APPENDIX E – TRAFFIC IMPACT STUDY

December 7, 2021

TJW ENGINEERING, INC.
TRAFFIC ENGINEERING &
TRANSPORTATION PLANNING
CONSULTANTS

Mr. Stan Smith
RELATED CALIFORNIA
18201 Von Karman Avenue, Suite 900
Irvine, CA 92612

SUBJECT: Focused Traffic Impact Analysis – Fontana Southridge, City of Fontana

Dear Mr. Smith,

*TJW Engineering, Inc. (*TJW*)* is pleased to submit this Trip Generation comparison for the proposed project Fontana Southridge located on the west side of Sierra Avenue between Under Wood Drive and Jurupa Avenue in the City of Fontana.

Site Plan and Trip Generation Comparison

The original proposed site plan (attached for reference) consists of the following land uses:

- 155 multifamily dwelling units

The revised proposed site plan (attached for reference) consists of the following land uses:

- 106 multifamily dwelling units

The revised site plan has reduced in dwelling units by 49 multifamily dwelling units.

The trip generation for the proposed project was determined using the Institute of Transportation Engineers Trip Generation Manual (10th Edition, 2017). The attached tables provide a summary of the proposed project trips for both the original and revised site plan. In general, the trip generation is lower with the revised site plan over the original site plan.

Summary

The revised site plan shows overall lower trip generation over the original site plan. As the original site plan has higher anticipated trip generation, it is also a more conservative estimate of the proposed

project. It is recommended that analyses utilize the original site plan for analysis purposes as it provides a conservative approach.

Please contact us at (949) 878-3509 if you have any questions regarding this analysis.

Sincerely,

Thomas Wheat, PE, TE
President

Registered Civil Engineer *#69467*
Registered Traffic Engineer *#2565*

David Chew, PTP
Transportation Planner

Daniel Flores, EIT
Project Engineer

183'-0"
DETENTION BASIN

182'-7"
PHASE 2

255'-8"
PHASE 1

330'-0"

5'-0" SETBACK

5'-0" SETBACK

30'-0" PARKING SETBACK

10'-0" SETBACK

Phase Line

Proposed Access Ramp

Transformer

Elec. Rm.

A1

B1

R19'-0"

Stair #2

C1

B1

Elev. #1 & 2

Laundry Room

Bike Room

Trash Rm

Community Room

Building B
4 Stories

B2

C1

B1

B1

Stair #1

Building A
3 Stories

Vehicular Gate
(Exit Only)

Stair #3

Loading

Elec. Rm.

Stair #4

B2

Storage

Stair #5

A1 Units
Above

Laundry Room

Teen Area

Kids Playground

Maint. Room

Turf Area

BBQ Area

A2

Building A
3 Story Wing

Trash Rm

C1 Units
Above

Community Room

C2 Units
Above

Gate

Bike Room

Stair #2

C2

Leasing Office

A1 Units
Above

Stair #1

Mail

USPS Pkg

Vehicular Gate

Line of Dedication

Sierra Avenue

32'-0"

122'-6"

68'-5"

28'-6"

120'-0"

39'-5"

55'-2"

8'-3"

17'-8"

69'-0"

12'-5"

219'-2"

150'-6"

24'-9"

120'-1"

38'-8"

27'-2"

149'-5"

99'-5"

56'-2"

61'-8"

55'-6"

135'-4"

30'-0"

26'-9"

84'-2"

34'-7"

67'-0"

31'-6"

32'-0"

377'-9"

5'-0" SETBACK

OPT D LEVEL 1 FLOOR PLAN

Courtplace At Fontana

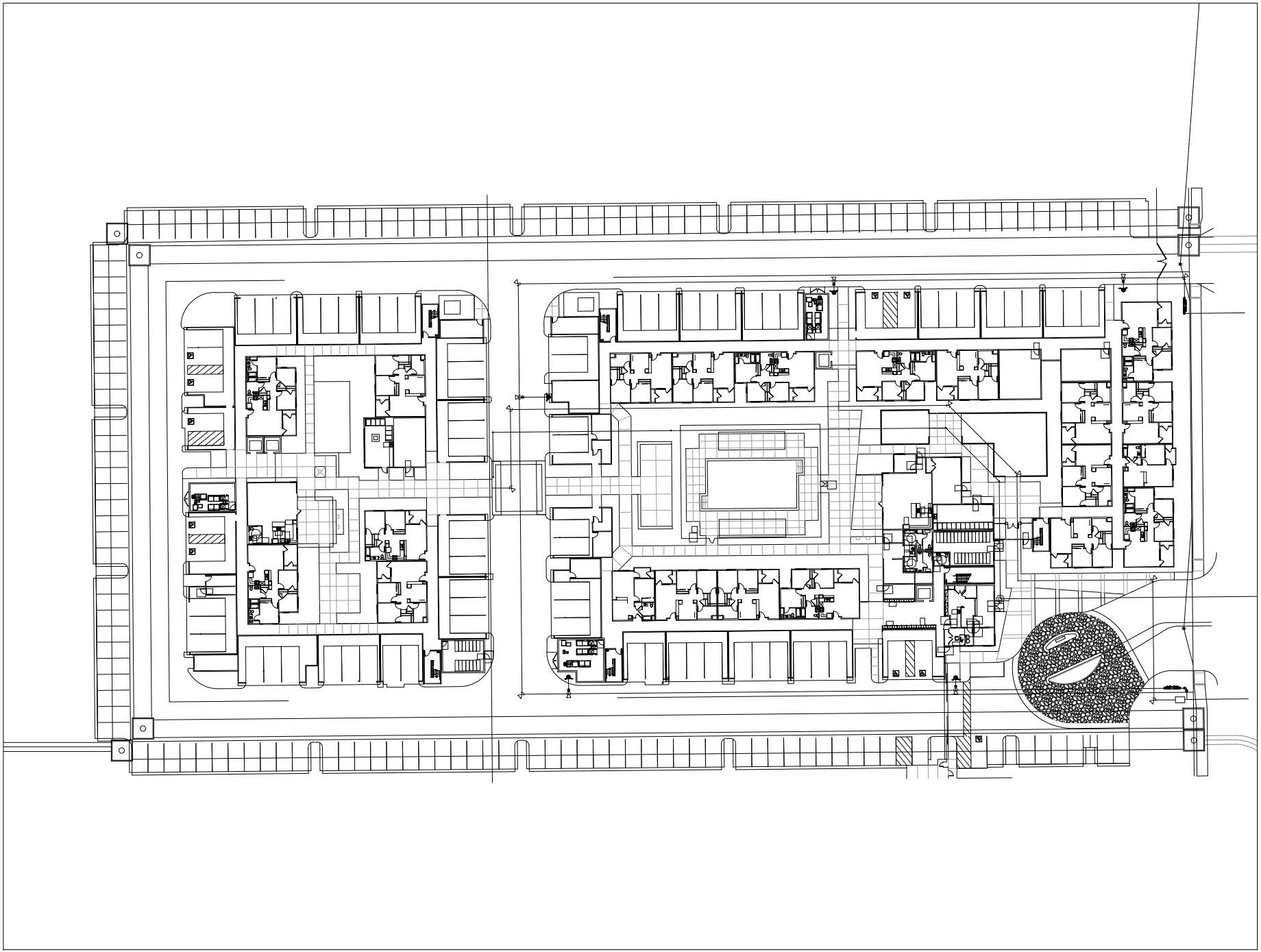
Density Study

ARCHITECT: DNA
DESIGN AND ARCHITECTURE
2062 BUSINESS CENTER DRIVE SUITE 140
IRVINE, CA 92612
714-389-1890

OWNER (APPLICANT): RELATED COMPANIES
18201 VON KARMAN AVE. STE 900
IRVINE, CA 92612
949-660-7272

PROPERTY ADDRESS: 11196 SIERRA AVENUE
FONTANA, CA 92337

DATE: 11-5-21
PROJECT NO: 20-102
NORTH:
SCALE: 0 10 20 40 60
SHEET #: A2.0



Original Site Plan Trip Generation Table

Proposed Land Use[1]	Qty	Unit[2]	Daily Trips (ADTs)		AM Peak Hour					PM Peak Hour				
			Rate	Volume	Rate	In:Out Split	Volume			Rate	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Multi-family Housing (Low Rise) (220)	155	DU	7.32	1,135	0.46	23:77	16	55	72	0.56	63:37	55	32	87
Total				**1,135**			**16**	**55**	**72**			**55**	**32**	**87**

1: Rates from ITE Trip Generation (10th Edition, 2017)

2: DU = Dwelling Units

Revised Site Plan Trip Generation Table

Proposed Land Use[1]	Qty	Unit[2]	Daily Trips (ADTs)		AM Peak Hour					PM Peak Hour				
			Rate	Volume	Rate	In:Out Split	Volume			Rate	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Multi-family Housing (Low Rise) (220)	106	DU	7.32	776	0.46	23:77	11	38	49	0.56	63:37	37	22	59
Total				**776**			**11**	**38**	**49**			**37**	**22**	**59**

1: Rates from ITE Trip Generation (10th Edition, 2017)

2: DU = Dwelling Units

Fontana Southridge Focused Traffic Impact Analysis

City of Fontana, California

December 21, 2020

Prepared by:

TJW ENGINEERING, INC.
6 Venture, Suite 225
Irvine, CA 92618
949.878.3509 | www.tjwengineering.com

TJW ENGINEERING, INC.
TRAFFIC ENGINEERING &
TRANSPORTATION PLANNING
CONSULTANTS

December 21, 2020

Mr. Stan Smith
RELATED CALIFORNIA
18201 Von Karman Avenue, Suite 900
Irvine, CA 92612

Subject: Focused Traffic Impact Analysis – Fontana Southridge, City of Fontana

Dear Mr. Smith:

TJW ENGINEERING, INC. (TJW) is pleased to present you with this focused traffic impact analysis for the proposed multi-family residential project located on the west side of Sierra Avenue between Under Wood Drive and Jurupa Avenue in the City of Fontana. The proposed project includes 155 multi family dwelling units in its full capacity. However, the project will be built in phases. For this traffic analysis, the project will be analyzed as full built-out, with all 155 units occupied.

This focused traffic study has been prepared to meet the traffic study requirements for the City of Fontana and assesses the forecast traffic operations associated with the proposed project and its impact on the local street network. This report is being submitted to you for review and forwarding to the City of Fontana

Please contact us at (949) 878-3509 if you have any questions regarding this analysis.

Sincerely,

Thomas Wheat, PE, TE
President

David Chew, PTP
Transportation Planner

Registered Civil Engineer *#69467*
Registered Traffic Engineer *#2565*

Daniel Flores, EIT
Project Engineer

Fontana Southridge
Focused Traffic Impact Analysis

City of Fontana, California

December 21, 2020

Prepared for:
Mr. Stan Smith
RELATED CALIFORNIA
18201 Von Karman Avenue Suite 900
Irvine, CA 92612

Prepared by:
Thomas Wheat, PE, TE
David Chew, PTP
Daniel Flores, EIT

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1.0 EXECUTIVE SUMMARY

This focused traffic impact analysis analyzes the projected traffic operations associated with the proposed Fontana Southridge project located at on the west side of Sierra Avenue between Under Wood Drive and Jurupa Avenue in the City of Fontana. The purpose of this analysis is to evaluate potential circulation system deficiencies that may result from development of the proposed project, and to recommend improvements to achieve acceptable operations, if applicable. This analysis has been prepared in coordination with the City of Fontana via a scoping agreement (See **Appendix A**) and is pursuant to applicable City of Fontana and County of San Bernardino guidelines.

The proposed project consists of 155 multi-family dwelling units. The site is currently zoned and classified as General Commercial (G-C) in the City of Fontana General Plan Land Use. The project site is currently vacant. The City of Fontana has a future proposed land use of Walkable Mixed-Use Urban Village (WMXU-2).

The proposed project is anticipated to be built and generating trips in 2023. A growth rate of 2% was used to account for 2023 volumes. The proposed project is projected to generate 1,135 daily trips, 72 AM peak hour trips, and 87 PM peak hour trips.

The following four (4) intersections in the vicinity of the project site have been included in the intersection level of service (LOS) analysis:

1. Sierra Ave/Santa Ana Ave;
2. Sierra Ave/Under Wood Dr;
3. Sierra Ave/Jurupa Ave;
4. Sierra Ave/Sierra Crossroads Access Dr;

The study intersections are analyzed for the following study scenarios:

- Existing Baseline Conditions (Existing);
- Construction Phase (Construction);
- Opening Year plus Cumulative Projects (Existing + Ambient + Cumulative); and
- Opening Year plus Cumulative Projects Plus Project (Existing + Ambient + Cumulative + Project).

1.1 SUMMARY OF PROJECT RELATED TRANSPORTATION DEFICIENCIES

Table ES-1 summarizes the results of the intersection level of service analysis based on the City of Fontana thresholds of significance for analyzing transportation deficiencies.

Table ES-1

Summary of Project Related Transportation Deficiencies

Intersection		Construction Phase	Opening Year With Project
1	Sierra Ave/Santa Ana Ave	No Deficiency	No Deficiency
2	Sierra Ave/Under Wood Dr.	No Deficiency	No Deficiency
3	Sierra Ave/Jurupa Ave	No Deficiency	No Deficiency
4	Sierra Ave/Sierra Crossroads Access Dr.	No Deficiency	No Deficiency

1.2 SUMMARY OF LEVEL OF SERVICE ANALYSIS RESULTS

Existing Baseline Conditions

The study intersections are projected to operate at an acceptable LOS during the AM and PM peak hours for *Existing* baseline conditions with the exception of the following intersections.

- #3 – Sierra Ave/Jurupa Ave (AM and PM Peak Hours)
- #4 – Sierra Ave/Sierra Crossroads Access Dr. (AM and PM Peak Hours)

Construction Phase (Construction) Conditions

The study intersections are projected to operate at an acceptable LOS during the AM and PM peak hours for *Construction Phase* conditions with the exception of the following intersections.

- #3 – Sierra Ave/Jurupa Ave (AM and PM Peak Hours)
- #4 – Sierra Ave/Sierra Crossroads Access Dr. (AM and PM Peak Hours)

Opening Year Plus Cumulative (OY) Conditions

The study intersections are projected to operate at an acceptable LOS during the AM and PM peak hours for *Opening Year Plus Cumulative* conditions with the exception of the following intersections.

- #3 – Sierra Ave/Jurupa Ave (AM and PM Peak Hours)
- #4 – Sierra Ave/Sierra Crossroads Access Dr. (AM and PM Peak Hours)

Opening Year Plus Cumulative Plus Project (OYP) Conditions

The study intersections are projected to operate at an acceptable LOS during the AM and PM peak hours for Opening Year Plus Cumulative Plus Project conditions.

1.2 OFF-SITE ROADWAY AND SITE ACCESS IMPROVEMENTS

Wherever necessary, roadways adjacent to the proposed project site and site access points will be constructed in compliance with recommended roadway classifications and respective cross-sections in the City of Fontana General Plan or as directed by the City Engineer.

Sight distance at each project access point should be reviewed with respect to City sight distance standards at the time of final grading, landscaping and street improvement plans.

Signing/striping should be implemented in conjunction with detailed construction plans for the project site.

Site access will be provided via one (1) full access driveway along Sierra Avenue. A second driveway, located north of the main driveway, will be provided, but will be utilized for emergency access only. The primary access driveway will provide 150-feet of stacking (two 75-foot lanes) between the proposed access pad and the adjacent roadway. This meets the required stacking distance needed per City Standard No. 701 *Access Management Standard*.

