783 74
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 361 695 89 148 1620 137 354 1277 346 382 783 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: 361 695 89 148 1620 137 354 1277 346 382 783 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 0.94 1.00 0.94 1.00 0.94 1.00 0.94
Lanes: 2.00 2.66 0.34 2.00 3.00 1.00 2.00 2.36 0.64 2.00 2.00 1.00
Final Sat.: 3196 4521 679 3196 5100 1598 3196 4013 1087 3196 3400 1598
Capacity Analysis Module:
Vol/Sat: 0.11 0.15 0.15 0.05 0.32 0.09 0.11 0.32 0.32 0.12 0.23 0.05
Crit Moves: **** **** **** ****

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM. Level Of Service Computation Report. 2000 HCM Operations Method (Future Volume Alternative). Intersection #45 Penn Way (NS) at I-5 SB Ramps (EW). Cycle (sec): 100. Critical Vol./Cap.(X): 0.546. Loss Time (sec): 12 (Y+R=4.0 sec). Average Delay (sec/veh): 25.0. Optimal Cycle: 44. Level Of Service: C. Approach: North Bound, South Bound, East Bound, West Bound. Control: Split Phase, Split Phase, Permitted, Permitted. Rights: Include, Include, Include, Include. Min. Green: 0 0 0 0. Lanes: 0 0 2 0 1 2 0 2 0 0 0 0 0 0 0 0 0 0 2. Volume Module: Base Vol: 0 273 133 736 289 0 0 0 0 274 0 252. Saturation Flow Module: Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900. Capacity Analysis Module: Vol/Sat: 0.00 0.08 0.08 0.21 0.08 0.00 0.00 0.00 0.19 0.00 0.09. Crit Moves: ****. Green/Cycle: 0.00 0.15 0.15 0.39 0.39 0.00 0.00 0.00 0.34 0.00 0.73. Volume/Cap: 0.00 0.50 0.55 0.55 0.21 0.00 0.00 0.00 0.55 0.00 0.12. Delay/Veh: 0.0 39.7 41.8 24.4 20.6 0.0 0.0 0.0 0.0 27.8 0.0 4.1. User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. AdjDel/Veh: 0.0 39.7 41.8 24.4 20.6 0.0 0.0 0.0 0.0 27.8 0.0 4.1. LOS by Move: A D C C A A A A C A A C. HCM2kAvgQ: 0 5 5 9 3 0 0 0 0 7 0 1. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM. Level Of Service Computation Report. 2000 HCM Operations Method (Future Volume Alternative). Intersection #46 I-5 SB Ramps (NS) / Santa Ana Bl (EW). Cycle (sec): 100. Critical Vol./Cap.(X): 0.668. Loss Time (sec): 12 (Y+R=4.0 sec). Average Delay (sec/veh): 30.5. Optimal Cycle: 55. Level Of Service: C. Approach: North Bound, South Bound, East Bound, West Bound. Control: Split Phase, Split Phase, Split Phase, Split Phase. Rights: Include, Include, Include, Include. Min. Green: 0 0 0 0. Lanes: 0 0 0 0 0 2 0 0 0 1 2 0 3 0 0 0 0 0 2 1 0. Volume Module: Base Vol: 0 0 0 508 0 122 340 841 0 0 0 1203 219. Saturation Flow Module: Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900. Capacity Analysis Module: Vol/Sat: 0.00 0.00 0.00 0.15 0.00 0.08 0.10 0.16 0.00 0.00 0.28 0.28. Crit Moves: ****. Green/Cycle: 0.00 0.00 0.00 0.22 0.00 0.22 0.24 0.24 0.00 0.00 0.42 0.42. Volume/Cap: 0.00 0.00 0.00 0.67 0.00 0.35 0.40 0.67 0.00 0.00 0.67 0.67. Delay/Veh: 0 0 0 38.1 0 0 39.7 32.1 35.6 0 0 0 24.2 24.2. User DelAdj: 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. AdjDel/Veh: 0.0 0.0 0.0 38.1 0.0 33.7 32.1 35.6 0.0 0.0 24.2 24.2. LOS by Move: A A A A D A C C D A A C C. HCM2kAvgQ: 0 0 0 8 0 3 5 10 0 0 14 14. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM. Level Of Service Computation Report. 2000 HCM Operations Method (Future Volume Alternative). Intersection #47 I-5 NB Ramps (NS) / 17th St. (EW). Cycle (sec): 100. Critical Vol./Cap.(X): 0.901. Loss Time (sec): 16 (Y+R=4.0 sec). Average Delay (sec/veh): 39.7. Optimal Cycle: 100. Level Of Service: D. Approach: North Bound, South Bound, East Bound, West Bound. Control: Split Phase, Split Phase, Protected, Protected. Rights: Include, Include, Ignore, Include. Min. Green: 0 0 0 0. Lanes: 1 1 0 0 1 1 0 0 0 1 1 0 3 0 1 0 0 2 1 0. Volume Module: Base Vol: 767 99 44 44 0 226 150 1055 310 0 1468 59. Saturation Flow Module: Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900. Capacity Analysis Module: Vol/Sat: 0.24 0.24 0.03 0.02 0.00 0.14 0.08 0.20 0.00 0.00 0.30 0.30. Crit Moves: ****. Green/Cycle: 0.26 0.26 0.16 0.00 0.16 0.09 0.42 0.00 0.00 0.33 0.33. Volume/Cap: 0.90 0.90 0.10 0.16 0.00 0.90 0.90 0.48 0.00 0.00 0.90 0.90. Delay/Veh: 47.0 47.0 28.0 36.8 0.0 73.5 87.4 21.2 0.0 0.0 39.1 39.1. User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. AdjDel/Veh: 47.0 47.0 28.0 36.8 0.0 73.5 87.4 21.2 0.0 0.0 39.1 39.1. LOS by Move: D D C D A E F C A A D D. HCM2kAvgQ: 17 17 1 1 0 10 8 9 0 0 20 20. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project AM. Level Of Service Computation Report. 2000 HCM Operations Method (Future Volume Alternative). Intersection #48 I-5 NB Ramps (NS) / Grand Ave (EW). Cycle (sec): 100. Critical Vol./Cap.(X): 1.143. Loss Time (sec): 12 (Y+R=4.0 sec). Average Delay (sec/veh): 79.9. Optimal Cycle: 100. Level Of Service: E. Approach: North Bound, South Bound, East Bound, West Bound. Control: Protected, Protected, Split Phase, Split Phase. Rights: Ignore, Include, Include, Include. Min. Green: 0 0 0 0. Lanes: 0 1 2 0 1 1 0 3 0 0 0 0 0 0 0 2 0 0 0 1. Volume Module: Base Vol: 4 1055 565 108 2689 0 0 0 0 991 0 321. Saturation Flow Module: Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900. Capacity Analysis Module: Vol/Sat: 0.20 0.20 0.00 0.06 0.52 0.00 0.00 0.00 0.00 0.28 0.00 0.20. Crit Moves: ****. Green/Cycle: 0.18 0.49 0.00 0.14 0.45 0.00 0.00 0.00 0.00 0.25 0.00 0.25. Volume/Cap: 1.14 0.42 0.00 0.42 1.14 0.00 0.00 0.00 0.00 1.14 0.00 0.80. Delay/Veh: 118.2 16.5 0.0 40.1 97.2 0.0 0.0 0.0 0.0 115.5 0.0 46.4. User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00. AdjDel/Veh: 118.2 16.5 0.0 40.1 97.2 0.0 0.0 0.0 0.0 115.5 0.0 46.4. LOS by Move: F B A D F A A A A F A D. HCM2kAvgQ: 21 8 0 3 49 0 0 0 0 27 0 11. Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project AM

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #49 Mortimer (N/S) / Santa Ana Blvd (E/W)

Average Delay (sec/veh): 11.2 Worst Case Level Of Service: F[324.2]

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 0 1	0 0 1 1 0 0	0 1 0 0 0 0	1 0 0 0 1 0

Volume Module:

Base Vol:	0 0	0 10 0 88	184 1662 0	0 1067 26
Growth Adj:	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 10 0 88	184 1662 0	0 1067 26
Added Vol:	0 0	0 0 0 0	0 0 0 0	0 0 0 0
PasserByVol:	0 0	0 0 0 0	0 0 0 0	0 0 0 0
Initial Fut:	0 0	0 10 0 88	184 1662 0	0 1067 26
User Adj:	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
PHF Volume:	0 0	0 10 0 88	184 1662 0	0 1067 26
Reduct Vol:	0 0	0 0 0 0	0 0 0 0	0 0 0 0
FinalVolume:	0 0	0 10 0 88	184 1662 0	0 1067 26

Critical Gap Module:

Critical Gap:	xxxxx xxxxx	6.2 6.4 6.5 6.2	4.1 xxxxx xxxxx xxxxx xxxxx
FollowUpTim:	xxxxx xxxxx	3.3 3.5 4.0 3.3	2.2 xxxxx xxxxx xxxxx xxxxx

Capacity Module:

Conflict Vol:	xxxxx xxxxx	1662 3110 3110 1080	1093 xxxxx xxxxx xxxxx xxxxx xxxxx
Potent Cap.:	xxxxx xxxxx	121 13 12 268	646 xxxxx xxxxx xxxxx xxxxx xxxxx
Move Cap.:	xxxxx xxxxx	121 10 8 268	646 xxxxx xxxxx xxxxx xxxxx xxxxx
Volume/Cap.:	xxxxx xxxxx	0.00 1.02 0.00 0.33	0.28 xxxxx xxxxx xxxxx xxxxx xxxxx

Level Of Service Module:

2Way95thQ:	xxxxx xxxxx xxxxx	xxxxx xxxxx xxxxx	1.2 xxxxx xxxxx xxxxx xxxxx xxxxx	
Control Del:	xxxxxx xxxxx xxxxx xxxxx xxxxx	12.8 xxxxx xxxxx xxxxx xxxxx xxxxx		
LOS by Move:	* * * * *	* * * * *	* * * * *	
Movement:	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT	LT - LTR - RT
Shared Cap.:	xxxxx xxxxx xxxxx xxxxx	73 xxxxx	xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx	
SharedQueue:	xxxxxx xxxxx xxxxx xxxxx	7.9 xxxxx	1.2 xxxxx xxxxx xxxxx xxxxx xxxxx	
Shrd ConDel:	xxxxxx xxxxx xxxxx xxxxx	324 xxxxx	12.8 xxxxx xxxxx xxxxx xxxxx xxxxx	
Shared LOS:	* * * * *	* * * * *	* * * * *	
ApproachDel:	xxxxxxx	324.2	xxxxxxx xxxxxx	
ApproachLOS:	*	F	xxxxxxx	

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

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project AM

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)

Intersection #50 Mortimer (N/S) / 5th St (E/W)

Cycle (sec): 100 Critical Vol./Cap. (X): 0.345

Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 9.5

Optimal Cycle: Level Of Service: A

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	Stop Sign	Stop Sign
Rights:	Include	Include	Include	Include
Lanes:	0 0 0 1 0	0 0 1 1 0 0	1 0 0 1 0 0	0 0 0 1 0 0

Volume Module:

Base Vol:	0 150	6 4 22 3	223 32 43 7	0 0 11
Growth Adj:	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Initial Bse:	0 150	6 4 22 3	223 32 43 7	0 0 11
Added Vol:	0 0	0 0 0 0	0 0 0 0	0 0 0 0
PasserByVol:	0 0	0 0 0 0	0 0 0 0	0 0 0 0
Initial Fut:	0 150	6 4 22 3	223 32 43 7	0 0 11
User Adj:	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
PHF Volume:	0 150	6 4 22 3	223 32 43 7	0 0 11
Reduct Vol:	0 0	0 0 0 0	0 0 0 0	0 0 0 0
Reduced Vol:	0 150	6 4 22 3	223 32 43 7	0 0 11
PCE Adj:	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
MLP Adj:	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
FinalVolume:	0 150	6 4 22 3	223 32 43 7	0 0 11

Saturation Flow Module:

Adjustment:	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
Lanes:	0.00 0.96	0.04 0.14 0.76	0.10 1.00 0.43	0.57 0.39 0.00
Final Sat.:	0 707	28 97 534 73	647 330 443 297	0 466

Capacity Analysis Module:

Vol/Sat:	xxxxx 0.21	0.21 0.04 0.04 0.04	0.34 0.10 0.10	0.02 xxxxx 0.02
Crit Moves:	xxxxx	xxxxx	xxxxx	xxxxx
Delay/Veh:	0.0 8.9	8.9 8.0 8.0 8.0	8.0 10.9 7.7 7.7	7.6 0.0 7.6
Delay Adj:	1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00	1.00 1.00 1.00
AdjDel/Veh:	0.0 8.9	8.9 8.0 8.0 8.0	8.0 10.9 7.7 7.7	7.6 0.0 7.6
LOS by Move:	* A A A A	A A A A	A A A A	* A * A
ApproachDel:	8.9	8.0	10.1	7.6
Delay Adj:	1.00	1.00	1.00	1.00
ApprAdjDel:	8.9	8.0	10.1	7.6
LOS by Appr:	A	A	B	A
AllWayAvgQ:	0.2 0.2	0.2 0.0 0.0 0.0	0.5 0.1 0.1	0.0 0.0 0.0

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

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project PM

Scenario Report

Scenario: 2035WPPM

Command: 2035WP PM

Volume: 2035WPPM

Geometry: Future

Impact Fee: Default Impact Fee

Trip Generation: Default Trip Generation

Trip Distribution: Default Trip Distribution

Paths: Default Path

Routes: Default Route

Configuration: Default Configuration

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project PM

Impact Analysis Report
Level Of Service

Intersection	Base		Future		Change
	Del/ LOS Veh	V/ C	Del/ LOS Veh	V/ C	
# 1 Flower St (NS) / Civic Center D	F xxxxxx	1.146	F xxxxxx	1.146	+ 0.000 V/C
# 2 Flower St (N/S) / Santa Ana Bl	C xxxxxx	0.703	C xxxxxx	0.703	+ 0.000 V/C
# 3 Parton St (E/W) / Santa Ana Bl	A xxxxxx	0.434	A xxxxxx	0.434	+ 0.000 V/C
# 4 Ross St (N/S) / Civic Center D	A xxxxxx	0.594	A xxxxxx	0.594	+ 0.000 V/C
# 5 Ross St (N/S) / Santa Ana Bl	B xxxxxx	0.693	B xxxxxx	0.693	+ 0.000 V/C
# 6 Ross St (N/S) / 4th St (E/W)	B	13.8 0.000	B	13.8 0.000	+ 0.000 D/V
# 7 Broadway (N/S) / Civic Center	C xxxxxx	0.754	C xxxxxx	0.754	+ 0.000 V/C
# 8 Broadway (N/S) / Santa Ana Bl	B xxxxxx	0.624	B xxxxxx	0.624	+ 0.000 V/C
# 9 Broadway (N/S) / 5th St (E/W)	B xxxxxx	0.645	B xxxxxx	0.645	+ 0.000 V/C
# 10 Broadway (N/S) / 4th St (E/W)	B xxxxxx	0.659	B xxxxxx	0.659	+ 0.000 V/C
# 11 Broadway (N/S) / 3rd St (E/W)	D xxxxxx	0.833	D xxxxxx	0.833	+ 0.000 V/C
# 12 Broadway (N/S) / 1st St (E/W)	D xxxxxx	0.868	D xxxxxx	0.868	+ 0.000 V/C
# 13 Sycamore St (N/S) / Civic Cent	B xxxxxx	0.603	B xxxxxx	0.603	+ 0.000 V/C
# 14 Sycamore St (N/S) / Santa Ana	D 34.5	0.000	D 34.5	0.000	+ 0.000 D/V
# 15 Sycamore St (N/S) / 5th St (E/	C 18.1	0.000	C 18.1	0.000	+ 0.000 D/V
# 16 Sycamore St (N/S) / 4th St (E/	B 10.5	0.464	B 10.5	0.464	+ 0.000 V/C
# 17 Main St (N/S) / Civic Center D	E xxxxxx	0.938	E xxxxxx	0.938	+ 0.000 V/C
# 18 Main St (N/S) / Santa Ana Dr	D xxxxxx	0.869	D xxxxxx	0.869	+ 0.000 V/C
# 19 Main St (N/S) / 5th St (E/W)	D xxxxxx	0.843	D xxxxxx	0.843	+ 0.000 V/C
# 20 Main St (N/S) / 4th St (E/W)	D xxxxxx	0.847	D xxxxxx	0.847	+ 0.000 V/C
# 21 Main St (N/S) / 3rd St (E/W)	C xxxxxx	0.730	C xxxxxx	0.730	+ 0.000 V/C
# 22 Main St (N/S) / 1st St (E/W)	F xxxxxx	1.097	F xxxxxx	1.097	+ 0.000 V/C
# 23 Bush St (N/S) / Santa Ana Bl	A xxxxxx	0.467	A xxxxxx	0.467	+ 0.000 V/C
# 24 Bush St (N/S) / 5th St (E/W)	A xxxxxx	0.577	A xxxxxx	0.577	+ 0.000 V/C

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project PM

Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh	Del/ LOS	V/ Veh	
# 25 Bush St (N/S) / 4th St (E/W)	B	xxxxx 0.602	B	xxxxx 0.602	+ 0.000 V/C
# 26 Spurgeon St (N/S) / 1st St (E/W)	C	20.0 0.000	C	20.0 0.000	+ 0.000 D/V
# 27 French St (N/S) / Santa Ana Bl	D	29.6 0.000	D	29.6 0.000	+ 0.000 D/V
# 28 French St (N/S) / 4th St (E/W)	A	xxxxx 0.568	A	xxxxx 0.568	+ 0.000 V/C
# 29 Lacy St (N/S) / Civic Center D	F	113.5 0.000	F	113.5 0.000	+ 0.000 D/V
# 30 Lacy St (N/S) / Santa Ana Bl (	F	OVRLP 0.000	F	OVRLP 0.000	+ 0.000 D/V
# 31 Lacy St (N/S) / Brown St (E/W)	A	8.6 0.302	A	8.6 0.302	+ 0.000 V/C
# 32 Lacy St (N/S) / 4th St (E/W)	D	xxxxx 0.814	D	xxxxx 0.814	+ 0.000 V/C
# 33 Lacy St (N/S) / 1st St (E/W)	F	OVRLP 0.000	F	OVRLP 0.000	+ 0.000 D/V
# 34 Santiago St (N/S) / Washington	F	164.9 1.471	F	164.9 1.471	+ 0.000 V/C
# 35 Santiago St (N/S) / Civic Cent	F	266.2 2.021	F	266.2 2.021	+ 0.000 V/C
# 36 Santiago St (N/S) / Santa Ana	F	xxxxx 1.011	F	xxxxx 1.011	+ 0.000 V/C
# 37 Santiago St (N/S) / Brown St (	C	19.7 0.000	C	19.7 0.000	+ 0.000 D/V
# 38 Santiago St (N/S) / 6th St (E/	C	20.9 0.000	C	20.9 0.000	+ 0.000 D/V
# 39 Santiago St (N/S) / 4th (E/W)	F	OVRLP 0.000	F	OVRLP 0.000	+ 0.000 D/V
# 40 Standard Av (N/S) / 1st St (E/	E	xxxxx 0.988	E	xxxxx 0.988	+ 0.000 V/C
# 41 U-24 (N/S) / Santa Ana Bl (E/W	F	130.8 0.000	F	130.8 0.000	+ 0.000 D/V
# 42 Grand Av (N/S) / Santa Ana Bl	F	xxxxx 1.314	F	xxxxx 1.314	+ 0.000 V/C
# 43 Grand Av (N/S) / 4th St (E/W)	D	xxxxx 0.875	D	xxxxx 0.875	+ 0.000 V/C
# 44 Grand Av (N/S) / 1st St (E/W)	E	xxxxx 0.998	E	xxxxx 0.998	+ 0.000 V/C
# 45 Penn Way (NS) at I-5 SB Ramps	C	29.0 0.672	C	29.0 0.672	+ 0.000 D/V
# 46 I-5 SB Ramps (NS) / Santa Ana	C	33.8 0.780	C	33.8 0.780	+ 0.000 D/V
# 47 I-5 NB Ramps (NS) / 17th St. (	E	73.3 1.110	E	73.3 1.110	+ 0.000 D/V
# 48 I-5 NB Ramps (NS) / Grand Ave	F	182.8 1.669	F	182.8 1.669	+ 0.000 D/V
# 49 Mortimer (N/S) / Santa Ana Blv	E	35.8 0.000	E	35.8 0.000	+ 0.000 D/V