The proposed primary driveway will align with the Sierra Crossroads access driveway east of Sierra Avenue and proposes the installation of a traffic signal. Peak hour traffic signal warrants are met for the "with project" scenarios at this study intersection.

1.3 SUMMARY OF DEFICIENCIES AND RECOMMENDED IMPROVEMENTS

The determination of a deficiency at an intersection is based on the project's contribution to the intersection's delay (in seconds) as defined in *The City of Fontana Traffic Impact Study Guidelines (October 2020)*. Based on those thresholds, no off-site improvements were identified since the proposed project is projected to result in no deficiencies at the study intersections for "with project" analysis scenarios.

1.4 SUMMARY OF VEHICLE MILES TRAVELED ANALYSIS

Consistent with the new metric of VMT for analysis of transportation impacts, this analysis follows VMT guidelines set forth by the *City of Fontana Traffic Impact Analysis (TIA) Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (October, 21st, 2020).* For land use projects, affordable or supportive housing is to be presumed to cause a less than significant impact.

As the project falls within affordable or supportive housing, the project is presumed to have a less than significant transportation impact per City guidelines.

2.0 INTRODUCTION

This focused traffic impact analysis analyzes the projected traffic operations associated with the proposed Fontana Southridge project located at on the west side of Sierra Avenue between Under Wood Drive and Jurupa Avenue in the City of Fontana. The purpose of this study is to evaluate potential circulation system deficiencies that may result from development of the proposed project, and to recommend improvements to achieve acceptable operations, if applicable. This analysis has been prepared in coordination with the City of Fontana via a scoping agreement (See **Appendix A**) and is pursuant to applicable City of Fontana traffic study guidelines.

2.1 PROJECT DESCRIPTION

The proposed project consists of 155 multi-family dwelling units. Site access is planned via one full-access driveway on Sierra Crossroads Access Driveway. The site is currently zoned and classified as General Commercial (G-C) in the City of Fontana General Plan Land Use. The project site is currently vacant. The City of Fontana has a future proposed land use of Walkable Mixed Use Urban Village (WMXU-2).

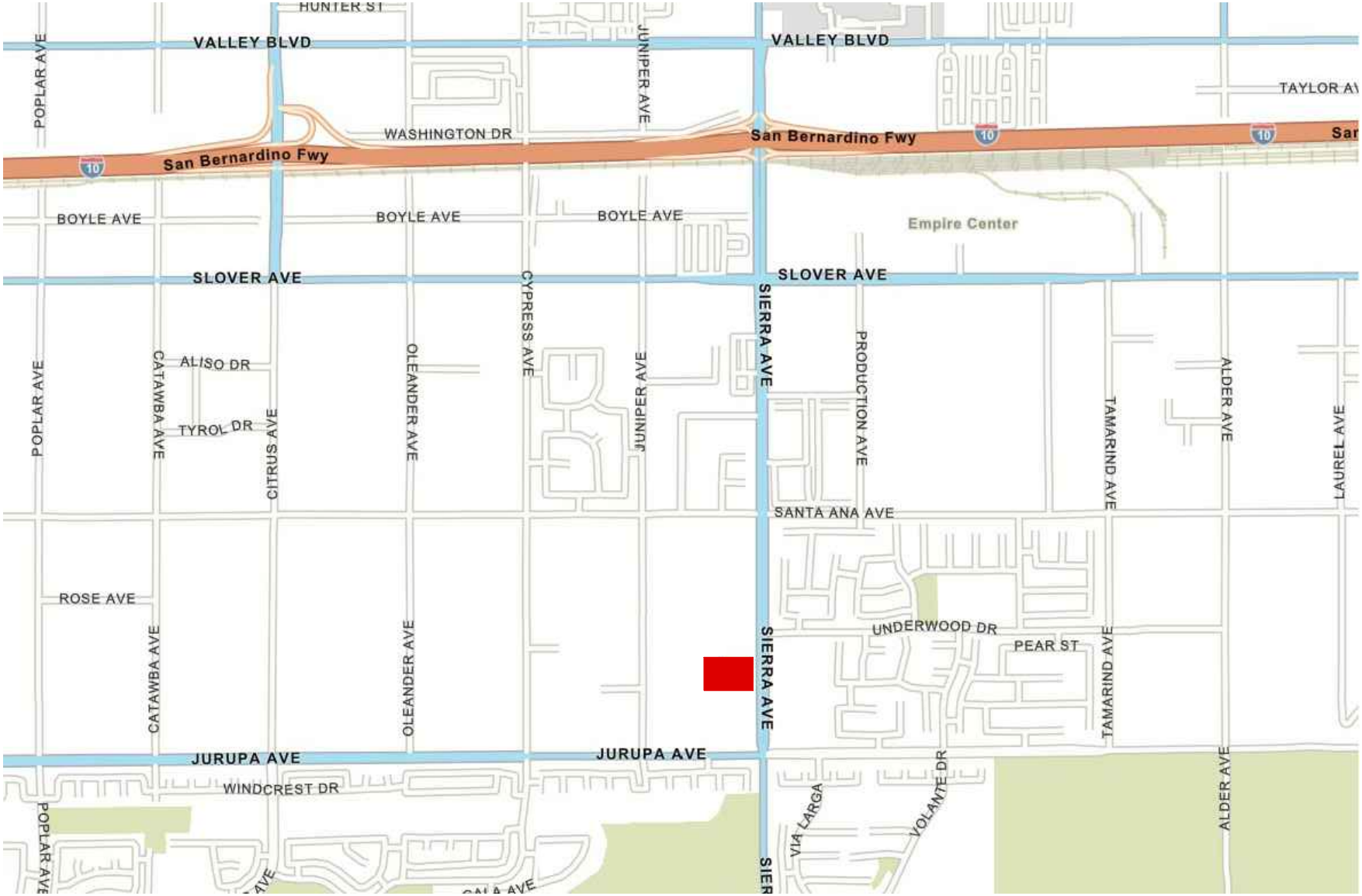
The proposed project is anticipated to be built and generating trips in 2023. A growth rate of 2% was used to account for 2023 volumes. The proposed project is projected to generate 1,135 daily trips, 72 AM peak hour trips, and 87 PM peak hour trips.

Exhibit 1 shows the project site location. **Exhibit 2** shows the proposed project site plan.

2.2 STUDY AREA

The following four (4) intersections in the vicinity of the project site have been included in the intersection level of service (LOS) analysis:

1. Sierra Ave/Santa Ana Ave;
2. Sierra Ave/Under Wood Dr.;
3. Sierra Ave/Jurupa Ave;
4. Sierra Ave/Sierra Crossroads Access Dwy.



Legend:

Project Site

Exhibit 1: Project Location

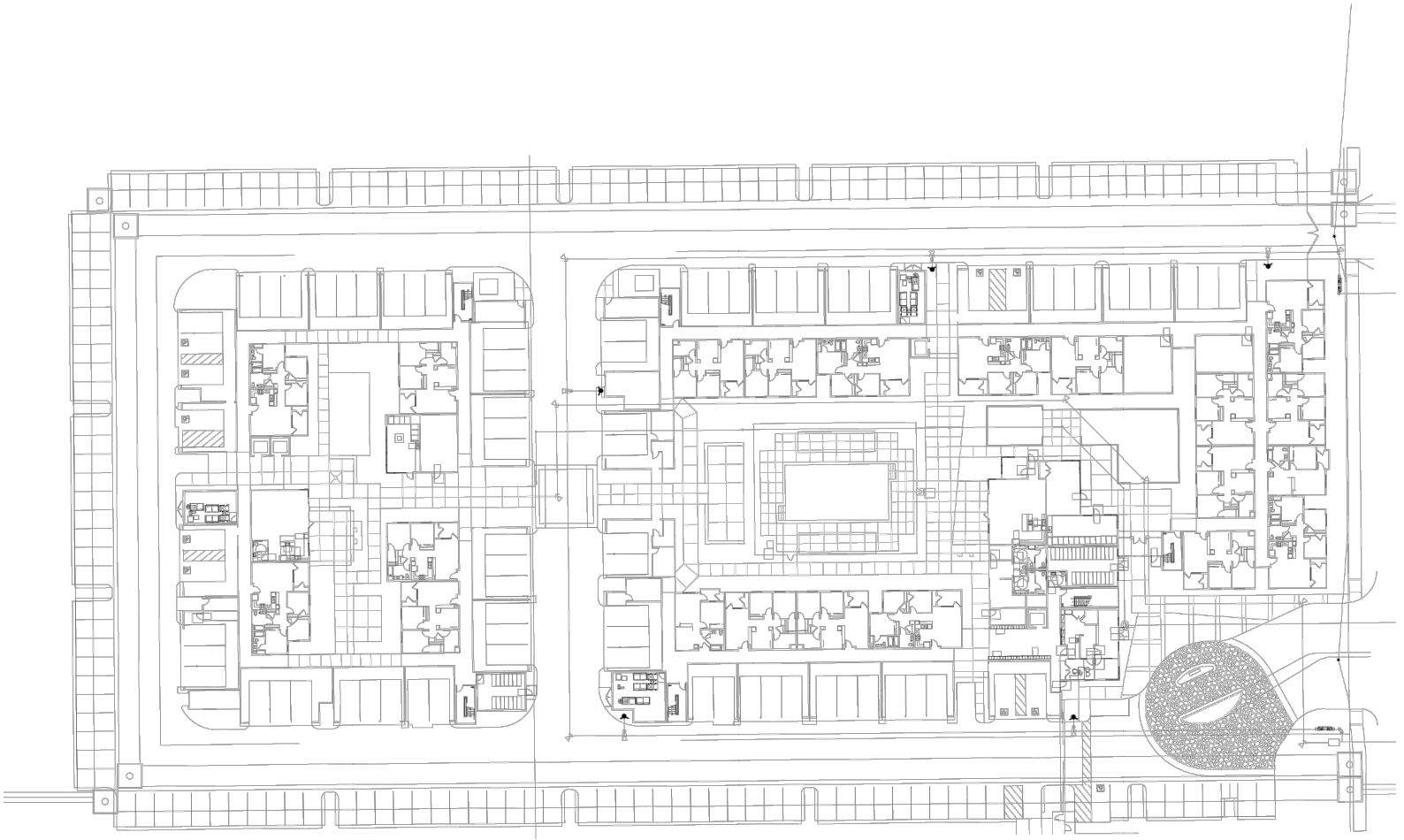


Exhibit 2: Proposed Project Site Plan

This traffic analysis follows the *City of Fontana Development Services Department Traffic Impact Study Guidelines (March 2013).*

Exhibit 3 shows the location of the study intersections which are analyzed for the following study scenarios:

- Existing Baseline Year (Existing);
- Construction Phase (Construction);
- Opening Year plus Cumulative Projects (Existing + Ambient + Cumulative); and
- Opening Year plus Cumulative Projects Plus Project (Existing + Ambient + Cumulative + Project).

Traffic operations are evaluated for the following time periods:

- Weekday AM Peak Hour occurring within 7:00 AM to 9:00 AM; and
- Weekday PM Peak Hour occurring within 4:00 PM to 6:00 PM.

2.3 ANALYSIS METHODOLOGY

2.3.1 Intersection Analysis Methodology

Level of Service (LOS) is commonly used to describe the quality of flow on roadways and at intersections using a range of LOS from LOS A (free flow with little congestion) to LOS F (severely congested conditions). The definitions for LOS for interruption of traffic flow differ depending on the type of traffic control (traffic signal, unsignalized intersection with side street stops, unsignalized intersection with all-way stops). The *Highway Capacity Manual (HCM) 6* (Transportation Research Board, 2016) methodology expresses the LOS of an intersection in terms of delay time for the intersection approaches. The HCM methodology utilizes different procedures for different types of intersection control.

The City of Fontana traffic impact study guidelines require signalized intersection operations be analyzed utilizing the HCM 6th Edition methodology. Intersection LOS for signalized intersections is based on the intersections average control delay for all movements at the intersection during the peak hour. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay.

Exhibit 3: Proposed Study Area

Table 1 describes the general characteristics of traffic flow and accompanying delay ranges at signalized intersections.

Table 1

HCM – LOS & Delay Ranges – Signalized Intersections

Level of Service	Description	Delay (in seconds)
A	Very favorable progression; most vehicles arrive during green signal and do not stop. Short cycle lengths.	0 – 10.00
B	Good progression, short cycle lengths. More vehicles stop than for LOS A.	10.01 – 20.00
C	Fair progression; longer cycle lengths. Individual cycle failures may begin to appear. The number of vehicles stopping is significant, though many vehicles still pass through without stopping.	20.01 – 35.00
D	Progression less favorable, longer cycle length and high flow/capacity ratio. The proportion of vehicles that pass through without stopping diminishes. Individual cycle failures are obvious.	35.01 – 55.00
E	Severe congestion with some long-standing queues on critical approaches. Poor progression, long cycle lengths and high flow/capacity ratio. Individual cycle failures are frequent.	55.01 – 80.00
F	Very poor progression, long cycle lengths and many individual cycle failures. Arrival flow rates exceed capacity of intersection.	> 80.01

Source: Transportation Research Board, *Highway Capacity Manual*, HCM6 Edition (Washington D.C., 2016).

Collected peak hour traffic volumes have been adjusted using a peak hour factor (PHF) to reflect peak 15-minute volumes. It is a common practice in LOS analysis to conservatively use a peak 15-minute flow rate applied to the entire hour to derive flow rates in vehicles per hour that are used in the LOS analysis. The PHF is the relationship between the peak 15-minute flow rate and the full hourly volume. PHF = [Hourly Volume]/ [4 * Peak 15-Minute Volume]. The use of a 15-minute PHF produces a more detailed and conservative analysis compared to analyzing vehicles per hour. Existing PHFs, obtained from the existing traffic counts have been used for all analysis scenarios in this study.

The City of Fontana traffic study guidelines also require unsignalized intersection operations be analyzed utilizing the HCM 6th Edition methodology. Intersection operation for unsignalized intersections is based on the weighted average control delay expressed in seconds per vehicle.

At a two-way or side-street stop-controlled intersection, LOS is calculated for each stop-controlled minor street movement, for the left-turn movement(s) from the major street, and for the intersection as a whole. For approaches consisting of a single lane, the delay is calculated as the average of all movements in that lane. For all-way stop-controlled intersection, LOS is computed for the intersection as a whole.

Table 2 describes the general characteristics of traffic flow and accompanying delay ranges at unsignalized intersections.

Table 2

HCM – LOS & Delay Ranges – Unsignalized Intersections

Level of Service	Description	Delay (in seconds)
A	Little or no delays.	0 – 10.00
B	Short traffic delays.	10.01 – 15.00
C	Average traffic delays.	15.01 – 25.00
D	Long traffic delays. Multiple vehicles in queue.	25.01 – 35.00
E	Very long delays. Demand approaching capacity of intersection	35.01 – 50.00
F	Very constrained flow with extreme delays and intersection capacity exceeded.	> 50.01

Source: Transportation Research Board, *Highway Capacity Manual*, HCM6 Edition (Washington D.C., 2016).

This analysis utilizes *Trafficware's Vistro 2021*, analysis software for all signalized and unsignalized intersections. Vistro is a macroscopic traffic software program that is based on the signalized intersection capacity analysis specified in Chapter 16 of the HCM. The level of service and capacity analysis performed within Vistro takes the optimization and coordination of signalized intersections within a network into consideration.