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Intersection	Base		Future		Change in
	Del/ LOS	V/ Veh	Del/ LOS	V/ Veh	
# 50 Mortimer (N/S) / 5th St (E/W)	F	64.4 1.141	F	64.4 1.141	+ 0.000 V/C

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Santa Ana Renaissance Specific Plan Traffic Study
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #1 Flower St (NS)/ Civic Center Dr (E/W)

Cycle (sec):	100	Critical Vol./Cap.(X):	1.146
Loss Time (sec):	5 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxxx
Optimal Cycle:	100	Level Of Service:	F

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:	Include	Include	Include	Include
Min. Green:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0
Lanes:	1 0 1 1 0	1 0 1 1 0	1 0 1 1 0	1 0 1 1 0

Volume Module:

Base Vol:	244 1246	116 239 1268	114 275 1057	141 231 1070	169
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 1.00 1.00	1.00
Initial Bse:	244 1246	116 239 1268	114 275 1057	141 231 1070	169
Added Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0
PasserByVol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0
Initial Fut:	244 1246	116 239 1268	114 275 1057	141 231 1070	169
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 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 1.00 1.00 1.00 1.00	1.00
PHF Volume:	244 1246	116 239 1268	114 275 1057	141 231 1070	169
Reduced Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0
Reduced Vol:	244 1246	116 239 1268	114 275 1057	141 231 1070	169
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 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 1.00 1.00 1.00 1.00	1.00
FinalVolume:	244 1246	116 239 1268	114 275 1057	141 231 1070	169

Saturation Flow Module:

Sat/Lane:	1700 1700	1700 1700 1700 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	0.94 1.00 1.00 0.94 1.00	1.00
Lanes:	1.00 1.83	0.17 1.00 1.84 0.16	1.00 1.76 0.24 1.00 1.73	0.27	0.27
Final Sat.:	1598 3110	290 1598 3120 280	1598 3000	400 1598 2936	464

Capacity Analysis Module:

Vol/Sat:	0.15 0.40	0.40 0.15 0.41 0.41	0.17 0.35 0.35 0.14 0.36	0.36	0.36
Crit Moves:	****	****	****	****	****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #2 Flower St (N/S) / Santa Ana Bl (E/W)

Cycle (sec):	100	Critical Vol./Cap.(X):	0.703
Loss Time (sec):	5 (Y+R=4.0 sec)	Average Delay (sec/veh):	xxxxxxx
Optimal Cycle:	37	Level Of Service:	C

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

Volume Module:

Base Vol:	184 931	77 112 708	58 135 598	131 231 762	233
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 1.00 1.00	1.00
Initial Bse:	184 931	77 112 708	58 135 598	131 231 762	233
Added Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0
PasserByVol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0
Initial Fut:	184 931	77 112 708	58 135 598	131 231 762	233
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 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 1.00 1.00 1.00 1.00	1.00
PHF Volume:	184 931	77 112 708	58 135 598	131 231 762	233
Reduced Vol:	0 0 0 0	0 0 0 0	0 0 0 0	0 0 0 0	0
Reduced Vol:	184 931	77 112 708	58 135 598	131 231 762	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 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 1.00 1.00 1.00 1.00	1.00
FinalVolume:	184 931	77 112 708	58 135 598	131 231 762	233

Saturation Flow Module:

Sat/Lane:	1700 1700	1700 1700 1700 1700	1700 1700 1700 1700 1700	1700 1700 1700 1700 1700	1700
Adjustment:	0.94 1.00	0.94 1.00 0.94 1.00	0.94 1.00 0.94 1.00 0.94 1.00	0.94 1.00 0.94 1.00 0.94 1.00	0.94
Lanes:	1.00 2.00	1.00 1.00 2.00 1.00	1.00 1.00 3.00 1.00	1.00 2.00 1.00	1.00
Final Sat.:	1598 3400	1598 1598 3400 1598	1598 1598 5100 1598	1598 3400 1598	1598

Capacity Analysis Module:

Vol/Sat:	0.12 0.27	0.05 0.07 0.21 0.04	0.08 0.12 0.08 0.14 0.22	0.15	0.15
Crit Moves:	****	****	****	****	****

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Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #3 Parton St (E/W) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.434
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 21 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Lanes: 0 0 1 0 0 0 0 1 1 0 2 2 1 0 1 0 2 2 1 0

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Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #4 Ross St (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.594
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 28 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Lanes: 1 0 1 0 1 1 0 0 1 0 1 0 1 0 1 1 0 1 1 0

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #5 Ross St (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.693
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 36 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Protected Protected
Rights: Include Include Ignore Ignore
Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 2 0 1 1 0 3 0 1

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #6 Ross St (N/S) / 4th St (E/W)
Average Delay (sec/veh): 2.8 Worst Case Level of Service: Bf 13.8]
Approach: North Bound South Bound East Bound West Bound
Movement: L - T - R L - T - R L - T - R L - T - R
Control: Uncontrolled Uncontrolled Stop Sign Stop Sign
Rights: Include Include Include Include
Lanes: 0 0 0 1 0 1 0 1 0 0 0 0 0 1 0 0 0 0 1

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #7 Broadway (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.754
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 44 Level Of Service: C
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: Ignore Ignore Include Include
Min. Green: 0 0 0 0 0 0 0 0 0 0 0 0
Lanes: 1 0 2 0 1 1 0 2 0 1 1 0 1 1 0 1

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #8 Broadway (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.624
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 31 Level Of Service: B
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
Lanes: 1 0 2 0 0 0 0 1 1 0 0 0 0 0 0 1 1 1 0

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #9 Broadway (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.645
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 32 Level Of Service: B
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 1 1 0 1 0 2 0 0 0 1 1 1 0 0 0 0 0 0
Lanes: 0 0 1 1 0 1 0 2 0 0 0 0 1 1 1 0 0 0 0 0 0

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #10 Broadway (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.659
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxx
Optimal Cycle: 33 Level Of Service: B
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
Lanes: 1 0 1 1 0 1 0 1 1 0 0 0 0 1 0 0 0 0 1 0 0