2.3.2 Vehicle Miles Traveled (VMT) Analysis

Senate Bill (SB) 743 was adopted in 2013 requiring the Governor's Office of Planning and Research (OPR) to identify new metrics for identifying and mitigating transportation impacts within the California Environmental Quality Act (CEQA). For land use projects, OPR has identified Vehicle Miles Traveled (VMT) as the new metric for transportation analysis under CEQA. The regulatory changes to the CEQA guidelines that implement SB 743 were approved on December 28th, 2018 with an implementation date of July 1st, 2020 as the new metric.

Consistent with the new metric of VMT for analysis of transportation impacts under CEQA, this analysis follows the VMT guidelines set forth by the *City of Fontana Traffic Impact Analysis (TIA) Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (October 21st, 2020).*

2.4 PERFORMANCE CRITERIA

2.4.1 City of Fontana

The City of Fontana has established level of service "C" or better as acceptable LOS for all intersections along the designated street and highway system in the City's General Plan Circulation Element.

For the purposes of analyzing transportation deficiencies, the City of Fontana identifies deficiencies through a comparison of "without project" and "with project" traffic conditions. Determination of a deficiency at an intersection is based on a project's contribution to the intersection's delay (in seconds) as defined below **Table 3**. Note, thresholds for LOS A, B, and C do not apply to projects consistent with the General Plan.

Table 3
City of Fontana Thresholds of Significance

Level of Service	Significant Impact Threshold
A/B	10.0 Seconds
C	8.0 Seconds
D	5.0 Seconds
E	3.0 Seconds
F	1.0 Seconds

Source: City of Fontana Traffic Impact Analysis Guidelines (October 21, 2020)

2.5 CUMULATIVE PROJECTS TRAFFIC

This analysis accounts for other reasonably foreseeable development projects which are either approved or are currently being processed in the study area as part of a cumulative analysis scenario. A list of cumulative projects was developed for this analysis through consultation with the City of Fontana staff. A summary of cumulative projects land uses is shown below in **Table 4**.

Table 4
Cumulative Project List

Project		Land Use	Qty	Units[1]	AM Peak Hour			AM Peak Hour			Daily
					In	Out	Total	In	Out	Total	
1	Fontana Foothills Commerce Center	Warehouse	754.41	TSF	99	29	128	39	105	144	1,313
2	Goodman Industrial Park Fontana III	Warehouse	894.77	TSF	117	35	152	46	124	170	1,557
		High-Cube Cold Warehouse	223.69	TSF	29	9	38	11	31	42	389
				Subtotal	146	44	190	57	155	212	1,946
3	Southwest Fontana Logistics Center	Warehouse	1,628.94	TSF	213	64	277	83	226	309	2,834
		City Park	17.45	AC	0	0	0	1	1	2	14
				Subtotal	213	64	277	84	227	311	2,848
				Total	458	137	595	180	487	667	6,107

[1] TSF = Thousand Square Feet; AC = Acres

[2] Source: City of Fontana (See ***Appendix C***)

3.0 EXISTING BASELINE CONDITIONS

3.1 EXISTING CIRCULATION NETWORK/STUDY AREA CONDITIONS

The characteristics of the roadway system in the vicinity of the proposed project site are described in **Table 5.**

Table 5

Roadway Characteristics within Study Area

Roadway	Classification[1]	Jurisdiction	Direction	Existing Travel Lanes	Median Type[2]	Speed Limit (mph)	On-Street Parking
Sierra Ave	Major Highway	Fontana	North-South	5	RM	50	No
Santa Ana Ave	Secondary Highway	Fontana	East-West	4	RM	40	No
Underwood Dr.	Collector	Fontana	East-West	2	NM	35	Yes
Jurupa Ave	Primary Highway	Fontana	East-West	6	RM	40	No

1: Sources: City of Fontana General Plan (March, 2017)

2: TWLTL = Two-Way Left-Turn Lane, RM= Raised Median, PM = Painted Median, NM = No Median.

Exhibit 4 show existing baseline conditions study area intersection and roadway geometry.

3.2 CITY OF FONTANA GENERAL PLAN CIRCULATION ELEMENT

The proposed project site is located within the City of Fontana. **Appendix A** contains the current *City of Fontana General Plan Circulation Plan* and an explanation of roadway cross sections.

3.3 EXISTING TRUCK NETWORK

Within the study area Sierra Avenue, Jurupa Avenue, and Slover Avenue are considered truck routes.

3.4 EXISTING BICYCLE AND PEDESTRIAN FACILITIES

Within the study area, Jurupa Avenue has Class I bike lane, Sierra Avenue and Santa Ana Avenue Class II bike lanes.

According to the *City of Fontana General Plan Conceptual Bicycle Facilities, Class II* bicycle routes are proposed on Sierra Avenue and Santa Ana Avenue, Class I bicycle routes are proposed on Jurupa Avenue.

Appendix A contains the *City of Fontana General Plan Conceptual Bicycle Facilities*.

3.5 EXISTING PUBLIC TRANSIT SERVICES

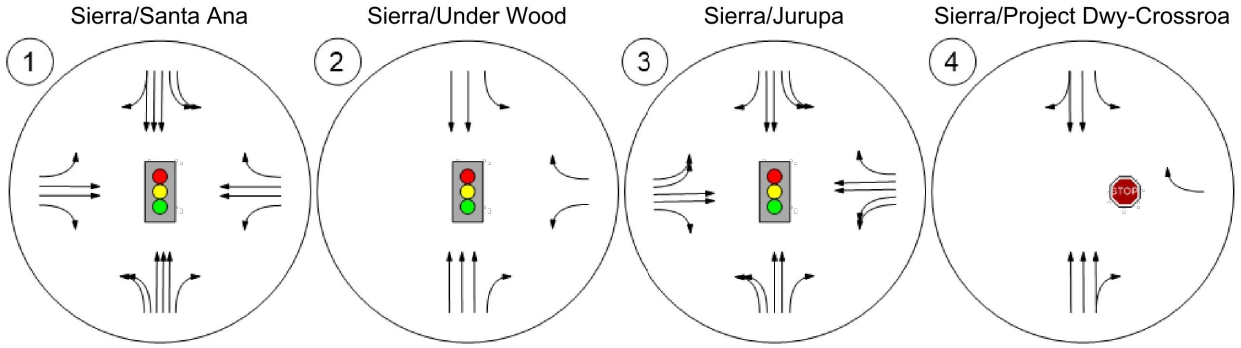
The City of Fontana is served by Omnitrans which provides transit service throughout Fontana. **Exhibit 5** shows the Omnitrans routes in the vicinity of the project site.

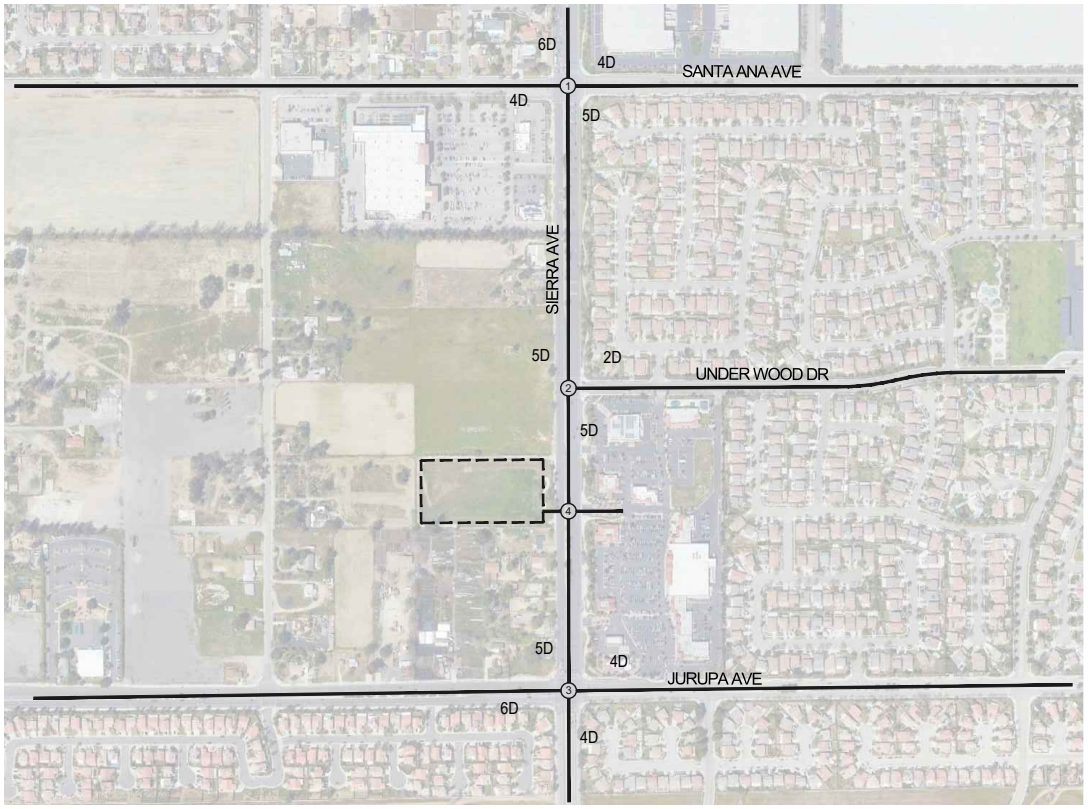
The nearest transit route is Omnitrans Route 82 with stops at the intersections of Sierra Avenue/Santa Ana Avenue, Sierra Avenue/Under Wood Drive, and Sierra Avenue/Jurupa Avenue.

3.6 EXISTING TRAFFIC VOLUMES

To determine the existing operation of the study intersections, AM and PM peak period traffic volumes were estimated based on new traffic counts collected on Wednesday, October 21, 2020 and historical data from 2018. Historical data was grown by an ambient 2% growth rate to establish 2020 existing baseline conditions. A comparison of new traffic counts and established existing baseline conditions was conducted to determine an appropriate growth rate to account for the reduction in traffic volumes due to the COVID-19 situation. The subsequent growth rate was applied to new traffic counts to represent existing baseline conditions for those intersections that did not have historical data. A 0.363 average growth rate was applied to the AM Peak Hour and a 0.124 average growth rate was applied to the PM Peak Hour. Detailed traffic count data is provided in **Appendix B**.

Exhibit 6 shows existing AM and PM peak hour volumes at the study intersections.





Legend:

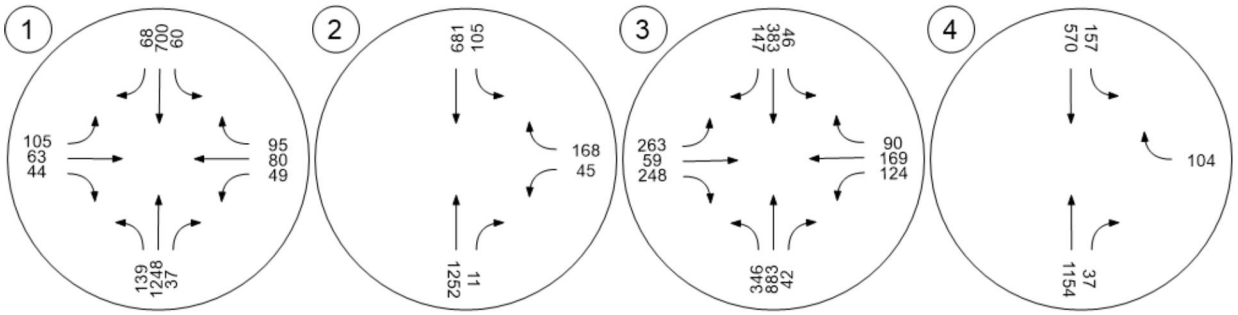
- Project Site
- 2D 2-Lane Divided Roadway
- 3D 3-Lane Divided Roadway
- 4D 4-Lane Divided Roadway
- 6D 6-Lane Divided Roadway

Exhibit 4: Existing Lane Geometry and Intersection Controls

Exhibit 5: Existing Transit Services

Not to Scale

AM PEAK HOUR



PM PEAK HOUR

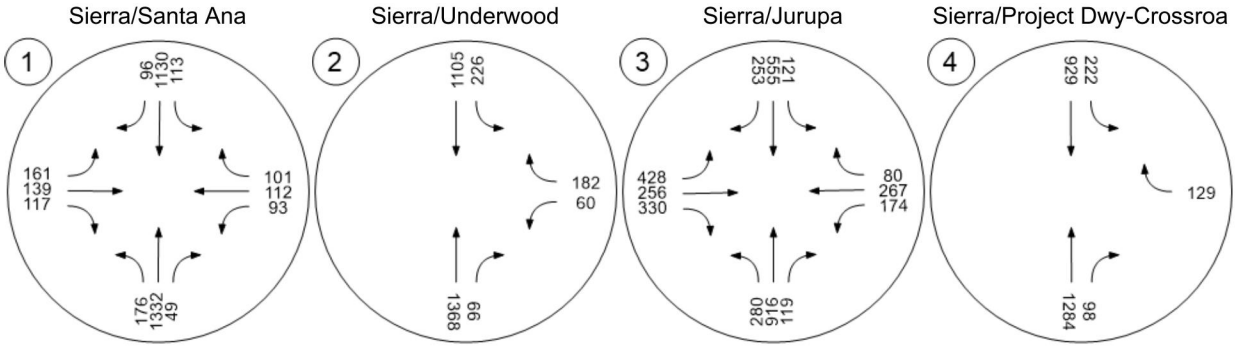


Exhibit 6: Existing AM and PM Peak Hour Volumes

3.7 EXISTING BASELINE CONDITIONS INTERSECTION LEVEL OF SERVICE ANALYSIS

Existing baseline conditions AM and PM peak hour intersection analysis is shown in **Table 6**. Calculations are based on the existing geometrics at the study area intersections as shown in **Exhibit 4.** HCM analysis sheets are provided in **Appendix D**.

Table 6

Intersection Analysis – Existing Baseline Conditions

Intersection			Control Type	Peak Hour	Existing Baseline Conditions	
					Delay[1]	LOS
1	Sierra Ave	Santa Ana Ave	Signal	AM	21.1	C
				PM	25.6	C
2	Sierra Ave	Under Wood Dr	Signal	AM	30.6	C
				PM	15.3	B
3	Sierra Ave	Jurupa Ave	Signal	AM	38.7	D
				PM	42.0	D
4	Sierra Ave	Sierra Crossroads Access Dwy	TWSC	AM	39.5	E
				PM	86.0	F

Note: TWSC = Two-Way Stop-Control, OWSC = One-Way Stop-Control; Delay shown in seconds per vehicle.
1 = Per the Highway Capacity Manual 6th Edition, overall average delay and LOS are shown for signalized and all-way stop-controlled intersections. For intersections with one-or-two-way stop-control, the delay and LOS for the worst individual movement is shown.

As shown in **Table 6**, the study intersections are currently operating at an acceptable LOS during the AM and PM peak hours for *existing* baseline conditions except for the following intersections.

- #3- Sierra Avenue/Jurupa Avenue (LOS D AM and PM Peak Hour).
- #4- Sierra Avenue/Sierra Crossroads Access Driveway (LOS E AM and LOS F PM Peak Hour).

4.0 PROPOSED PROJECT

4.1 PROJECT DESCRIPTION

The proposed project consists of 155 multi-family dwelling units. The site is currently zoned and classified as General Commercial (G-C) in the City of Fontana General Plan Land Use. The project site is currently vacant. The City of Fontana has a future proposed land use of Walkable Mixed-Use Urban Village (WMXU-2).

Exhibit 2 previously showed the proposed project site plan.