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative). Intersection #11 Broadway (N/S) / 3rd at (E/W). Cycle (sec): 100. Critical Vol./Cap.(X): 0.833. Loss Time (sec): 5 (Y+R=4.0 sec). Average Delay (sec/veh): xxxxxxx. Optimal Cycle: 60. Level Of Service: D. Approach: North Bound, South Bound, East Bound, West Bound. Control: Permitted. Rights: Include. Min. Green: 0 0 0 0. Lanes: 1 0 0 1 0 1 0 1 0 1 0 1. Volume Module: Base Vol: 65 796 57 79 699 70 85 134 26 22 175 128. 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 Base: 65 796 57 79 699 70 85 134 26 22 175 128. Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0. PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0. Initial Fut: 65 796 57 79 699 70 85 134 26 22 175 128. 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: 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: 65 796 57 79 699 70 85 134 26 22 175 128. Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0. Reduced Vol: 65 796 57 79 699 70 85 134 26 22 175 128. 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: 65 796 57 79 699 70 85 134 26 22 175 128. 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 0.94 0.94 1.00 1.00 0.94 1.00 1.00. Lanes: 1.00 0.93 0.07 1.00 1.00 1.00 1.00 0.84 0.16 1.00 0.58 0.42. Final Sat.: 1598 1586 114 1598 1700 1598 1598 1424 276 1598 982 718. Capacity Analysis Module: Vol/Sat: 0.04 0.50 0.50 0.05 0.41 0.04 0.05 0.09 0.09 0.01 0.18 0.18. Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative). Intersection #12 Broadway (N/S) / 1st St (E/W). Cycle (sec): 100. Critical Vol./Cap.(X): 0.868. Loss Time (sec): 5 (Y+R=4.0 sec). Average Delay (sec/veh): xxxxxxx. Optimal Cycle: 71. Level Of Service: D. Approach: North Bound, South Bound, East Bound, West Bound. Control: Protected. Rights: Include. Min. Green: 0 0 0 0. Lanes: 1 0 1 0 1 1 0 1 0 1 1 0 2 1 0. Volume Module: Base Vol: 108 437 130 83 466 190 195 1475 81 153 1715 91. 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 Base: 108 437 130 83 466 190 195 1475 81 153 1715 91. Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. Initial Fut: 108 437 130 83 466 190 195 1475 81 153 1715 91. 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: 108 437 130 83 466 190 195 1475 81 153 1715 91. Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. Reduced Vol: 108 437 130 83 466 190 195 1475 81 153 1715 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: 108 437 130 83 466 190 195 1475 81 153 1715 91. Saturation Flow Module: Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700. Adjustment: 0.94 1.00 0.94 0.94 1.00 0.94 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 2.84 0.16 1.00 2.85 0.15. Final Sat.: 1598 1700 1598 1598 1700 1598 1598 4835 265 1598 4843 257. Capacity Analysis Module: Vol/Sat: 0.07 0.26 0.08 0.05 0.27 0.12 0.12 0.31 0.31 0.10 0.35 0.35. Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative). Intersection #13 Sycamore St (N/S) / Civic Center Dr (E/W). Cycle (sec): 100. Critical Vol./Cap.(X): 0.603. Loss Time (sec): 5 (Y+R=4.0 sec). Average Delay (sec/veh): xxxxxxx. Optimal Cycle: 29. Level Of Service: B. Approach: North Bound, South Bound, East Bound, West Bound. Control: Permitted. Rights: Include. Min. Green: 0 0 0 0. Lanes: 0 0 1 1 0 0 0 0 1 1 0 0 1 0 1 1 0. Volume Module: Base Vol: 32 61 28 110 110 118 27 1097 25 9 584 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 Base: 32 61 28 110 110 118 27 1097 25 9 584 39. Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. Initial Fut: 32 61 28 110 110 118 27 1097 25 9 584 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: 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: 32 61 28 110 110 118 27 1097 25 9 584 39. Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0. Reduced Vol: 32 61 28 110 110 118 27 1097 25 9 584 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: 32 61 28 110 110 118 27 1097 25 9 584 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 0.94 1.00 1.00 0.94 1.00 1.00. Lanes: 0.26 0.51 0.23 0.32 0.33 0.35 1.00 1.96 0.04 1.00 1.87 0.13. Final Sat.: 450 857 393 553 553 593 1598 3324 76 1598 3187 213. Capacity Analysis Module: Vol/Sat: 0.02 0.07 0.07 0.06 0.20 0.20 0.02 0.33 0.33 0.01 0.18 0.18. Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #14 Sycamore St (N/S) / Santa Ana Bl (E/W). Average Delay (sec/veh): 8.2. Worst Case Level Of Service: D [34.5]. Approach: North Bound, South Bound, East Bound, West Bound. Control: Stop Sign. Rights: Include. Lanes: 0 0 0 0 0 0 0 0 1 0 1 1 0. Volume Module: Base Vol: 64 94 0 0 104 49 0 0 0 49 824 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 Base: 64 94 0 0 104 49 0 0 0 49 824 31. Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0. PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0. Initial Fut: 64 94 0 0 104 49 0 0 0 49 824 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: 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: 64 94 0 0 104 49 0 0 0 49 824 31. Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0. FinalVolume: 64 94 0 0 104 49 0 0 0 49 824 31. Critical Gap Module: Critical Gap: 7.1 6.5 xxxxxx xxxxxx 6.5 6.2 xxxxxx xxxxxx xxxxxx 4.1 xxxxx xxxxxx. FollowUpTim: 3.5 4.0 xxxxxx xxxxxx 4.0 3.3 xxxxxx xxxxxx xxxxxx 2.2 xxxxx xxxxxx. Capacity Module: Conflict Vol: 425 953 xxxxxx xxxxx 938 290 xxxxx xxxxx xxxxxx 0 xxxxx xxxxxx. Potent Cap.: 543 261 xxxxxx xxxxx 267 754 xxxxx xxxxx xxxxxx 900 xxxxx xxxxxx. Move Cap.: 330 246 xxxxxx xxxxx 251 754 xxxxx xxxxx xxxxxx 900 xxxxx xxxxxx. Volume/Cap: 0.19 0.38 xxxxx xxxxx 0.41 0.07 xxxxx xxxxx xxxxx 0.05 xxxxx xxxxx. Level Of Service Module: 2Way95thQ: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx. Control Del: xxxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxxx 9.2 xxxxx xxxxxx. LOS by Move: * * * * * A * * * * *. Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT. Shared Cap.: 274 xxxxx xxxxxx xxxxx xxxxx 320 xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx. ShareQueue: 3.3 xxxxx xxxxxx xxxxxx xxxxx 2.5 xxxxxx xxxxx xxxxxx 0.2 xxxxx xxxxxx. Shrd ConDel: 34.5 xxxxx xxxxxx xxxxxx xxxxx 26.2 xxxxxx xxxxx xxxxxx 9.2 xxxxx xxxxxx. Shared LOS: D * * * * * D * * * * * A * * * * *. ApproachDel: 34.5 26.2 xxxxxx xxxxxx. ApproachLOS: D * * * * *. Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #15 Sycamore St (N/S) / 5th St (E/W)
Average Delay (sec/veh): 4.3 Worst Case Level Of Service: C[18.1]
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Lanes: 0 0 0 1 0 0 1 0 0 0 0 1 1 1 0 0 0 0 0 0 0

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Future Volume Alternative)
Intersection #16 Sycamore St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.464
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): 10.5
Optimal Cycle: 72 Level Of Service: D
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Stop Sign Stop Sign
Lanes: 0

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #17 Main St (N/S) / Civic Center Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.938
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: E
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Lanes: 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0 1 0 1 1 0 1

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #18 Main St (N/S) / Santa Ana Dr (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.869
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 72 Level Of Service: D
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Lanes: 1 0 2 0 0 0 0 1 1 0 0 0 0 0 0 0 0 1 1 1 0

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #19 Main St (N/S) / 5th St (E/W)

Cycle (sec):	100	Critical Vol./Cap.(X):		0.843
Loss Time (sec):	5 (Y+R=4.0 sec)	Average Delay (sec/veh):		xxxxxxx
Optimal Cycle:	63	Level Of Service:		D

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
Control:	Permitted	Protected	Permitted	Permitted
Rights:	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	0 0 1 1 0	1 0 2 0 0	0 1 1 1 0	0 0 0 0 0

Volume Module:

Base Vol:	0 1529	35 99 1531	0 188 1063	131 0 0 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
Initial Bse:	0 1529	35 99 1531	0 188 1063	131 0 0 0
Added Vol:	0 0 0	0 0 0	0 0 0	0 0 0 0
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0 0
Initial Fut:	0 1529	35 99 1531	0 188 1063	131 0 0 0
User Adj:	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
PHF Volume:	0 1529	35 99 1531	0 188 1063	131 0 0 0
Reduct Vol:	0 0 0	0 0 0	0 0 0	0 0 0 0
Reduced Vol:	0 1529	35 99 1531	0 188 1063	131 0 0 0
PCE Adj:	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
FinalVolume:	0 1529	35 99 1531	0 188 1063	131 0 0 0

Saturation Flow Module:

Sat/Lane:	1700 1700	1700 1700 1700	1700 1700	1700 1700 1700
Adjustment:	0.94 1.00	1.00 0.94 1.00	0.94 1.00	1.00 0.94 1.00 1.00
Lanes:	0.00 1.96	0.04 1.00 2.00	0.00 0.41	2.31 0.28 0.00 0.00 0.00
Final Sat.:	0 3324	76 1598 3400	0 694 3923	483 0 0 0

Capacity Analysis Module:

Vol/Sat:	0.00 0.46	0.46 0.06 0.45	0.00 0.11	0.27 0.27 0.00 0.00 0.00
Crit Moves:	****	****	****	****

Santa Ana Renaissance Specific Plan Traffic Study
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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #20 Main St (N/S) / 4th St (E/W)

Cycle (sec):	100	Critical Vol./Cap.(X):		0.847
Loss Time (sec):	5 (Y+R=4.0 sec)	Average Delay (sec/veh):		xxxxxxx
Optimal Cycle:	64	Level Of Service:		D

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
Lanes:	0 1 0 1 0	0 0 1 1 0	0 0 1 1 0	0 0 1 1 0

Volume Module:

Base Vol:	20 1534	145 0 1521	68 6 268	77 34 360
Growth Adj:	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 1534	145 0 1521	68 6 268	77 34 360
Added Vol:	0 0 0	0 0 0	0 0 0	0 0 0 0
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0 0
Initial Fut:	20 1534	145 0 1521	68 6 268	77 34 360
User Adj:	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
PHF Volume:	20 1534	145 0 1521	68 6 268	77 34 360
Reduct Vol:	0 0 0	0 0 0	0 0 0	0 0 0 0
Reduced Vol:	20 1534	145 0 1521	68 6 268	77 34 360
PCE Adj:	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
FinalVolume:	20 1534	145 0 1521	68 6 268	77 34 360

Saturation Flow Module:

Sat/Lane:	1700 1700	1700 1700 1700	1700 1700	1700 1700 1700
Adjustment:	1.00 1.00	1.00 1.00 1.00	0.94 1.00	1.00 1.00 1.00 1.00
Lanes:	0.02 1.81	0.17 0.00 1.91	0.09 0.02	0.76 0.22 0.07 0.72 0.21
Final Sat.:	40 3070	290 0 3254	146 29 1298	373 116 1226 358

Capacity Analysis Module:

Vol/Sat:	0.01 0.50	0.50 0.00 0.47	0.47 0.00	0.21 0.21 0.02 0.29 0.29
Crit Moves:	****	****	****	****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #21 Main St (N/S) / 3rd St (E/W)

Cycle (sec):	100	Critical Vol./Cap.(X):		0.730
Loss Time (sec):	5 (Y+R=4.0 sec)	Average Delay (sec/veh):		xxxxxxx
Optimal Cycle:	41	Level Of Service:		C