4.2 PROJECT SITE ACCESS

Site access will be provided via one (1) full access driveway along Sierra Avenue. A second driveway, located north of the main driveway, will be provided, but will be utilized for emergency access only. The primary access driveway will provide 150-feet of stacking (two 75-foot lanes) between the proposed access pad and the adjacent roadway. This meets the required stacking distance needed per City Standard No. 701 *Access Management Standard*.

4.3 PROJECT TRIP GENERATION

Trip generation represents the amount of traffic, both inbound and outbound, produced by a development. Determining trip generation for a proposed project is based on projecting the amount of traffic that the specific land uses being proposed will produce. Industry standard *Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition, 2017)* trip generation rates were used to determine trip generation of for most of the proposed project land uses.

Table 7 summarizes the projected AM peak hour, PM peak hour and daily trip generation of the proposed project. The proposed project is projected to generate 1,135 daily trips, 72 AM peak hour trips, and 87 PM peak hour trips.

Table 7

Proposed Project Trip Generation

Proposed Land Use[1]	Qty	Unit[2]	Daily Trips (ADTs)		AM Peak Hour					PM Peak Hour				
			Rate	Volume	Rate	In:Out Split	Volume			Rate	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Multi-family Housing (Low Rise) (220)	155	DU	7.32	1,135	0.46	23:77	17	55	72	0.56	63:37	55	32	87
Total				**1,135**			**17**	**55**	**72**			**55**	**32**	**87**

1: Rates from ITE Trip Generation (10th Edition, 2017)

2: DU = Dwelling Units

4.4 PROJECT TRIP DISTRIBUTION

Projecting trip distribution involves the process of identifying probable destinations and traffic routes that will be utilized by the proposed project's traffic. The potential interaction between the proposed land use and surrounding regional access routes are considered to identify the probable routes onto which project traffic would distribute. The projected trip distribution for the proposed project is based on anticipated travel patterns to and from the project site.

Exhibit 7 shows the projected trip distribution of proposed project trips.

4.5 MODAL SPLIT

The traffic reducing potential of public transit, walking and bicycling have not been considered in this analysis since transit facilities in the study area are limited.

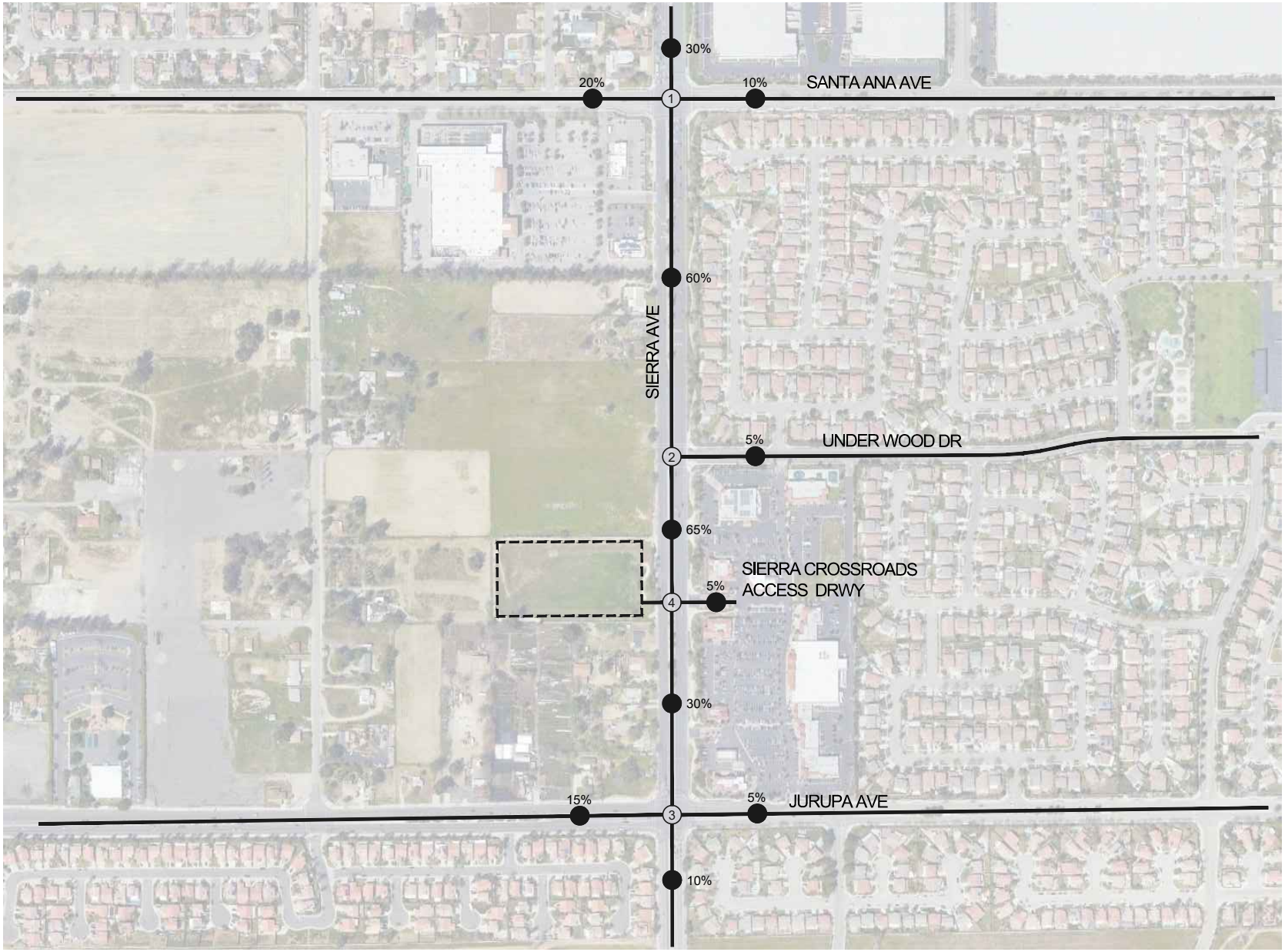


Exhibit 7: Trip Distribution of Proposed Project Trips

5.0 CONSTRUCTION PHASE CONDITIONS

Construction phase traffic conditions analysis is intended to identify conditions during project construction and assumes the proposed project is not yet built.

5.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for the *construction phase* scenario are consistent with those previously shown in **Exhibit 4**. It is assumed construction traffic will be limited to right-in and right-out only at the proposed driveway.

5.2 CONSTRUCTION PHASE TRAFFIC VOLUMES

Construction phase include background traffic. Since the construction phase is expected to happen and generating trips in 2022, the construction phase volumes include a growth rate of 2% per year, applied to existing volumes plus the anticipated construction traffic.

2022 is the estimated start period for the construction phase, where 90,000 cubic yards of imported soil will be delivered to the project job site, and an estimated 2,000 cubic yards of dirt will be imported daily for 10 weeks. Each truck will deliver about 28 cubic yards, which will be about 72 trucks per day. When converting the trucks to passenger car equivalent (PCE) the Fontana guidelines state that 4 and more axle trucks are equivalent to 3.0 PCE. 3.0 PCE x 72 trucks = 216 PCE's/day. Construction hours of operation will be from 7:30 AM to 4:00 PM. Although work is expected to stop after 4:00 PM. In order to calculate the peak hour trips 216 PCE's/day over a nine (9) hour work day was used which is equivalent to 24 PCE's/ hour. The analysis will be taking a conservative approach to anticipate trucks working through PM peak hours, so 24 peak hour trips was used in both the AM and PM peak periods.

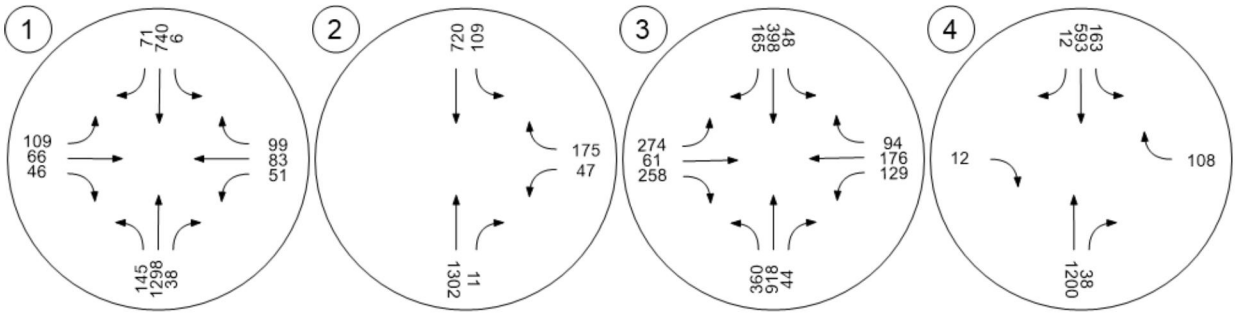
Construction Phase Volumes = (Existing (2020) Counts * 1.02^2) + Construction Trucks

Exhibit 8 shows *construction phase* AM and PM peak hour volumes at the study intersections.

5.3 CONSTRUCTION PHASE INTERSECTION LEVEL OF SERVICE ANALYSIS

Construction phase AM and PM peak hour intersection analysis is shown in **Table 8**. Calculations are based on the existing geometrics at the study area intersections as shown in **Exhibit 3.** The truck distribution does not impact the LOS at Intersection 4, and there is no significant increase in delay at any of the four intersections with the addition of the 24 peak hour trips. Intersection 4 will be a driveway with right in/out during the construction phase. HCM analysis sheets are provided in **Appendix D**.

AM PEAK HOUR



PM PEAK HOUR

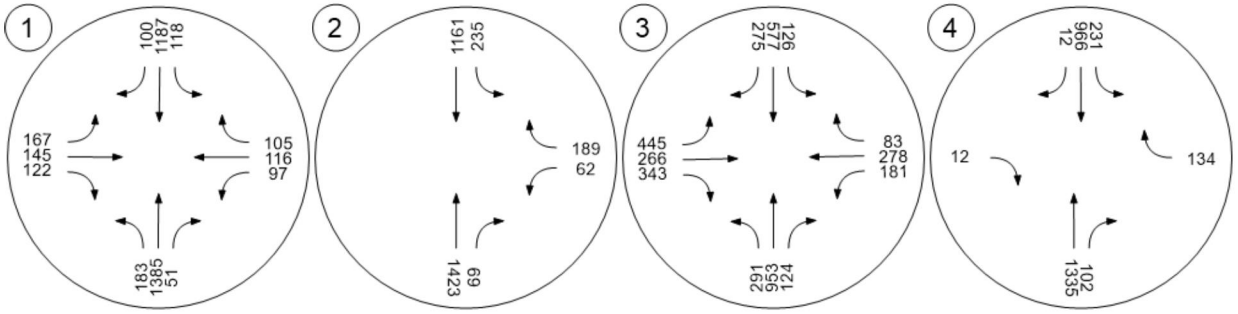


Table 8

Intersection Analysis – Construction Phase Conditions

Intersection			Control Type	Peak Hour	Construction Conditions	
					Delay[1]	LOS
1	Sierra Ave	Santa Ana Ave	Signal	AM	20.1	C
				PM	26.5	C
2	Sierra Ave	Under Wood Dr	Signal	AM	12.1	B
				PM	15.9	B
3	Sierra Ave	Jurupa Ave	Signal	AM	39.7	D
				PM	42.8	D
4	Sierra Ave	Sierra Crossroads Access Dwy	TWSC	AM	47.4	E
				PM	117.3	F

Note: TWSC = Two-Way Stop-Control, OWSC = One-Way Stop-Control; Delay shown in seconds per vehicle.
1 = Per the Highway Capacity Manual 6th Edition, overall average delay and LOS are shown for signalized.

As shown in **Table 8,** the study intersections are projected to continue to operate at an acceptable LOS during the AM and PM peak hours for *construction phase* conditions except for the following intersections:

- #3- Sierra Avenue/Jurupa Avenue (LOS D AM and PM Peak Hour).
- #4- Sierra Avenue/Sierra Crossroads Access Driveway (LOS E AM and LOS F PM Peak Hour)
    - Southbound left is the worst turning movement and causes an unacceptable LOS

Construction phase calculations are based on the existing lane geometry of the study area. Intersection 4 has an existing failing LOS for both the AM and PM peak hours. The cause for the failing LOS is the southbound left turn movement into the shopping center driveway shown in **Appendix D**. The truck distribution does not impact the LOS as intersection 4 will provide a driveway into the proposed project which will only allow right in/out during the construction phase.

6.0 PROJECT OPENING YEAR PLUS CUMULATIVE CONDITIONS (OY)

Project opening year plus cumulative (OY) traffic conditions analysis is intended identify baseline conditions in the near-term with cumulative projects and without the proposed project.

6.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for the *project opening year plus cumulative* scenario are consistent with those previously shown in **Exhibit 4** with the exception of the proposed driveway which is proposed as a signalized intersection.

6.2 PROJECT OPENING YEAR PLUS CUMULATIVE TRAFFIC VOLUMES

Project opening year plus cumulative volumes include background traffic plus the addition of traffic projected to be generated by nearby cumulative projects. Since the proposed project is expected to be built and generating trips in 2023, *project opening year plus cumulative* volumes include a growth rate of 2% per year, applied to existing volumes cumulative projects are also added to account for nearby projects.

Project Opening Year Plus Cumulative Volumes = (Project Opening Year Volumes * 1.02^3) + Cumulative Traffic

Exhibit 9 shows *project opening year plus cumulative* AM and PM peak hour volumes at the study intersections.

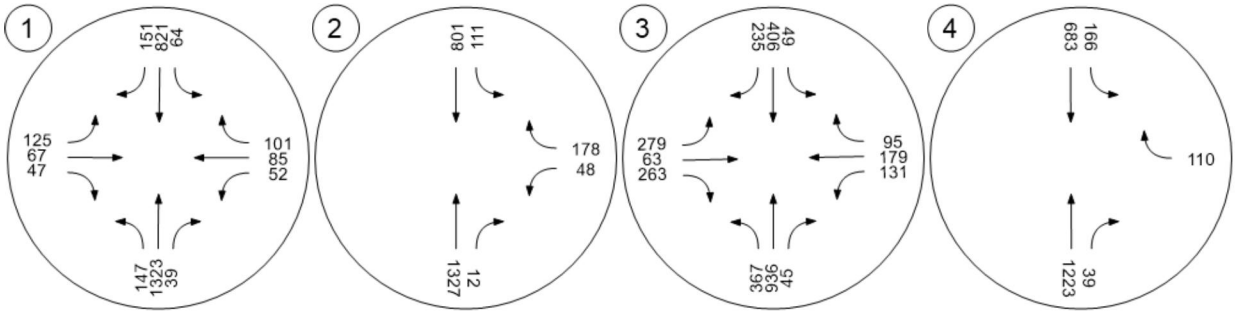
6.3 PROJECT OPENING YEAR PLUS CUMULATIVE INTERSECTION LEVEL OF SERVICE ANALYSIS

Project opening year plus cumulative conditions AM and PM peak hour intersection analysis is shown in **Table 9**. HCM analysis sheets are provided in **Appendix D.**

6.4 CUMULATIVE PROJECTS TRAFFIC

This analysis accounts for other reasonably foreseeable development projects which are either approved or are currently being processed in the study area as part of a cumulative analysis scenario. A list of cumulative projects was developed for this analysis through consultation with the City of Fontana staff.

AM PEAK HOUR



PM PEAK HOUR

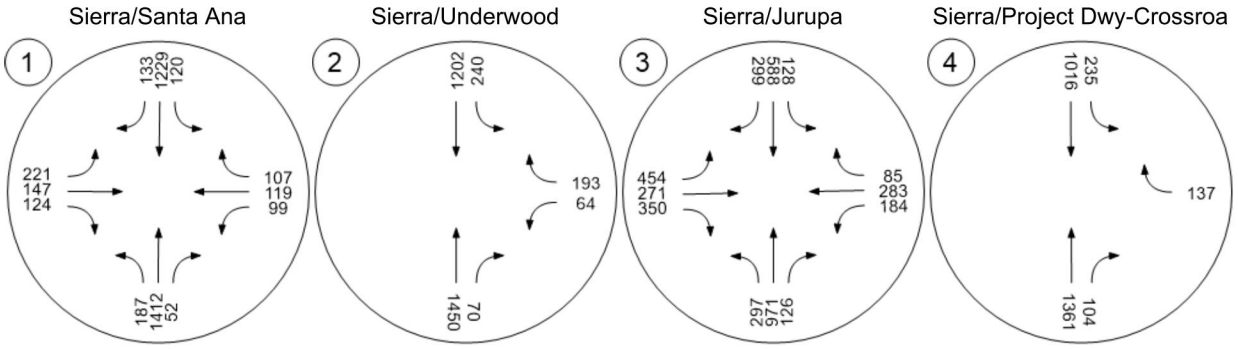


Exhibit 9: Project Opening Year Plus Cumulative AM and PM Peak Hour Volumes

Table 9

Intersection Analysis – Project Opening Year Plus Cumulative (OY) Conditions

Intersection			Control Type	Peak Hour	OY Conditions	
					Delay[1]	LOS
1	Sierra Ave	Santa Ave	Signal	AM	22.1	C
				PM	29.7	C
2	Sierra Ave	Under Wood Dr	Signal	AM	12.1	B
				PM	16.1	B
3	Sierra Ave	Jurupa Ave	Signal	AM	40.1	D
				PM	43.6	D
4	Sierra Ave	Sierra Crossroads Access Dwy	OWSC	AM	52.8	F
				PM	135.4	F

Note: AWSC = All- Way Stop-Control, OWSC = One-Way Stop Control, Delay shown in seconds per vehicle.

1 = Per the Highway Capacity Manual 6th Edition, overall average delay and LOS are shown for signalized and all-way stop-controlled intersections. For intersections with one-or-two-way stop-control, the delay and LOS for the worst individual movement is shown.

As shown in **Table 9**, the study intersections are projected to continue to operate at an acceptable LOS during the AM and PM peak hours for *project opening year plus cumulative* conditions with the exception of the following intersections:

- #3- Sierra Avenue/Jurupa Avenue (LOS D AM and PM Peak Hour).
- #4- Sierra Avenue/Sierra Crossroads Access Driveway (LOS E AM and LOS F PM Peak Hour).

7.0 PROJECT OPENING YEAR PLUS CUMULATIVE PLUS PROJECT CONDITIONS

Project opening year plus cumulative plus project (OYP) conditions analysis is intended to identify the project-related impacts on both the existing and planned near-term circulation system.

7.1 ROADWAY IMPROVEMENTS

The lane configurations and traffic controls assumed to be in place for the *project opening year plus cumulative plus project* scenario are consistent with those previously shown in **Exhibit 4**, with the exception of project driveway and other facilities assumed to be constructed by the proposed project to provide site access.

7.2 PROJECT OPENING YEAR PLUS CUMULATIVE PLUS PROJECT TRAFFIC VOLUMES

Project opening year plus cumulative plus project volumes include background traffic plus the addition of traffic projected to be generated by nearby cumulative projects and the addition the traffic projected to be generated by the proposed project. Since the proposed project is expected to be built and generating trips in 2023, *project opening year plus cumulative plus project* volumes include a growth rate of 2% per year for three years, applied to existing volumes. To account for cumulative projects, volumes were grown by an additional 2% and project volumes were added.

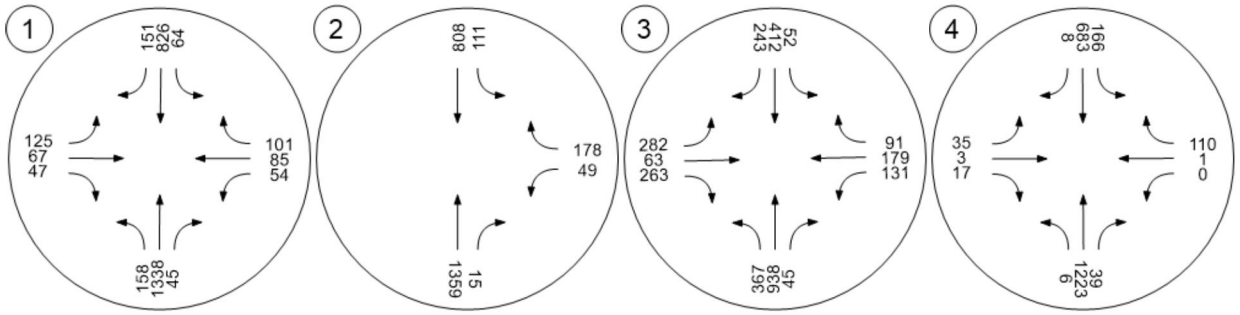
Project Opening Year Plus Cumulative Plus Project Volumes =
(Existing (2020) Counts * 1.02^3) + Cumulative Project Volume + Project Volume

Exhibit 10 shows *project opening year plus cumulative plus project* AM and PM peak hour volumes at the study intersections.

7.3 PROJECT OPENING YEAR PLUS CUMULATIVE PLUS PROJECT INTERSECTION LEVEL OF SERVICE ANALYSIS

Project opening year plus cumulative plus project conditions AM and PM peak hour intersection analysis is shown in ***Table 10***. HCM analysis sheets are provided in ***Appendix D***.

AM PEAK HOUR



PM PEAK HOUR

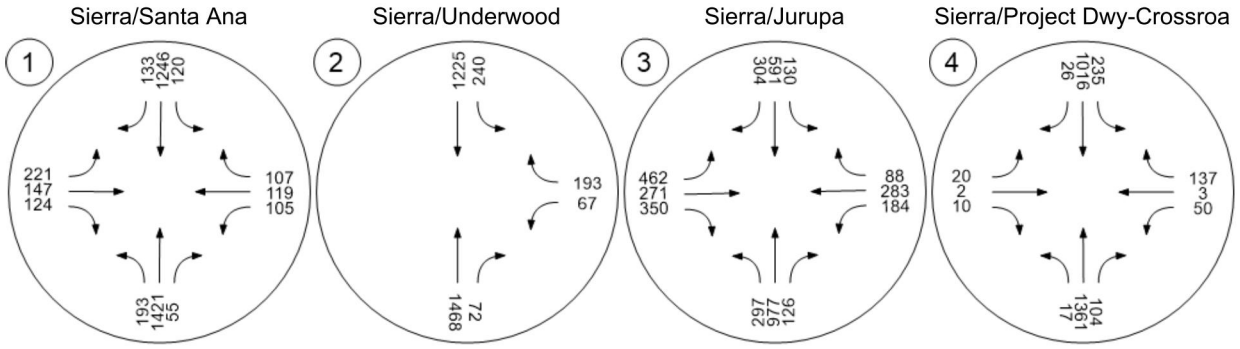


Exhibit 10:
Project Opening Year Plus Cumulative Plus Project AM and PM Peak Hour Volumes

Table 10

Intersection Analysis – Project Opening Year Plus Cumulative Plus Project (OYP) Conditions

Intersection			Control Type	Peak Hour	OY Conditions		OYP Conditions		Change	Impact?
					Delay[1]	LOS	Delay[1]	LOS		
1	Sierra Ave	Santa Ana Ave	Signal	AM	22.1	C	22.8	C	0.70	No
				PM	29.7	C	39.9	C	0.20	No
2	Sierra Ave	Under Wood Dr	Signal	AM	12.1	B	12.2	B	0.10	No
				PM	16.1	B	16.2	B	0.10	No
3	Sierra Ave	Jurupa Ave	Signal	AM	40.1	D	40.1	D	0.00	No
				PM	43.6	D	44.0	D	0.40	No
4	Sierra Ave	Sierra Crossroads Access Drwy	**Signal**	AM	52.8	F	12.5	B	(40.30)	No
				PM	135.4	F	15.0	B	(120.40)	No

Note: AWSC = All- Way Stop-Control, OWSC = One-Way Stop Control, **Signal = Improvement**, Delay shown in seconds per vehicle.
1 = Per the Highway Capacity Manual 6th Edition, overall average delay and LOS are shown for signalized and all-way stop-controlled intersections. For intersections with one-or-two-way stop-control, the delay and LOS for the worst individual movement is shown.

As shown in ***Table 10***, the study intersections are projected to continue to operate at an acceptable LOS during the AM and PM peak hours for *project opening year plus cumulative plus project* conditions.

7.4 PROJECT OPENING YEAR PLUS CUMULATIVE PLUS PROJECT SIGNAL WARRANT ANALYSIS

Traffic signal warrants for *Project opening year plus cumulative plus project* conditions have been prepared based on peak-hour intersection volumes at the project site access location. The purpose of this analysis is to ensure the need for a signal that the project is proposing. ***Table 11*** summarizes the results of the signal warrant analysis. Detailed warrant analysis sheets are contained in ***Appendix E***.

Table 11

Signal Warrant Analysis – Project Opening Year Plus Cumulative Plus Project (OYP) Conditions

Intersection			Peak Hour Signal Warrant Met?	
			AM Peak Hour	PM Peak Hour
4	Sierra Ave	Sierra Crossroads Access Drwy	Yes	Yes

8.0 PROJECT ACCESS AND CONCEPT ALIGNMENT

8.1 PROJECT ACCESS

Site access will be provided via one (1) full access driveway along Sierra Avenue. A second driveway, located north of the main driveway, will be provided, but will be utilized for emergency access only. The primary access driveway will provide 150-feet of stacking (two 75-foot lanes) between the proposed access pad and the adjacent roadway. This meets the required stacking distance needed per City Standard No. 701 *Access Management Standard*.

8.2 CONCEPT ALIGNMENT

The proposed primary driveway will align with the Sierra Crossroads access driveway east of Sierra Avenue and proposes the installation of a traffic signal. Peak hour traffic signal warrants are met for the "with project" scenarios at this study intersection.

As shown in **Exhibit 11**, the concept alignment depicts the proposed project driveway and Sierra Avenue. Sierra Avenue is a 5-lane divided roadway and will have a traffic signal installed.

8.3 QUEUING ANALYSIS

A queuing analysis was conducted for OYP conditions to determine 95th percentile queues. **Table 12** shows 95th percentile queue length for movements at intersection 4. As shown, the design storage lengths can adequately accommodate 95th percentile queues. Queuing analysis sheets are in **Appendix D**.

Table 12
Queuing Analysis – OYP Conditions

Intersection	Movement	Storage Length (ft)	95th Percentile Queue Length (ft)	
			AM Peak Hour	PM Peak Hour
#4 - Sierra Avenue/Crossroads Access Driveway	NBL	120	7	17
	SBL	205	120	184
	EB Approach	150	34	22
	WB Approach	165	75	153

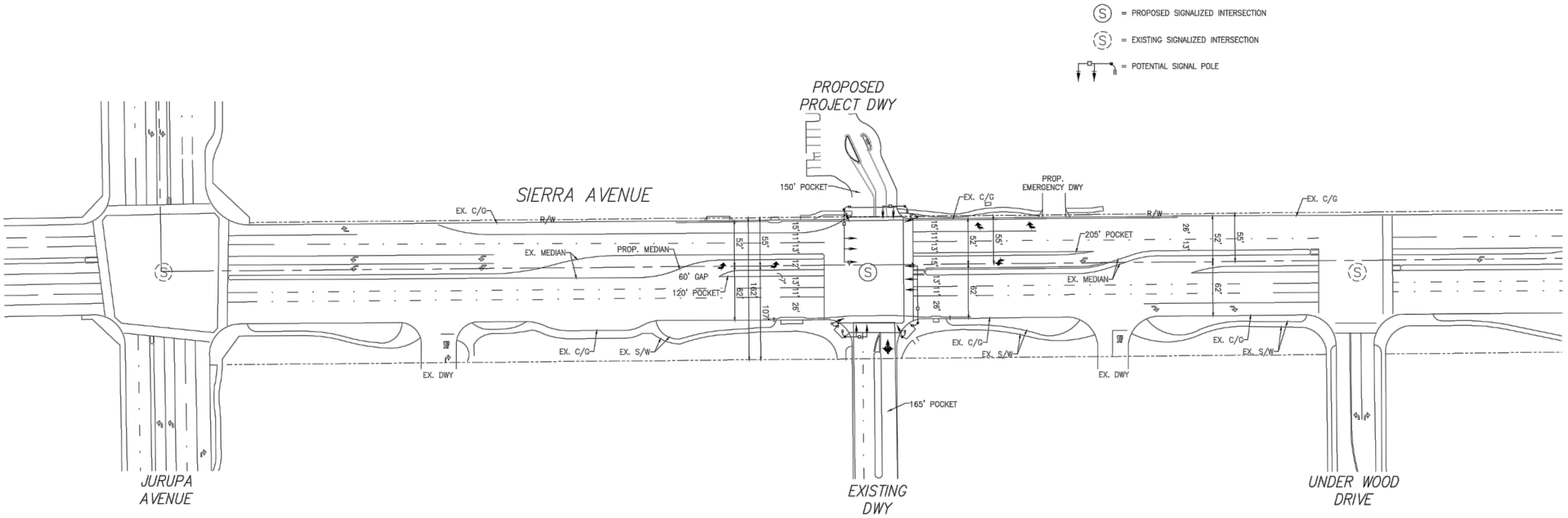


Exhibit 11: Concept Alignment Plan

9.0 VEHICLE MILES TRAVELED (VMT) ANALYSIS

Senate Bill (SB) 743 was adopted in 2013 requiring the Governor's Office of Planning and Research (OPR) to identify new metrics for identifying and mitigating transportation impacts within the California Environmental Quality Act (CEQA). For land use projects, OPR has identified Vehicle Miles Traveled (VMT) as the new metric for transportation analysis under CEQA. The regulatory changes to the CEQA guidelines that implement SB 743 were approved on December 28th, 2018 with an implementation date of July 1st, 2020 as the new metric.

9.1 VEHICLE MILES TRAVELED (VMT) ANALYSIS

Consistent with the new metric of VMT for analysis of transportation impacts, this analysis follows VMT guidelines set forth by the *City of Fontana Traffic Impact Analysis (TIA) Guidelines for Vehicle Miles Traveled (VMT) and Level of Service Assessment (October, 21st, 2020).* For land use projects, affordable or supportive housing is to be presumed to cause a less than significant impact.

As the project falls within affordable or supportive housing, the project is presumed to have a less than significant transportation impact per City guidelines.

APPENDIX A

SCOPING AGREEMENT AND FONTANA ROADWAY CLASSIFICATIONS AND CROSS SECTIONS

October 14, 2020

TJW ENGINEERING, INC.
TRAFFIC ENGINEERING & TRANSPORTATION PLANNING CONSULTANTS

Mr. Stan Smith
RELATED CALIFORNIA
18201 Von Karman Ave.
Suite 900
Irvine, CA 92612

SUBJECT: Fontana Southridge Focused Traffic Impact Analysis Scoping Agreement, City of Fontana

Dear Mr. Smith,

*TJW Engineering, Inc. (*TJW*)* will be preparing a focused traffic impact analysis (TIA) for the proposed multi-family residential project located on the west side of Sierra Avenue between Under Wood Drive and Jurupa Avenue in the City of Fontana. The proposed project includes 155 multi family dwelling units in its full capacity. However, the project will be built in phases. For this traffic analysis, the project will be analyzed as full built-out, with all 155 units occupied.