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
Lanes:	0 0 1 1 0	0 1 0 1 0	1 0 0 1 0	1 0 0 1 0

Volume Module:

Base Vol:	0 1596	51 1 1540	68 54 191	50 48 226
Growth Adj:	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 1596	51 1 1540	68 54 191	50 48 226
Added Vol:	0 0 0	0 0 0	0 0 0	0 0 0 0
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0 0
Initial Fut:	0 1596	51 1 1540	68 54 191	50 48 226
User Adj:	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
PHF Volume:	0 1596	51 1 1540	68 54 191	50 48 226
Reduct Vol:	0 0 0	0 0 0	0 0 0	0 0 0 0
Reduced Vol:	0 1596	51 1 1540	68 54 191	50 48 226
PCE Adj:	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
FinalVolume:	0 1596	51 1 1540	68 54 191	50 48 226

Saturation Flow Module:

Sat/Lane:	1700 1700	1700 1700 1700	1700 1700	1700 1700 1700
Adjustment:	0.94 1.00	1.00 1.00 1.00	0.94 1.00	1.00 0.94 1.00 1.00
Lanes:	0.00 1.94	0.06 0.01 1.91	0.08 1.00	0.79 0.21 1.00 0.82 0.18
Final Sat.:	0 3295	105 2 3254	144 1598 1347	353 1598 1402 298

Capacity Analysis Module:

Vol/Sat:	0.00 0.48	0.48 0.00 0.47	0.47 0.03	0.14 0.14 0.03 0.16 0.16
Crit Moves:	****	****	****	****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #22 Main St (N/S) / 1st St (E/W)

Cycle (sec):	100	Critical Vol./Cap.(X):		1.097
Loss Time (sec):	5 (Y+R=4.0 sec)	Average Delay (sec/veh):		xxxxxxx
Optimal Cycle:	100	Level Of Service:		F

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:	Include	Include	Include	Include
Min. Green:	0 0 0	0 0 0	0 0 0	0 0 0
Lanes:	1 0 1 1 0	1 0 2 0 1	1 0 2 1 0	1 0 2 1 0

Volume Module:

Base Vol:	253 1227	115 275 1126	193 226 1437	112 139 1529
Growth Adj:	1.00 1.00	1.00 1.00 1.00	1.00 1.00	1.00 1.00 1.00 1.00
Initial Bse:	253 1227	115 275 1126	193 226 1437	112 139 1529
Added Vol:	0 0 0	0 0 0	0 0 0	0 0 0 0
PasserByVol:	0 0 0	0 0 0	0 0 0	0 0 0 0
Initial Fut:	253 1227	115 275 1126	193 226 1437	112 139 1529
User Adj:	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
PHF Volume:	253 1227	115 275 1126	193 226 1437	112 139 1529
Reduct Vol:	0 0 0	0 0 0	0 0 0	0 0 0 0
Reduced Vol:	253 1227	115 275 1126	193 226 1437	112 139 1529
PCE Adj:	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
FinalVolume:	253 1227	115 275 1126	193 226 1437	112 139 1529

Saturation Flow Module:

Sat/Lane:	1700 1700	1700 1700 1700	1700 1700	1700 1700 1700
Adjustment:	0.94 1.00	1.00 1.00 1.00	0.94 1.00	1.00 0.94 1.00 1.00
Lanes:	1.00 1.83	0.17 1.00 2.00	1.00 1.00	2.78 0.22 1.00 2.65 0.35
Final Sat.:	1598 3109	291 1598 3400	1598 1598	4731 369 1598 4513 587

Capacity Analysis Module:

Vol/Sat:	0.16 0.39	0.39 0.17 0.33	0.12 0.14	0.30 0.30 0.09 0.34 0.34
Crit Moves:	****	****	****	****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #23 Bush St (N/S) / Santa Ana Bl (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.467
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 22 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Lanes: 1 0 1 0 0 0 1 0 0 0 0 0 0 1 1 1 0 0
Volume Module:
Base Vol: 50 381 0 0 246 42 0 0 0 45 866 73
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 Base: 50 381 0 0 246 42 0 0 0 45 866 73
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 50 381 0 0 246 42 0 0 0 45 866 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: 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: 50 381 0 0 246 42 0 0 0 45 866 73
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 50 381 0 0 246 42 0 0 0 45 866 73
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: 50 381 0 0 246 42 0 0 0 45 866 73
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00
Lanes: 1.00 1.00 0.00 0.00 0.85 0.15 0.00 0.00 0.00 0.14 2.64 0.22
Final Sat.: 1598 1700 0 0 1452 248 0 0 0 233 4488 378
Capacity Analysis Module:
Vol/Sat: 0.03 0.22 0.00 0.00 0.17 0.17 0.00 0.00 0.00 0.03 0.19 0.19
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM

Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #24 Bush St (N/S) / 5th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.577
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 27 Level Of Service: A
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Lanes: 0 0 0 1 0 1 0 1 0 0 0 1 1 1 0 0 0 0 0 0
Volume Module:
Base Vol: 0 382 77 33 321 0 100 991 112 0 0 0 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 Base: 0 382 77 33 321 0 100 991 112 0 0 0 0
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 382 77 33 321 0 100 991 112 0 0 0 0
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: 0 382 77 33 321 0 100 991 112 0 0 0 0
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 382 77 33 321 0 100 991 112 0 0 0 0
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: 0 382 77 33 321 0 100 991 112 0 0 0 0
Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 0.94 1.00 0.94 1.00 1.00 1.00 0.94 1.00 1.00 0.94
Lanes: 0.00 0.83 0.17 1.00 1.00 0.00 0.25 2.47 0.28 0.00 0.00 0.00
Final Sat.: 0 1415 285 1598 1700 0 424 4201 475 0 0 0 0
Capacity Analysis Module:
Vol/Sat: 0.00 0.27 0.27 0.02 0.19 0.00 0.06 0.24 0.24 0.00 0.00 0.00
Crit Moves: ****

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Level Of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)
Intersection #25 Bush St (N/S) / 4th St (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.602
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxxxx
Optimal Cycle: 29 Level Of Service: B
Approach: North Bound South Bound East Bound West Bound
Control: Permitted Permitted Permitted Permitted
Rights: Include Include Include Include
Lanes: 1 0 0 1 0 1 0 1 0 0 0 1 1 0 0 0 0 0 0 0
Volume Module:
Base Vol: 23 369 53 72 266 70 16 332 32 22 353 49
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 Base: 23 369 53 72 266 70 16 332 32 22 353 49
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 23 369 53 72 266 70 16 332 32 22 353 49
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: 23 369 53 72 266 70 16 332 32 22 353 49
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 23 369 53 72 266 70 16 332 32 22 353 49
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: 23 369 53 72 266 70 16 332 32 22 353 49
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 0.87 0.13 1.00 0.79 0.21 0.04 0.88 0.08 0.05 0.83 0.12
Final Sat.: 1598 1486 214 1598 1346 354 72 1485 143 88 1415 196
Capacity Analysis Module:
Vol/Sat: 0.01 0.25 0.25 0.05 0.20 0.20 0.01 0.22 0.22 0.01 0.25 0.25
Crit Moves: ****

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)
Intersection #26 Spurgeon St (N/S) / 1st St (E/W)
Average Delay (sec/veh): 0.8 Worst Case Level of Service: C[20.0]
Approach: North Bound South Bound East Bound West Bound
Control: Stop Sign Stop Sign Uncontrolled Uncontrolled
Rights: Include Include Include Include
Lanes: 0 0 0 0 0 0 0 1 0 0 3 0 0 0 0 0 2 1 0 0
Volume Module:
Base Vol: 0 0 0 0 0 0 163 0 1954 0 0 1902 82
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 Base: 0 0 0 0 0 0 163 0 1954 0 0 1902 82
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 0 0 0 0 0 163 0 1954 0 0 1902 82
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: 0 0 0 0 0 0 163 0 1954 0 0 1902 82
Reduct Vol: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
FinalVolume: 0 0 0 0 0 0 163 0 1954 0 0 1902 82
Critical Gap Module:
Critical Gap: xxxxxx xxxxx xxxxxx xxxxxx xxxxx 6.9 xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
FollowUpTim: xxxxxx xxxxx xxxxxx xxxxxx xxxxx 3.3 xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
Capacity Module:
Conflict Vol: xxxxx xxxxx xxxxxx xxxxx xxxxx 675 xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Potent Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx 401 xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Move Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx 401 xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Volume/Cap: xxxxx xxxxx xxxxx xxxxx xxxxx 0.41 xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
Level Of Service Module:
2Way95thQ: xxxxx xxxxx xxxxxx xxxxx xxxxx 1.9 xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxxx
Control Del: xxxxxx xxxxx xxxxxx xxxxxx xxxxx 20.0 xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx
LOS by Move: * * * * * C * * * * *
Movement: LT - LTR - RT LT - LTR - RT LT - LTR - RT LT - LTR - RT
Shared Cap.: xxxxx xxxxx xxxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx xxxxx
ShareQueue: xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shrd ConDel: xxxxxx xxxxx xxxxxx xxxxxx xxxxx xxxxxx xxxxxx xxxxxx xxxxxx xxxxx xxxxxx
Shared LOS: * * * * *
ApproachDel: xxxxxx 20.0 xxxxxx xxxxxx
ApproachLOS: * C *
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #27 French St (N/S) / Santa Ana Bl (E/W). Average Delay (sec/veh): 7.7. Worst Case Level Of Service: D [29.6].