Site access will be provided via one (1) full access driveway along Sierra Avenue. A second driveway, located north of the main driveway, will be provided, but will utilized for emergency access only. The proposed site plan has been attached to this letter. The following scope of work has been prepared based on the City of Fontana Traffic Impact Study Guidelines. The Traffic Impact Study Scope form is also attached for reference.

SCOPE OF WORK

Trip Generation and Distribution Assumptions

Trip generation for the proposed project will be developed using rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition). The trip generation rates and anticipated trip generation for the project are attached. The project is anticipated to generate 1,135 daily trips, 72 AM peak hour trips, and 88 PM peak hour trips.

Proposed Land Use[1]	Qty	Unit[2]	Daily Trips (ADTs)		AM Peak Hour					PM Peak Hour				
			Rate	Volume	Rate	In:Out Split	Volume			Rate	In:Out Split	Volume		
							In	Out	Total			In	Out	Total
Multi-family Housing (Low Rise) (220)	155	DU	7.32	1,135	0.46	23:77	17	55	72	0.56	63:37	55	32	87
Total				**1,135**			**17**	**55**	**72**			**55**	**32**	**87**

1: Rates from ITE Trip Generation (10th Edition, 2017)
2: DU = Dwelling Units

Trip Distribution Assumptions

Project trip distributions will be based on the surrounding regional access routes to identify probable routes onto which project traffic would distribute. The anticipated travel patterns to and from the project site are shown in the attached exhibit.

Study Area

The study area shall generally include intersections in which the proposed project may create a significant impact. As such, TJW proposes to include the following intersections and roadway segment:

Study Intersections

1. Sierra Ave / Santa Ana Ave
2. Sierra Ave / Underwood Dr
3. Sierra Ave / Jurupa Ave
4. Sierra Ave / Sierra Crossroads Primary Access Driveway

Analysis Methodology and Scenarios

The analysis of traffic and level of service will be provided for the following scenarios and will include an assessment of traffic mitigation measures if any are required.

1. Existing No Project Conditions
2. Existing with Project Conditions
3. Opening Year (2023) No Project Conditions
4. Opening Year (2023) with Project Conditions

These scenarios were chosen since the proposed project is anticipated to generate between 50 and 100 two-way peak hour trips per the City's TIA Guidelines.

The TIA will analyze study intersections during the AM and PM peak hours. Intersection level of service (LOS) will be calculated using the Highway Capacity Manual 6 (HCM 6) analysis methodologies using Synchro software.

Volume Development

Traffic volumes for existing year traffic conditions will be based on existing AM and PM peak hour traffic counts for the study intersections identified above. New traffic counts will be conducted between the hours of 7 AM and 9 AM for the AM peak hour and between the hours of 4 PM and 6 PM for the PM peak hour and avoiding any school/roadway closure periods.

Opening Year 2023 traffic volumes will be developed by applying an annual growth rate of two (2) percent per year to the established existing year 2020 traffic counts (discussed above).

Project Impact Assessment and Mitigation Measures

Intersection LOS without the project will be compared to the intersection LOS with the project for each of the analysis scenarios to determine potential traffic/infrastructure deficiencies. Determination of traffic/infrastructure deficiencies will be made based on the City's general plan threshold standards (LOS C). If the level of service analysis shows that the project causes a deficiency at a study facility, feasible improvements will be recommended. As applicable, the project's fair share will be estimated as part of the mitigation section (fair share is 100% for direct impacts).

Signal Warrant Analysis

The project proposes to construct and align its driveway with the Sierra Crossroad Shopping Center's primary access driveway. As part of this alignment, the project is also proposing the construction of a signal light.

A peak hour signal warrant analysis will be conducted for this location to support the need to construct a signal light. The traffic signal warrant analysis will be based on the *California Manual on Uniform Traffic Control Devices* (CA MUTCD) signal warrant analysis methodology for peak hour. Traffic counts will be conducted at this location. Proposed project traffic will be added to these volumes and used to conduct the peak hour signal warrant analysis.

Since the existing Sierra Crossroads Driveway, the east approach or the intersection, prohibits left turns out of the driveway, TJW would calculate the anticipated number of left turn movements that would utilize this new traffic signal. Left turn volumes would be calculated based on ITE trip generation rates for the shopping center. These volumes would be needed to determine signal warrants for the intersection.

Gated Entry Stacking Review

Per the City Standard No. 701, *Access Management Standard*, the needed stacking distance needed between the access pad and the adjacent roadway is 150-feet. This is based on the 155 dwelling units anticipated for the project. If this distance cannot be achieved, TJW would analyze the gate operations and anticipated arrival and throughput rates for the entry. TJW would rely on the Crommelin Methodology to determine the stacking length adequacy.

The Crommelin Methodology is a queuing analysis methodology used to determine the storage required for vehicles at entryways to gated communities, based on *Entrance-Exit Design and Control for Major Parking Facilities (Robert W. Crommelin, October 5, 1972)*. While the Crommelin

Methodology was developed many years ago, it is still in use by agencies around the county as it is one of the only methodologies that attempts to quantify queuing at gated communities. The Crommelin Methodology determines the minimum storage length required to provide adequate access and control at gated entry points to ensure minimal impacts on the surrounding street network. The methodology is based on worst case peak hour volumes, the processing rate at the control point and the number of travel lanes. The determination of the reservoir length required to serve peak hour volumes is based on a Poisson distribution.

TJW would summarize the findings and recommendations in the focused traffic study.

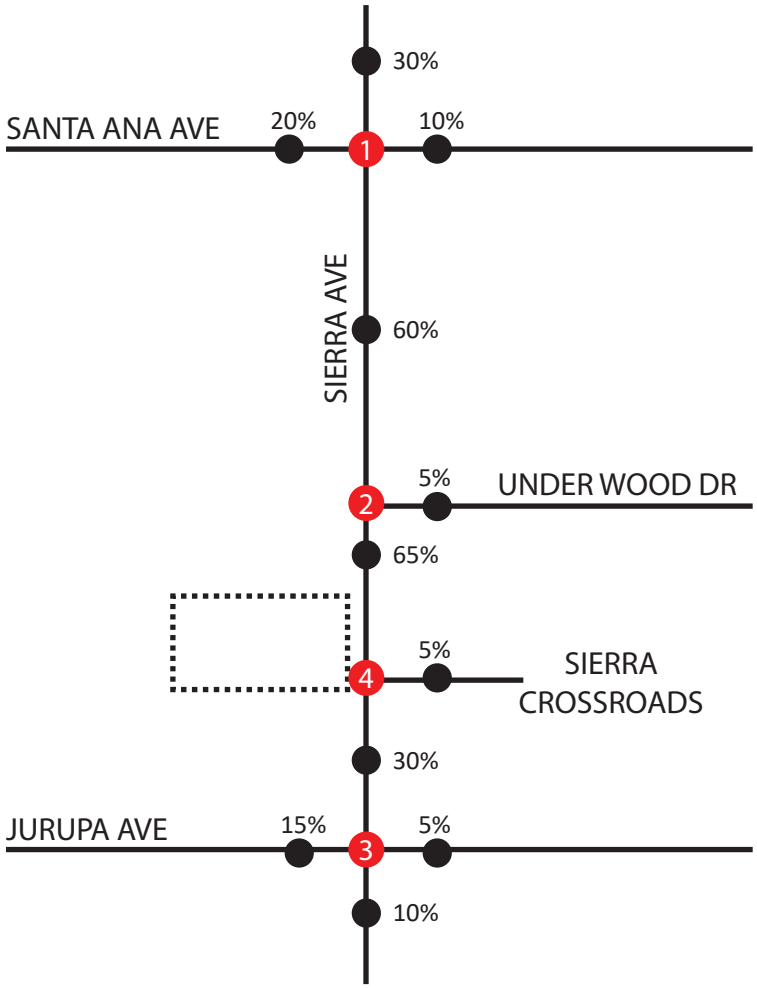
Concept Alignment Plan

TJW would prepare a concept alignment plan showing how the proposed driveway would align with the existing Sierra Crossroads driveway to the east on Sierra Avenue. The plan would be drawn to scale using AutoCAD and would be designed to meet City of Fontana standards.

If you have any questions regarding this scope of work or project, please feel free to contact me at David@tjwengineering.com or at (949) 878-3509.

Sincerely,

David Chew, PTP
Transportation Planning Manager
TJW Engineering, Inc.



Legend:

XX% Trip Distribution

Project Site

Study Intersection

TJW ENGINEERING, INC.

Exhibit 1: Trip Distribution and Study Intersections

RCA-20-001 Fontana Southridge Traffic Impact Analysis

Not to Scale

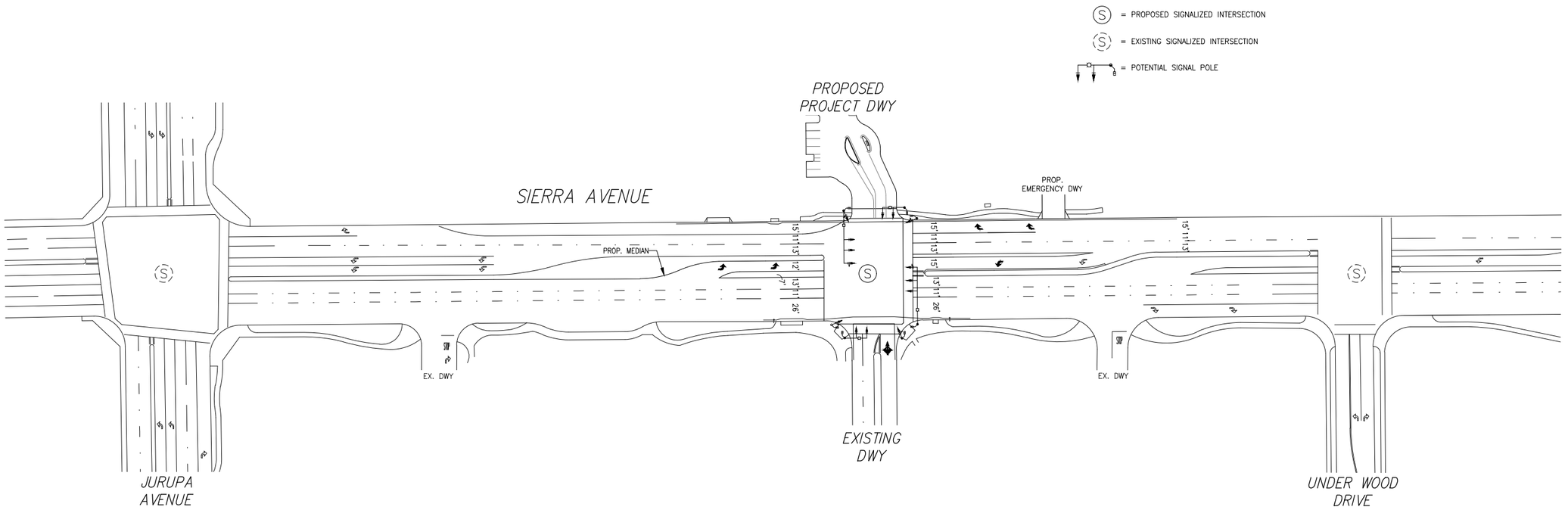


EXHIBIT: CONCEPTUAL STRIPING - SIERRA AVENUE AT PROJECT DRIVEWAY
FONTANA SOUTHRIDGE RESIDENTIAL

Date: 11/25/2020

FSR - Density Study Option 1

TOTAL LOT AREA	4.7 AC	
TOTAL UNITS (PHASE 1 + 2)	**167**	

	PHASE 1	PHASE 2
PHASE LOT AREA	2.8	2.0
NUMBER OF UNITS	90	77
DENSITY (DU/ac)	32	39

UNIT MIX	PHASE 1		PHASE2	
1BR	8	9%	8	10%
2BR	58	64%	50	65%
3BR	24	27%	19	25%
	90	100%	**77**	100%

PARKING	PHASE 1	PHASE2	
1BR	8	8	
2BR	87	75	
3BR	36	29	
REQUIRED	131	112	243
10% REDUCTION	118	100	218
PROVIDED	**124**	**104**	
TOTAL (PHASE 1 + 2)		**228**	

BICYCLE PARKING	PHASE 1	PHASE2	
LONG TERM	18	15	33
SHORT TERM	5	4	8

	PHASE 1	PHASE2
ADA STALLS REQ.	5	5

167 DU - L1 PLAN

1/64" = 1'-0"

167 DU - L2 PLAN

1/64" = 1'-0"

Exhibit B

SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This letter acknowledges the City of Fontana Engineering Department requirements for traffic impact analysis of the following project. The analysis must follow the SANBAG Traffic Study Guidelines Updated 2005.

Case No. _____
Related Cases -
SP No. _____
EIR No. _____
GPA No. _____
CZ No. _____
Project Name: Fontana Southridge
Project Address: West side of Sierra Ave b/w Under Wood Drive and Jurupa Avenue
Project Description: 155 Multi-Family Dwelling Units

	Consultant	Developer
Name:	TJW Engineering	Stan Smith - Related California
Address:	6 Venture, Suite 225	18201 Von Karman Ave, Suite 900
	Irvine, CA 92618	Irvine, CA 92612
Telephone:	949-878-3509	949-660-7272
Fax:		

A. Trip Generation Source: _____

Current GP Land Use _____ Proposed Land Use Residential

Current Zoning _____ Proposed Zoning _____

Current Trip Generation	In	Out	Total	Proposed Trip Generation In	Out	Total
AM Trips				17	55	72
PM Trips				55	32	87

Internal Trip Allowance ☐ Yes ☑ No (_____ % Trip Discount)
Pass-By Trip Allowance ☐ Yes ☑ No (_____ % Trip Discount)

A passby trip discount of 25% is allowed for appropriate land uses. The passby trips at adjacent study area intersections and project driveways shall be indicated on a report figure.

B. Trip Geographic Distribution: (attach exhibit for detailed assignment) N 30 % S 10 % E 25 % W 35 %

C. Background Traffic

Project Build-out Year: 2023 Annual Ambient Growth Rate: 2 %

Phase Year(s) _____
Other area projects to be analyzed: _____

Model/Forecast methodology _____

D. Study intersections: *(NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)*

1. Sierra Ave / Santa Ana Ave
2. Sierra Ave / Under Wood Dr
3. Sierra Ave / Jurupa Ave
4. Sierra Ave / Sierra Crossroads Primary Access Driveway
5.
6.
7.
8.
9.
10.

E. Study Roadway Segments: *(NOTE: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.)*

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

E. Other Jurisdictional Impacts

Is this project within a City's Sphere of Influence or one-mile radius of City boundaries? ☐ Yes ☑ No

If so, name of City Jurisdiction:

F. Site Plan (please attach reduced copy)

G. Specific issues to be addressed in the Study (in addition to the standard analysis described in the Guideline) (To be filled out by Engineering Department)
(NOTE: If the traffic study states that "a traffic signal is warranted" (or "a traffic signal appears to be warranted," or similar statement) at an existing unsignalized intersection under existing conditions, 8-hour approach traffic volume information must be submitted in addition to the peak hourly turning movement counts for that intersection.)