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. ICU (Loss as Cycle Length %) Method (Future Volume Alternative). Intersection #28 French St (N/S) / 4th St (E/W). Average Delay (sec/veh): 0.568.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #29 Lacy St (N/S) / Civic Center Dr (E/W). Average Delay (sec/veh): 15.2. Worst Case Level Of Service: F [13.5].

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #30 Lacy St (N/S) / Santa Ana Bl (E/W). Average Delay (sec/veh): OVERFLOW. Worst Case Level Of Service: F [xxxxx].

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. 2000 HCM 4-Way Stop Method (Future Volume Alternative). Intersection #31 Lacy St (N/S) / Brown St (E/W). Includes tables for Approach, Volume Module, Saturation Flow Module, Capacity Analysis Module, and Critical Gap Module.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. 2000 HCM 4-Way Stop Method (Future Volume Alternative). Intersection #32 Lacy St (N/S) / 4th St (E/W). Includes tables for Approach, Volume Module, Saturation Flow Module, Capacity Analysis Module, and Critical Gap Module.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #33 Lacy St (N/S) / 1st St (E/W). Includes tables for Approach, Volume Module, Saturation Flow Module, Capacity Analysis Module, and Critical Gap Module.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. 2000 HCM 4-Way Stop Method (Future Volume Alternative). Intersection #34 Santiago St (N/S) / Washington Av (E/W). Includes tables for Approach, Volume Module, Saturation Flow Module, Capacity Analysis Module, and Critical Gap Module.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM

Level Of Service Computation Report 2000 HCM 4-Way Stop Method (Future Volume Alternative) Intersection #35 Santiago St (N/S) / Civic Center Dr (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 2.021 ... Saturation Flow Module: Adjustment: 1.00 1.00 1.00 1.00 1.00 ... Capacity Analysis Module: Vol/Sat: 0.64 1.77 1.77 0.07 2.02 2.02

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM

Level Of Service Computation Report ICU (Loss as Cycle Length %) Method (Future Volume Alternative) Intersection #36 Santiago St (N/S) / Santa Ana Bl (E/W) Cycle (sec): 100 Critical Vol./Cap.(X): 1.011 ... Saturation Flow Module: Adjustment: 0.94 1.00 0.94 0.94 1.00 ... Capacity Analysis Module: Vol/Sat: 0.03 0.17 0.07 0.29 0.22 0.19

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM

Level Of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative) Intersection #37 Santiago St (N/S) / Brown St (E/W) Average Delay (sec/veh): 3.5 Worst Case Level Of Service: C[19.7] ... Capacity Module: Conflict Vol: 643 xxxxx xxxxxx ... Level Of Service Module: 2Way95thQ: 0.3 xxxxx xxxxxx

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM

Level Of Service Computation Report 2000 HCM Unsignalized Method (Future Volume Alternative) Intersection #38 Santiago St (N/S) / 6th St (E/W) Average Delay (sec/veh): 3.8 Worst Case Level Of Service: C[20.9] ... Capacity Module: Conflict Vol: 551 xxxxx xxxxxx ... Level Of Service Module: 2Way95thQ: 0.5 xxxxx xxxxxx

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #39 Santiago St (N/S) / 4th (E/W). Average Delay (sec/veh): OVERFLOW. Worst Case Level Of Service: F[xxxxxx].

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. ICU Loss as Cycle Length % Method (Future Volume Alternative). Intersection #40 Standard Av (N/S) / 1st St (E/W). Cycle (sec): 100. Critical Vol./Cap. (X): 0.988. Average Delay (sec/veh): xxxxxxxx.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. 2000 HCM Unsignalized Method (Future Volume Alternative). Intersection #41 U-24 (N/S) / Santa Ana Bl (E/W). Average Delay (sec/veh): 1.5. Worst Case Level Of Service: F[130.8].

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. ICU Loss as Cycle Length % Method (Future Volume Alternative). Intersection #42 Grand Av (N/S) / Santa Ana Bl (E/W). Cycle (sec): 100. Critical Vol./Cap. (X): 1.314. Average Delay (sec/veh): xxxxxxxx.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. Intersection #43 Grand Av (N/S) / 4th St (E/W). Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Cycle, Loss Time, Optimal Cycle, Volume Module, Saturation Flow Module, and Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. Intersection #44 Grand Av (N/S) / 1st St (E/W). Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Cycle, Loss Time, Optimal Cycle, Volume Module, Saturation Flow Module, and Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. Intersection #45 Penn Way (NS) at I-5 SB Ramps (EW). Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Cycle, Loss Time, Optimal Cycle, Volume Module, Saturation Flow Module, and Capacity Analysis Module.

Santa Ana Renaissance Specific Plan Traffic Study 2035 With Project PM. Level Of Service Computation Report. Intersection #46 I-5 SB Ramps (NS) / Santa Ana Bl (EW). Table with columns for Approach (North, South, East, West Bound) and Movement (L, T, R). Rows include Cycle, Loss Time, Optimal Cycle, Volume Module, Saturation Flow Module, and Capacity Analysis Module.

APPENDIX J
Mitigation Analysis Worksheets
For 2030 and 2035 With Project Conditions

Santa Ana Renaissance Specific Plan Traffic Study
2030 With Project PM

Level of Service Computation Report
ICU 1 (Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #22 Main St (N/S) / 1st St (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.886
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 79 Level of Service: D

Approach: North Bound South Bound East Bound West Bound
Movement: L T R L T R L T R L T R L T R
Control: Protected Protected Protected Protected Protected Protected
Rights: Include Include Include Include Include Include
Min. Green: 0 0 1 0 0 2 0 2 0 1 0 0 2 1 0 0 1 0 2 1 0

Volume Module:
Base Vol: 217 1056 92 243 967 167 198 1222 97 114 1304 186
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: 217 1056 92 243 967 167 198 1222 97 114 1304 186
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 217 1056 92 243 967 167 198 1222 97 114 1304 186
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: 217 1056 92 243 967 167 198 1222 97 114 1304 186
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0
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: 217 1056 92 243 967 167 198 1222 97 114 1304 186

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00 0.94
Lanes: 1.00 1.84 0.16 2.00 2.00 1.00 1.00 2.78 0.22 1.00 2.63 0.37
Final Sat.: 1598 3128 272 3196 3400 1598 1598 4725 375 1598 4463 637

Capacity Analysis Module:
Vol/Sat: 0.14 0.34 0.34 0.08 0.28 0.10 0.12 0.26 0.26 0.07 0.29 0.29
Exit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
2030 With Project PM

Level of Service Computation Report
ICU 1 (Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #30 Lacy st (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.619
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 30 Level of Service: B

Approach: North Bound South Bound East Bound West Bound
Movement: L T R 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 1 0 0 0 0 1 0 0 1 0 0 1 0 0 1 0 0 1 0

Volume Module:
Base Vol: 17 42 22 34 59 14 3 764 8 75 719 11
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: 17 42 22 34 59 14 3 764 8 75 719 11
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserByVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 17 42 22 34 59 14 3 764 8 75 719 11
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: 17 42 22 34 59 14 3 764 8 75 719 11
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0
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: 17 42 22 34 59 14 3 764 8 75 719 11

Saturation Flow Module:
Sat/Lane: 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
Lanes: 0.21 0.52 0.27 0.32 0.55 0.13 1.00 0.99 0.01 1.00 0.98 0.02
Final Sat.: 357 861 462 540 937 222 1598 1682 18 1598 1674 26

Capacity Analysis Module:
Vol/Sat: 0.01 0.05 0.05 0.02 0.06 0.06 0.00 0.45 0.45 0.05 0.43 0.43
Exit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
2030 With Project PM

Level of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #33 Lacy St (N/S) / 1st St. (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.558
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 26 Level of Service: A

Approach: North Bound South Bound East Bound West Bound
Movement: L T R L T R L T R L T R
Control: Permitted Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 0 0 1 0 0 0 1 0 0 0 1 0 3 0 0 0 0 0 2 1 0
Lanes: 0 0 1 0 0 0 0 1 0 0 0 1 0 3 0 0 0 0 0 2 1 0

Volume Module:
Base Vol: 0 2 0 10 1 130 184 1493 0 0 1540 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 2 0 10 1 130 184 1493 0 0 1540 40
Added Vol: 0
PasserbyVol: 0
Initial Fut: 0 2 0 10 1 130 184 1493 0 0 1540 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: 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: 0 2 0 10 1 130 184 1493 0 0 1540 40
Reduced Vol: 0
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 2 0 10 1 130 184 1493 0 0 1540 40

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00 1.00
Lanes: 0.00 1.00 0.00 0.07 0.01 0.92 1.00 3.00 0.00 0.00 2.92 0.08
Final Sat.: 0 1700 0 121 12 1567 1598 5100 0 0 4971 129

Capacity Analysis Module:
Vol/Sat: 0.00 0.00 0.00 0.01 0.08 0.08 0.12 0.29 0.00 0.00 0.31 0.31
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
2030 With Project PM

Level of Service Computation Report
ICU 1(Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #34 Santiago St (N/S) / Washington St. (E/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.581
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 28 Level of Service: A

Approach: North Bound South Bound East Bound West Bound
Movement: L T R L T R L T R L T R
Control: Permitted Protected Permitted Permitted
Rights: Include Include Include Include
Min. Green: 1 0 1 0 1 1 0 1 0 1 0 0 1 0 0 0 0 0 1 0 0 0

Volume Module:
Base Vol: 67 315 171 24 295 125 260 190 28 58 146 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: 67 315 171 24 295 125 260 190 28 58 146 36
Added Vol: 0
PasserbyVol: 0
Initial Fut: 67 315 171 24 295 125 260 190 28 58 146 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: 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: 67 315 171 24 295 125 260 190 28 58 146 36
Reduced Vol: 0
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: 67 315 171 24 295 125 260 190 28 58 146 36