A peak hour signal warrant analysis will be conducted for the proposed project driveway, concept striping, and gated entry stacking review

H. Existing Conditions

Traffic count data must be new or recent. Provide traffic count dates if using other than new counts.
Date of counts Will conduct new traffic counts

Please check if there is recent available pre-pandemic traffic data count from your data collection firms. If available use growth of 2% to 2020.

Recommended by:

Thomas J. Wheat, PE, TE — October 14, 2020
Consultant's Representative — Date

Approved Scoping Agreement:

MKhdr — 10/22/20
City of Fontana Project Engineer — Date

Scoping Agreement Submitted on October 14, 2020

Revised on

Passengers board a midday Metrolink train at Fontana Station.

- Health data for Fontana indicate that both adults and youth have lower rates of physical activity compared with county and state averages.

D. Hierarchy of Streets in Fontana

A roadway functional classification or Hierarchy of Streetes (See Exhibit 9.2 Hierarchy of Streets) has been established for the City of Fontana. When planning for new development, redevelopment and City initiated Capital improvements Projects, roadway design must consider space for all users. Historically streets in Fontana, like most cities, were designed according to capacity and Level of Service for automobiles with little consideration for the complete streets principles. Moving forward Fontana will use a Multimodal Level of Service as a measurement in the rating of the performance of streets. Balancing transit, bicycle, and pedestrians with level of service. Street Hierarchy will dictate the number or travel lanes while improvements for bicycle, pedestrian and public transit connectivity. Where in the past land use would dictate transportation systems, now moving Fontana Forward, transportation systems will serve land use choices.

Additional right-of-way dedication beyond the approved typical travel lane requirements may be required in order to accommodate turn lanes, center medians, intersection improvements and complete street improvements. The roadway hierarchy of streets are briefly described in the following paragraphs.

Major Highways:

Major highways will have up to 6 lanes in most situations. Where Major Highways cross Freeways it may be necessary to increase capacity to 8 lanes. These streets typically have raised medians or two-way left turn lanes. These facilities can carry high volumes of traffic. The majority of the Major Highway network in the City has already been improved. Sidewalks and bike lanes should be added whenever possible and bus bays should be installed as turnouts. New development should incorporate Complete Street components as outline in the Active Transportation.

Primary and Secondary Highways:

These roadways will have up to 4 travel lanes. Primary Highways typically connect Major Highways and often have raised medians or two way left turn lanes. Secondary Highways also have up to 4 lanes of travel and are typically used to carry traffic along the perimeters of large developments. Because traffic volumes are not as high as compared to Major Highways, these wide roads are ideal for Complete Street concepts.

Collector Streets:

These roadways can accomodate 2 or 4 lanes of traffic. They are typically used to take traffic from neighborhoods to Primary and Secondary Roads. Collector Roads are also used in industrial areas to funnel trucks from their point of services to the Truck Route Network. Whether connecting residents to Primary Roads or trucks to Truck Routes, collector streets are ideal candidates for Complete Street concepts. Where possible, physical buffers such as landscaped parkways or solid dividers should be used to seperate vehicular traffic from bicycles and pedestrians.

Local Streets:

These are 2 lane roads in large part serving residential neighborhoods. In addition to Complete Street concepts, traffic calming measures should be incorporated whenever possible. Local streets should consider automobile parking curb adjacent with bike lanes striped along the road side of the parking area.

CHALLENGES

- Reducing traffic congestion.
- Providing more transportation choice for trips within Fontana.
- Creating safe, comfortable and convenient alternatives to driving.
- Reducing the commuting burden for Fontana residents.
- Improving transit service, coverage, reliability, convenience, and comfort.
- Reducing traffic congestion.

E. What the Community Said

Public opinion survey

Respondents who expressed that they were very satisfied or somewhat satisfied with the following public services:

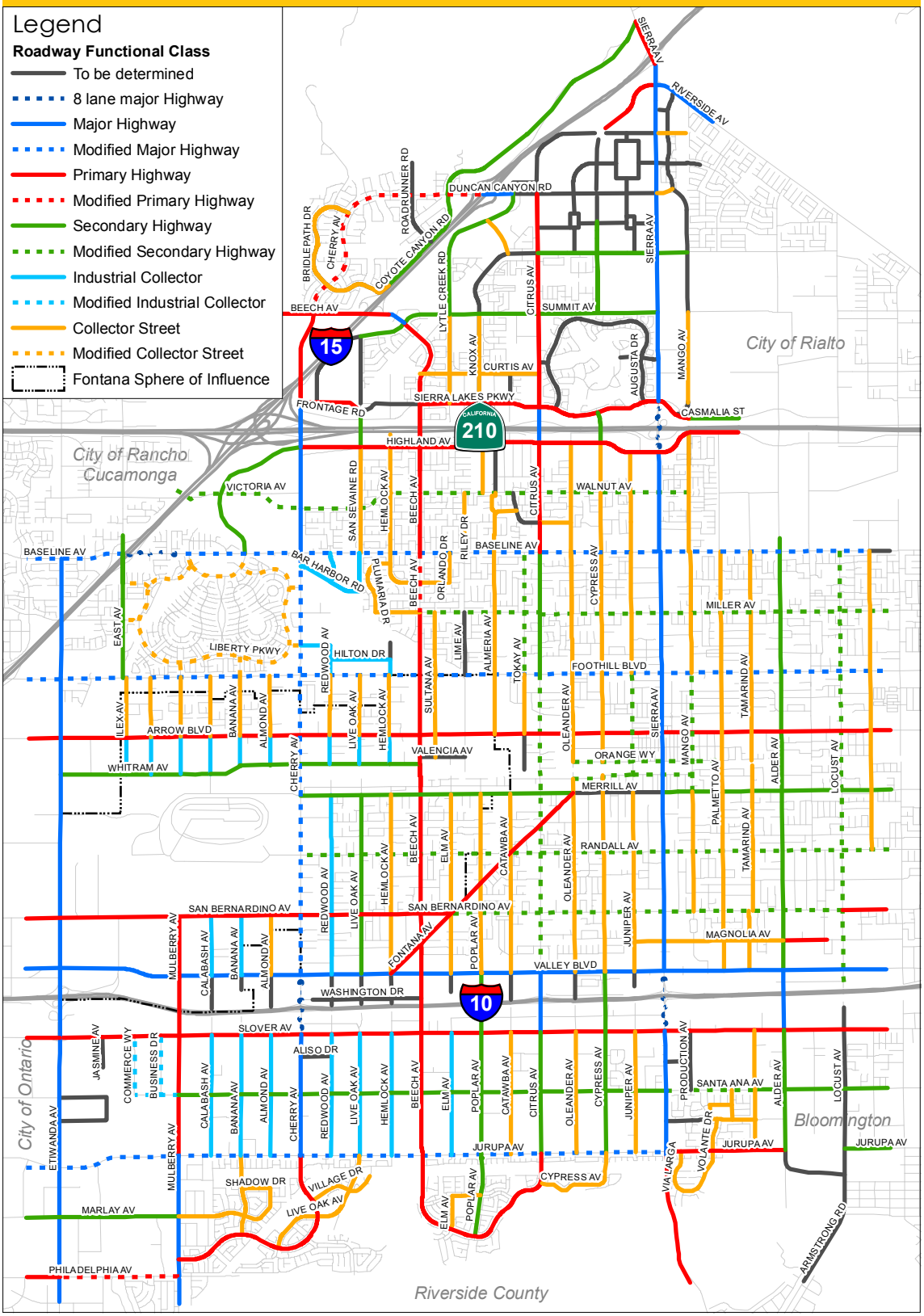
- Maintain local streets and roads—77.7%
- Manage traffic flow in the city—74.3%

Respondents ranked the following potential future priorities as high or medium priorities:

- Improve the maintenance of city streets and infrastructure—90.8%
- Make it easier and safer to walk to local destinations—86.7%
- Improve traffic conditions in the city—83.6%
- Improve local public transit services—79.6%
- Create a network of safe bike routes connecting all parts of the city—74.2%

(Text continues on page 9.16.)

EXHIBIT 9.2 **HIERARCHY OF STREETS IN FONTANA**



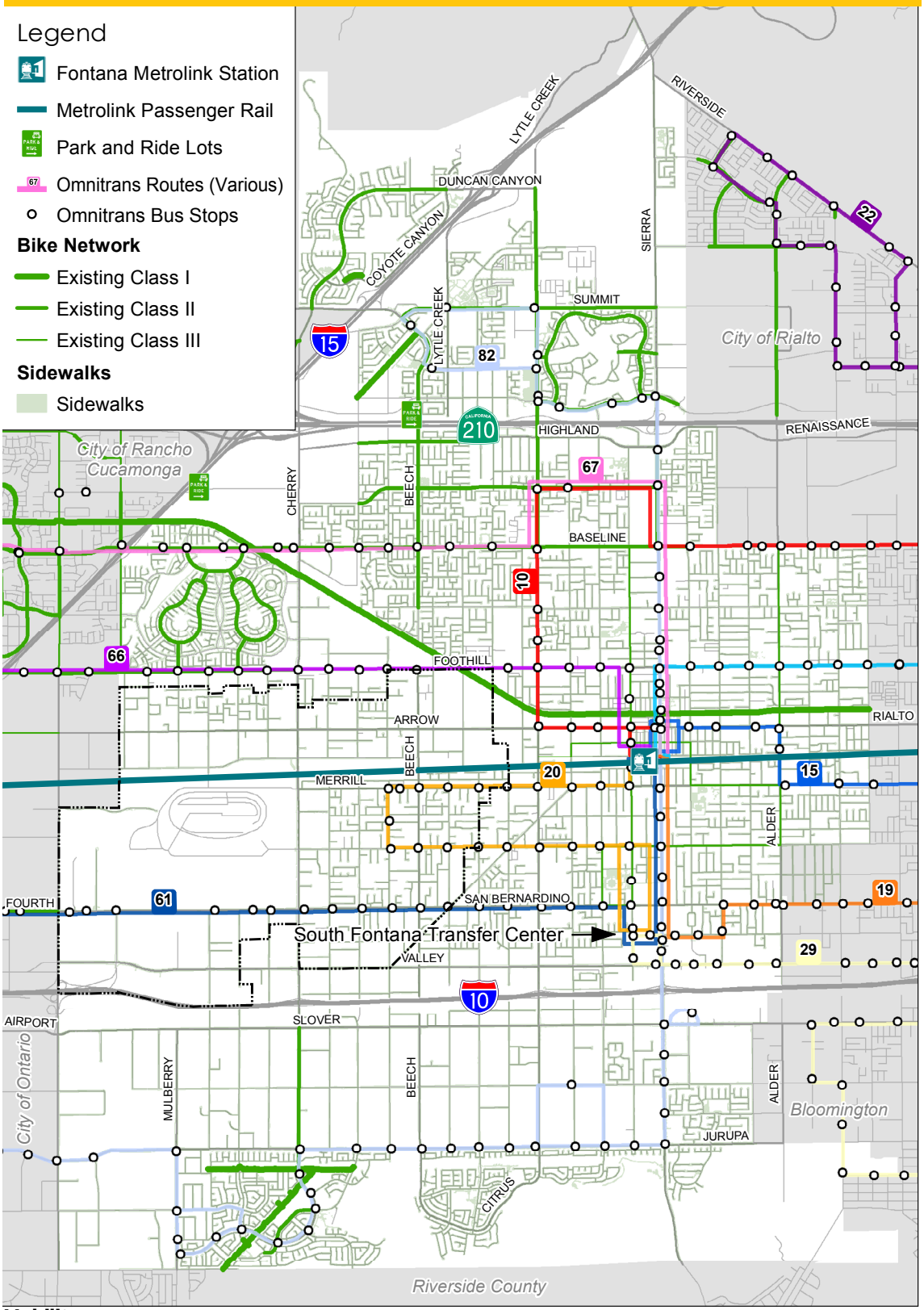
Roadway Functional Classifications
March, 2017
Data source: City of Fontana, 2017

Fontana Forward
FONTANA GENERAL PLAN UPDATE 2015-2035

Approved and Adopted by City Council November 13, 2018

City Council Resolution 2018-096
City Council Resolution 2018-097

EXHIBIT 9.3 **MOBILITY**



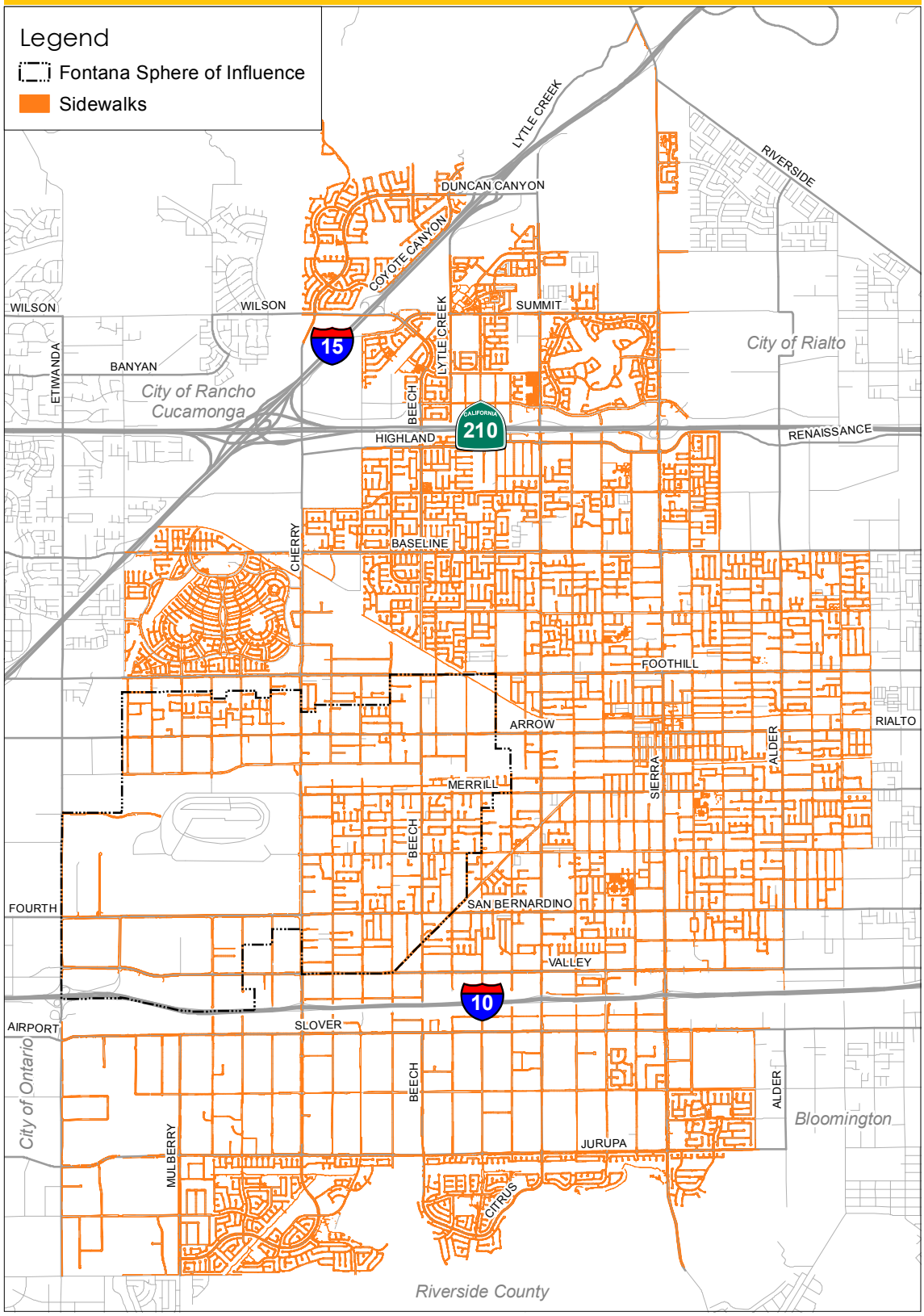
Mobility
October, 2015
Data source: City of Fontana, Metrolink, Omintrans, SANBAG