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00 0.94 1.00 1.00
Lanes: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.54 0.40 0.06 0.61 0.15
Final Sat.: 1598 1700 1598 1700 1598 925 676 100 411 1034 255

Capacity Analysis Module:
Vol/Sat: 0.04 0.19 0.11 0.02 0.17 0.08 0.15 0.28 0.28 0.03 0.14 0.14
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
2030 With Project PM

Level of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)
Intersection #48 I-5 NB Ramps (NS) / Grand Ave (EW)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.771
Loss Time (sec): 12 (Y+R=4.0 sec) Average Delay (sec/veh): 22.9
Optimal Cycle: 71 Level Of Service: C

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 Split Phase Split Phase
Rights: Ignore Include Include Ovl
Min. Green: 0 0 3 0 1 1 0 0 3 0 0 0 0 0 0 0 2 0 0 0 0 2
Lanes: 0 0 3 0 1 1 0 0 3 0 0 0 0 0 0 0 2 0 0 0 0 2

Volume Module:
Base Vol: 0 2001 700 43 1285 0 0 0 0 0 719 0 831
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 2001 700 43 1285 0 0 0 0 0 719 0 831
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserbyVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 0 2001 700 43 1285 0 0 0 0 719 0 831
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHP Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHP Volume: 0 2001 0 43 1285 0 0 0 0 719 0 831
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 0 43 1285 0 0 0 0 719 0 831
PCE Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj: 1.00 1.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 0 2001 0 43 1285 0 0 0 0 719 0 831

Saturation Flow Module:
Sat/Lane: 1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment: 1.00 0.91 1.00 0.95 0.91 1.00 1.00 1.00 1.00 0.92 1.00 0.75
Lanes: 0.00 3.00 1.00 1.00 3.00 0.00 0.00 0.00 0.00 2.00 0.00 2.00
Final Sat.: 0 5187 1900 1805 5187 0 0 0 0 3502 0 2842

Capacity Analysis Module:
Vol/Sat: 0.00 0.39 0.00 0.02 0.25 0.00 0.00 0.00 0.00 0.21 0.00 0.29
Crit Moves: ****
Green/Cycle: 0.00 0.50 0.00 0.03 0.53 0.00 0.00 0.00 0.00 0.35 0.00 0.38
Volume/Cap: 0.00 0.77 0.00 0.77 0.47 0.00 0.00 0.00 0.00 0.59 0.00 0.77
Delay/Veh: 0.0 21.8 0.0 95.5 14.7 0.0 0.0 0.0 0.0 27.5 0.0 30.7
User DelAdj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh: 0.0 21.8 0.0 95.5 14.7 0.0 0.0 0.0 0.0 27.5 0.0 30.7
LOS by Move: A C A F B R A A A C A C
HCMKAVQ: 0 20 0 3 9 0 0 0 0 10 0 14
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project PM

Level of Service Computation Report
Intersection #35 Santiago St (N/S) / Civic Center Dr (S/W)
Cycle (sec): 100 Critical Vol./Cap.(X): 0.779
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 100 Level Of Service: C

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 Permitted
Rights: Include Include Include Include
Min. Green: 1 0 0 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0
Lanes: 1 0 0 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0

Volume Module:
Base Vol: 265 719 61 26 666 179 375 68 500 58 42 21
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: 265 719 61 26 666 179 375 68 500 58 42 21
Added Vol: 0 0 0 0 0 0 0 0 0 0 0 0
PasserbyVol: 0 0 0 0 0 0 0 0 0 0 0 0
Initial Fut: 265 719 61 26 666 179 375 68 500 58 42 21
User Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHP Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHP Volume: 265 719 61 26 666 179 375 68 500 58 42 21
Reduced Vol: 0 0 0 0 0 0 0 0 0 0 0 0
Reduced Vol: 265 719 61 26 666 179 375 68 500 58 42 21
PCE Adj: 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
FinalVolume: 265 719 61 26 666 179 375 68 500 58 42 21

Saturation Flow Module:
Sat/Lane: 1700 1700 1700 1700 1700 1700 1700 1700 1700 1700
Adjustment: 0.94 1.00 1.00 1.00 1.00 1.00 0.94 1.00 0.94 1.00 1.00
Lanes: 1.00 0.52 0.08 0.06 1.53 0.41 1.00 1.00 1.00 0.96 0.69 0.35
Final Sat.: 1598 1567 133 101 2600 699 1598 1700 1598 1630 1180 590

Capacity Analysis Module:
Vol/Sat: 0.17 0.46 0.45 0.02 0.26 0.26 0.23 0.04 0.31 0.03 0.04 0.04
Crit Moves: ****
Note: Queue reported is the number of cars per lane.

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project PM

Level of Service Computation Report
ICU 1 (Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #36 Santiago St (N/S) / Santa Ana Bl (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.867
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 71 Level of Service: D

Approach: North Bound South Bound East Bound West Bound
Movement: L-T-R L-T-R L-T-R L-T-R

Control: Permitted Include Protected
Rights: Permitted Include Protected
Min. Green: 1 0 1 0 1 2 0 1 0 1 1 0 1 0 1 0 1 0 2 0 1

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

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, MLP Adj, FinalVolume. Rows include various traffic metrics for different movements and lanes.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat. Rows include saturation flow and adjustment factors for different movements and lanes.

Capacity Analysis Module:
Vol/Sat: 0.03 0.17 0.07 0.14 0.22 0.19 0.18 0.34 0.34 0.09 0.27 0.32
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project PM

Level of Service Computation Report
ICU 1 (Loss as Cycle Length %) Method (Future Volume Alternative)

Intersection #39 Santiago St (N/S) / 4th (E/W)

Cycle (sec): 100 Critical Vol./Cap.(X): 0.662
Loss Time (sec): 5 (Y+R=4.0 sec) Average Delay (sec/veh): xxxxxx
Optimal Cycle: 34 Level of Service: B

Approach: North Bound South Bound East Bound West Bound
Movement: L-T-R L-T-R L-T-R L-T-R

Control: Permitted Include Protected
Rights: Permitted Include Protected
Min. Green: 1 0 1 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0

Lanes: 1 0 1 1 0 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0

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, MLP Adj, FinalVolume. Rows include various traffic metrics for different movements and lanes.

Saturation Flow Module:

Table with columns: Sat/Lane, Adjustment, Lanes, Final Sat. Rows include saturation flow and adjustment factors for different movements and lanes.

Capacity Analysis Module:
Vol/Sat: 0.00 0.14 0.13 0.07 0.11 0.11 0.03 0.28 0.28 0.13 0.29 0.29
Crit Moves: ****

Santa Ana Renaissance Specific Plan Traffic Study
2035 With Project PM

Level of Service Computation Report
(Loss as Cycle Length Method (Future Volume Alternative))

Intersection #44 Grand Av (N/S) / 1st St (E/W)

Cycle (sec): 100
Loss Time (sec): 5 (Y+R=4.0 sec)
Optimal Cycle: 71
Critical Vol./Cap.(X): 0.866
Average Delay (sec/vch): xxxxxx
Level of Service: D

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: Include Include Include Include
Min. Green: 2 0 3 0 1 2 0 3 0 1 2 0 3 0 1 2 0 2 1 0 0

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

Volume Module: Table with columns for Base Vol, Growth Adj, Initial Bas, Added Vol, PasserbyVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, Reduced Vol, PCS Adj, MLF Adj, FinalVolume. Rows for North, South, East, West Bound movements.

Saturation Flow Module: Table with columns for Sat/Lane, Adjustment, Lanes, Final Sat. Rows for North, South, East, West Bound movements.

Capacity Analysis Module:
Vol/Sat: 0.16 0.40 0.12 0.04 0.26 0.07 0.07 0.29 0.20 0.09 0.28 0.28
Crit Moves: ****

APPENDIX K

Intersection Improvements

Table K-I – Intersection Improvements

Intersection	Approach	Existing					2030 Without Project					2030 With Project					2035 Without Project					2035 With Project				
		Approach Lanes					Approach Lanes					Approach Lanes					Approach Lanes					Approach Lanes				
		L	TL	T	TR	R	L	TL	T	TR	R	L	TL	T	TR	R	L	TL	T	TR	R	L	TL	T	TR	R
Grand Avenue at I-5 NB Ramps	NB	0	0	2	0	1	0	0	3	0	1	0	0	3	0	1	0	0	3	0	1	0	0	3	0	1
	SB	1	0	3	0	0	1	0	3	0	0	1	0	3	0	0	1	0	3	0	0	1	0	3	0	0
	EB	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
	WB	2	0	0	0	1	2	0	0	0	1	2	0	0	0	1	2	0	0	0	1	2	0	0	0	1
Grand Avenue at Santa Ana Boulevard	NB	1	0	2	1	0	1	0	2	1	0	1	0	2	1	0	1	0	2	1	0	1	0	2	1	0
	SB	1	0	2	0	2	1	0	3	0	2	1	0	3	0	2	1	0	3	0	2	1	0	3	0	2
	EB	2	0	1	0	2	2	0	1	0	2	2	0	1	0	2	2	0	1	0	2	2	0	1	0	2
	WB	0	1	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	0
Grand Avenue at 4th Street	NB	1	0	2	0	1	1	0	3	0	1	1	0	3	0	1	1	0	3	0	1	1	0	3	0	1
	SB	1	0	2	0	1	1	0	2	1	0	1	0	2	1	0	1	0	2	1	0	1	0	2	1	0
	EB	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0
	WB	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1
Grand Avenue at 1st Street	NB	1	0	2	0	1	2	0	2	1	0	2	0	2	1	0	2	0	2	1	0	2	0	2	1	0
	SB	1	0	2	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1	2	0	3	0	1
	EB	2	0	2	1	0	2	0	2	1	0	2	0	2	1	0	2	0	2	1	0	2	0	2	1	0
	WB	2	0	1	1	0	2	0	2	0	1	2	0	2	0	1	2	0	2	0	1	2	0	2	0	1
Santiago Street at Santa Ana Boulevard	NB	1	0	1	0	1	1	0	1	0	1	1	0	2	0	1	1	0	1	0	1	1	0	2	0	1
	SB	1	0	1	0	1	1	0	1	0	1	1	0	2	0	1	1	0	1	0	1	1	0	2	0	1
	EB	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0
	WB	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1	1	0	2	0	1
Santiago Street at Brown Street	NB	0	0	0	1	0	0	0	0	1	0	0	1	1	1	0	0	0	0	1	0	0	1	1	1	0
	SB	0	0	0	1	0	0	0	0	1	0	0	1	1	1	0	0	0	0	1	0	0	1	1	1	0
	EB	0	0	0	0	1	0	0	0	0	1	1	0	0	1	0	0	0	0	0	1	1	0	0	1	0
	WB	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1
Santiago Street at 6th Street	NB	0	0	0	0	0	0	1	0	1	0	0	1	1	1	0	0	1	0	1	0	0	1	1	1	0
	SB	0	0	0	0	0	0	1	0	1	0	0	1	1	1	0	0	1	0	1	0	0	1	1	1	0
	EB	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1
	WB	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Santiago Street at 4th Street	NB	0	1			0	0	1			0	0	1	1	1	0	0	1			0	0	1	1	1	0
	SB	0	0	0	0	0	0	0	0	0	0	1	0	2	1	0	0	0	0	0	0	1	0	2	1	0
	EB	0	1	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	0
	WB	0	1	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	0

APPENDIX L
Alternative Scenarios

**Table L-1 – Determination of Significant Impacts
Future 2035 Peak Hour Intersection Conditions
(ICU Method) – 25% Trip Reduction**

Intersection	AM Peak Hour				PM Peak Hour			
	2035 NP (ICU / Level of Service)	2035 WP (ICU / Level of Service)	Increase / Decrease	Significant Impact	2035 NP (ICU / Level of Service)	2035 WP (ICU / Level of Service)	Increase / Decrease	Significant Impact
Signalized Intersections (Using ICU Method)								
Flower St. at Civic Center Dr.	0.789 / C	0.785 / C	-0.004	NO	1.138 / F	1.144 / F	0.006	NO
Flower St. at Santa Ana Blvd.	0.685 / B	0.692 / B	0.007	NO	0.694 / B	0.7 / C	0.006	NO
Parton St. at Santa Ana Blvd.	0.316 / A	0.314 / A	-0.002	NO	0.428 / A	0.432 / A	0.004	NO
Ross St. at Civic Center Dr.	0.634 / B	0.648 / B	0.014	NO	0.564 / A	0.586 / A	0.022	NO
Ross St. at Santa Ana Blvd.	0.581 / A	0.582 / A	0.001	NO	0.668 / B	0.684 / B	0.016	NO
Broadway at Civic Center Dr.	0.721 / C	0.736 / C	0.015	NO	0.743 / C	0.752 / C	0.009	NO
Broadway at Santa Ana Blvd.	0.595 / A	0.612 / B	0.017	NO	0.612 / B	0.622 / B	0.010	NO
Broadway at 5th St.	0.399 / A	0.403 / A	0.004	NO	0.620 / B	0.639 / B	0.019	NO
Broadway at 4th St.	0.449 / A	0.47 / A	0.021	NO	0.610 / B	0.641 / B	0.031	NO
Broadway at 3rd St.	0.406 / A	0.408 / A	0.002	NO	0.803 / D	0.825 / D	0.022	NO
Broadway at 1st St.	0.779 / C	0.778 / C	-0.001	NO	0.844 / D	0.862 / D	0.018	NO
Sycamore St. at Civic Center Dr.	0.484 / A	0.498 / A	0.014	NO	0.573 / A	0.596 / A	0.023	NO
Main St. at Civic Center Dr.	0.875 / D	0.893 / D	0.018	NO	0.883 / D	0.923 / E	0.040	NO
Main St. at Santa Ana Blvd.	0.799 / C	0.807 / D	0.008	NO	0.836 / D	0.86 / D	0.024	NO
Main St. at 5th St.	0.611 / B	0.62 / B	0.009	NO	0.812 / D	0.835 / D	0.023	NO
Main St. at 4th St.	0.613 / B	0.644 / B	0.031	NO	0.776 / C	0.828 / D	0.052	NO
Main St. at 3rd St.	0.533 / A	0.552 / A	0.019	NO	0.694 / B	0.712 / C	0.018	NO
Main St. at 1st St.	0.918 / E	0.925 / E	0.007	NO	1.013 / F	1.077 / F	0.064	YES
Bush St. at Santa Ana Blvd.	0.335 / A	0.343 / A	0.008	NO	0.462 / A	0.466 / A	0.004	NO
Bush St. at 5th St.	0.297 / A	0.296 / A	-0.001	NO	0.560 / A	0.573 / A	0.013	NO
Bush St. at 4th St.	0.347 / A	0.355 / A	0.008	NO	0.576 / A	0.596 / A	0.020	NO
French St. at 4th St.	0.342 / A	0.354 / A	0.012	NO	0.543 / A	0.562 / A	0.019	NO
Lacy St. at 4th St.	0.508 / A	0.475 / A	-0.033	NO	0.751 / C	0.798 / C	0.047	NO
Santiago St. at Santa Ana Blvd.	0.904 / E	0.858 / D	-0.046	NO	0.993 / E	0.922 / E	-0.071	NO
Standard St. at 1st St.	0.940 / E	0.953 / E	0.013	YES	0.970 / E	0.984 / E	0.014	YES

Intersection	AM Peak Hour				PM Peak Hour			
	2035 NP (ICU / Level of Service)	2035 WP (ICU / Level of Service)	Increase / Decrease	Significant Impact	2035 NP (ICU / Level of Service)	2035 WP (ICU / Level of Service)	Increase / Decrease	Significant Impact
Grand Ave. at Santa Ana Blvd.	0.966 / E	0.974 / E	0.008	NO	1.172 / F	1.217 / F	0.045	YES
Grand Ave. at 4th St.	0.747 / C	0.76 / C	0.013	NO	0.841 / D	0.856 / D	0.015	NO
Grand Ave. at 1st St.	0.894 / D	0.912 / E	0.018	YES	0.960 / E	0.989 / E	0.029	YES

**Table L-2 – Determination of Significant Impacts
Future 2035 Peak Hour Intersection Conditions
(HCM Method) – 25% Trip Reduction**

Intersection	AM Peak Hour			PM Peak Hour		
	2035 NP (Average/Worst Case Delay)	2035 WP (Average/Worst Case Delay)	Significant Impact	2035 NP (Average/Worst Case Delay)	2035 WP (Average/Worst Case Delay)	Significant Impact
Unsignalized Intersections						
Ross St. at 4th St.	11.7 / B	11.8 / B	NO	13.6 / B	13.7 / B	NO
Sycamore St. at Santa Ana Blvd.	28.7 / D	31.5 / D	NO	29.8 / D	33.2 / D	NO
Sycamore St. at 5th St.	19.2 / C	19.5 / C	NO	15.7 / C	17.4 / C	NO
Sycamore St. at 4th St.	8.4 / A	8.6 / A	NO	9.8 / A	10.3 / B	NO
Spurgeon St. at 1st St.	11.3 / B	11.3 / B	NO	18.7 / C	19.6 / C	NO
French St. at Santa Ana Blvd.	24.5 / C	25.0 / D	NO	24.0 / C	28.0 / D	NO
Lacy St. at Civic Center Dr.	28.6 / D	35.1 / E	YES	69.9 / F	99.5 / F	YES
Lacy St. at Santa Ana Blvd.	122.1 / F	65.2 / F	YES	179.1 / F	OVRFL / F	YES
Lacy St. at 6th St.	7.3 / A	7.3 / A	NO	8.1 / A	8.4 / A	NO
Lacy St. at 1st St.	45.3 / E	95.1 / F	YES	410.8 / F	OVRFL / F	YES
Santiago St. at Washington Ave.	126.8 / F	115.8 / F	YES	143.1 / F	158.8 / F	YES
Santiago St. at Civic Center Dr.	280 / F	268.2 / F	YES	221.7 / F	255.1 / F	YES
Santiago St. at Brown St.	N/A	16.9 / C	NO	N/A	17.0 / C	NO
Santiago St. at 6th St.	N/A	13.6 / B	NO	N/A	19.1 / C	NO
Santiago St. at 4th St.	N/A	OVRFL / F	YES	N/A	OVRFL / F	YES
Mortimer St. at 5th St	9.5 / A	9.5 / A	NO	33.5 / D	55.5 / F	YES
Mortimer St. at Santa Ana Blvd.	23.1 / A	324.2 / F	YES	23.0 / C	31.1 / D	NO
U2-4 at Santa Ana Blvd.	N/A	81.0 / F	YES	N/A	99.6 / F	YES
Signalized Intersections (Caltrans, Using HCM)						
Penn Way at I-5 SB	25.1 / C	25.0 / C	NO	28.5 / C	28.9 / C	NO
Santa Ana Blvd. at I-5 SB	29.2 / C	30.3 / C	NO	29.7 / C	32.5 / C	NO
17t St. at I-5 NB	39.9 / D	39.7 / D	NO	73.0 / E	73.3 / E	YES
Grand Ave at I-5 NB	30.2 / C	79.9 / E	YES	119.9 / F	181.4 / F	YES