Fontana Forward
FONTANA GENERAL PLAN UPDATE 2015-2035

0 2,500 5,000 10,000
Scale 1:75,000 Feet

Approved and Adopted by City Council November 13, 2018
City Council Resolution 2018-096
City Council Resolution 2018-097

EXHIBIT 9.4 **SIDEWALK CONNECTIVITY IN FONTANA**



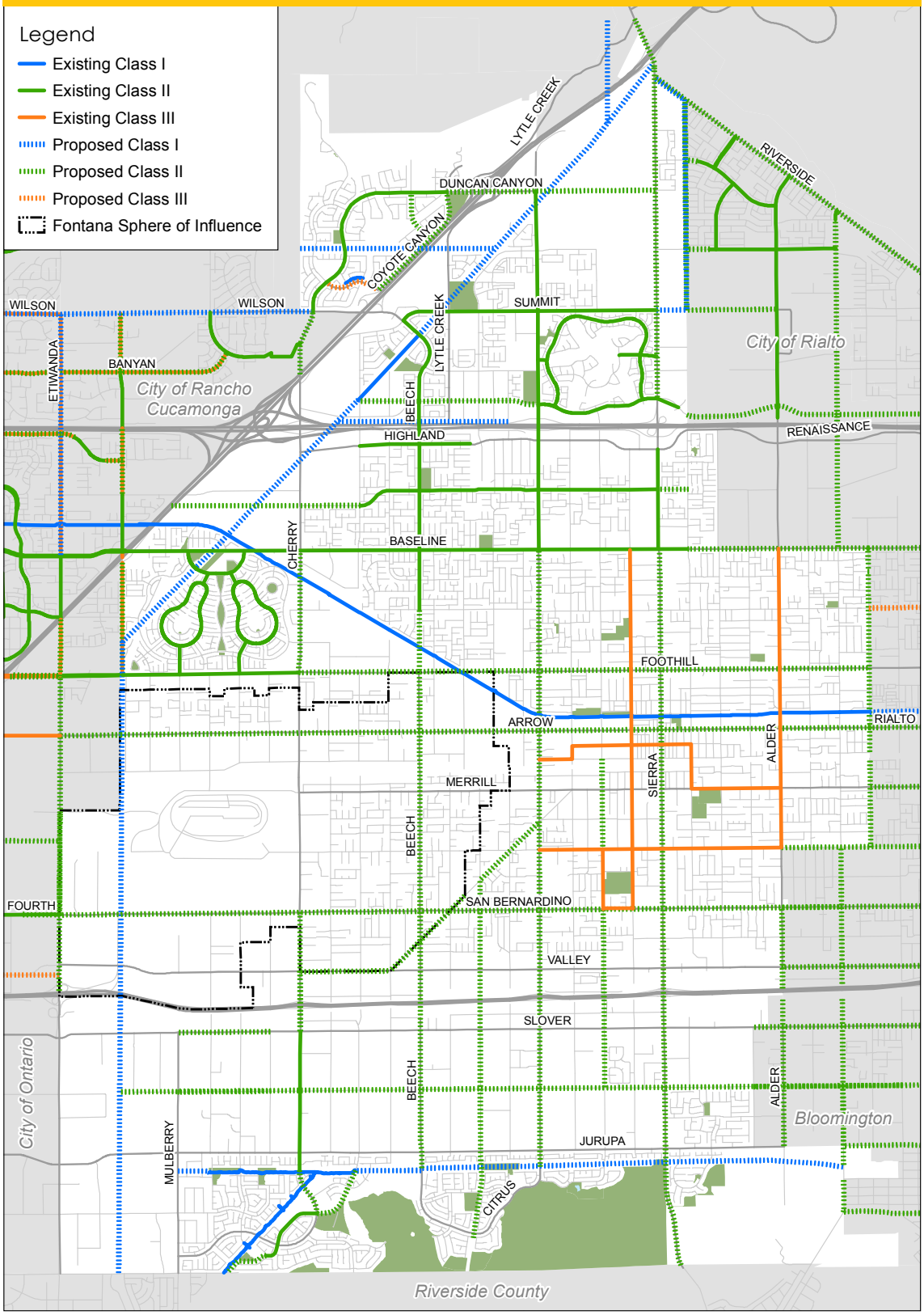
Sidewalk Connectivity
March, 2017
Data source: City of Fontana, 2015

Fontana Forward
FONTANA GENERAL PLAN UPDATE 2015-2035

0 2,500 5,000 10,000
Scale 1:75,000 Feet

City Council Resolution 2018-096
City Council Resolution 2018-097

EXHIBIT 9.6 **BICYCLE FACILITIES IN FONTANA**



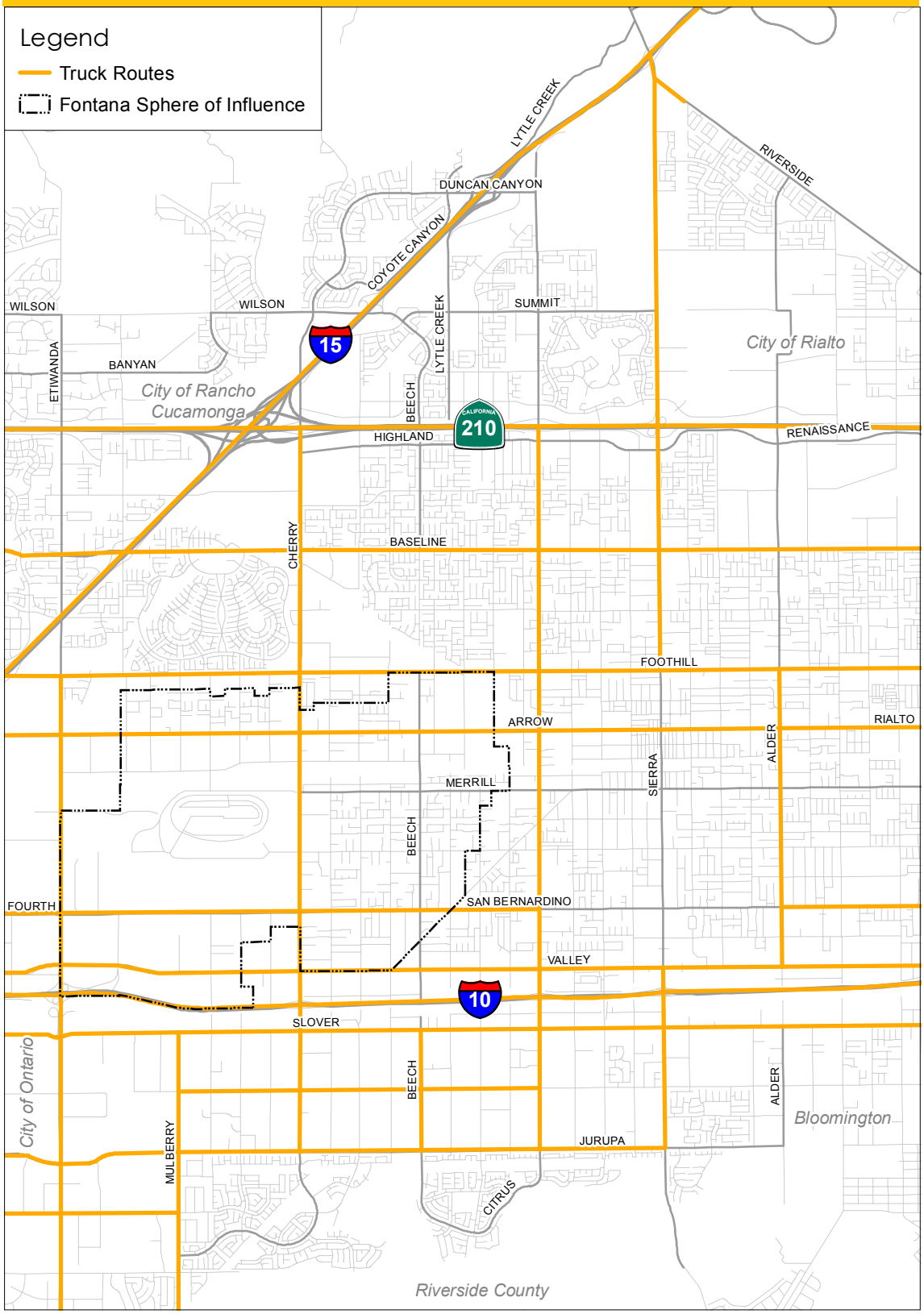
Bicycle Facilities
March, 2017
Data sources: City of Fontana, 2015; SANBAG NMTP, 2014

Fontana Forward
FONTANA GENERAL PLAN UPDATE 2015-2035

0 2,500 5,000 10,000
Scale 1:75,000 Feet

City Council Resolution 2018-096
City Council Resolution 2018-097

EXHIBIT 9.7 **TRUCK ROUTES**



Truck Network
March, 2017
Data source: City of Fontana, 2014

Fontana Forward
FONTANA GENERAL PLAN UPDATE 2015-2035

0 2,500 5,000 10,000
Scale 1:75,000 Feet

Approved and Adopted by City Council November 13, 2018

City Council Resolution 2018-096
City Council Resolution 2018-097

APPENDIX B

EXISTING TRAFFIC COUNTS

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE: Wed, Oct 21, 20

LOCATION: Fontana
NORTH & SOUTH: Sierra
EAST & WEST: Santa Ana

PROJECT #: SC
LOCATION #: 1
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND (Sierra)			SOUTHBOUND (Sierra)			EASTBOUND (Santa Ana)			WESTBOUND (Santa Ana)				U-TURNS				
	LANES:	NL 2	NT 3	NR 1	SL 2	ST 3	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	17	138	3	8	94	20	11	9	4	3	12	11	330	6	2	0	0	8
AM	7:15 AM	18	166	3	14	106	14	17	3	1	3	11	14	370	4	6	0	0	10
AM	7:30 AM	26	248	5	9	121	10	22	4	5	6	11	15	482	6	1	0	0	7
AM	7:45 AM	17	245	11	8	129	10	15	14	12	9	9	19	498	3	1	0	0	4
AM	8:00 AM	27	183	4	7	111	12	15	14	6	11	15	10	415	8	2	0	0	10
AM	8:15 AM	28	212	6	10	111	17	19	7	8	6	14	16	454	7	1	0	0	8
AM	8:30 AM	24	209	6	5	117	17	17	20	7	8	15	13	458	10	1	0	0	11
AM	8:45 AM	30	167	17	11	115	20	23	15	14	10	11	8	441	15	3	0	0	18
AM	VOLUMES	187	1,568	55	72	904	120	139	86	57	56	98	106	3,448	59	17	0	0	76
AM	APPROACH %	10%	87%	3%	7%	82%	11%	49%	30%	20%	22%	38%	41%						
AM	APP/DEPART	1,810	/	1,830	1,096	/	1,076	282	/	196	260	/	346	0					
AM	BEGIN PEAK HR		7:30 AM																
AM	VOLUMES	98	888	26	34	472	49	71	39	31	32	49	60	1,849					
AM	APPROACH %	10%	88%	3%	6%	85%	9%	50%	28%	22%	23%	35%	43%						
AM	PEAK HR FACTOR		0.907			0.944			0.860			0.953		0.928					
AM	APP/DEPART	1,012	/	1,024	555	/	559	141	/	94	141	/	172	0					
PM	4:00 PM	41	280	2	26	227	24	43	28	23	11	29	17	751	14	0	1	0	15
PM	4:15 PM	31	289	10	15	248	20	40	28	25	9	26	14	755	9	1	0	0	10
PM	4:30 PM	30	274	5	20	246	19	36	26	26	33	28	24	767	7	0	0	0	7
PM	4:45 PM	37	290	11	25	208	19	29	35	29	18	20	19	740	9	1	0	1	11
PM	5:00 PM	39	291	5	21	227	21	34	25	30	19	20	20	752	13	0	0	0	13
PM	5:15 PM	36	284	14	26	277	25	38	27	23	16	25	15	806	13	1	0	0	14
PM	5:30 PM	38	274	9	27	263	15	32	26	18	24	25	23	774	15	1	0	0	16
PM	5:45 PM	35	240	10	32	248	30	41	23	23	10	23	20	735	15	2	0	0	17
PM	VOLUMES	287	2,222	66	192	1,944	173	293	218	197	140	196	152	6,080	95	6	1	1	103
PM	APPROACH %	11%	86%	3%	8%	84%	7%	41%	31%	28%	29%	40%	31%						
PM	APP/DEPART	2,575	/	2,672	2,309	/	2,375	708	/	471	488	/	562	0					
PM	BEGIN PEAK HR		4:45 PM																
PM	VOLUMES	150	1,139	39	99	975	80	133	113	100	77	90	77	3,072					
PM	APPROACH %	11%	86%	3%	9%	84%	7%	38%	33%	29%	32%	37%	32%						
PM	PEAK HR FACTOR		0.982			0.880			0.930			0.847		0.953					
PM	APP/DEPART	1,328	/	1,352	1,154	/	1,201	346	/	249	244	/	270	0					

Sierra

NORTH SIDE

Santa Ana WEST SIDE EAST SIDE **Santa Ana**

SOUTH SIDE

Sierra

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AM	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	5:45 PM	0	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	0

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE: Wed, Oct 21, 20

LOCATION: Fontana
NORTH & SOUTH: Sierra
EAST & WEST: Under Wood

PROJECT #: SC
LOCATION #: 2
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER — ▲ N, ◄ W, E ►, S ▼

☐ Add U-Turns to Left Turns

		NORTHBOUND Sierra			SOUTHBOUND Sierra			EASTBOUND Under Wood			WESTBOUND Under Wood				U-TURNS				
	LANES:	NL X	NT 3	NR 1	SL 1	ST 2	SR X	EL X	ET X	ER X	WL 1	WT X	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	141	2	4	104	0	0	0	0	8	0	17	276	0	0	0	0	0
	7:15 AM	0	159	4	9	97	0	0	0	0	7	0	28	304	0	0	0	0	0
	7:30 AM	0	244	2	14	121	0	0	0	0	11	0	35	427	0	0	0	0	0
	7:45 AM	0	244	2	15	132	0	0	0	0	6	0	29	428	0	0	0	0	0
	8:00 AM	0	192	2	17	114	0	0	0	0	7	0	20	352	0	2	0	0	2
	8:15 AM	0	210	2	27	101	0	0	0	0	9	0	35	384	0	1	0	0	1
	8:30 AM	0	207	4	19	111	0	0	0	0	11	0	30	382	0	2	0	0	2
	8:45 AM	0	204	8	22	122	0	0	0	0	5	0	17	378	0	3	0	0	3
	VOLUMES	0	1,601	26	127	902	0	0	0	0	64	0	211	2,939	0	8	0	0	8
	APPROACH %	0%	98%	2%	12%	87%	0%	0%	0%	0%	23%	0%	77%						
	APP/DEPART	1,627	/	1,820	1,037	/	966	0	/	153	275	/	0	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	890	8	73	468	0	0	0	0	33	0	119	1,594					
	APPROACH %	0%	99%	1%	13%	86%	0%	0%	0%	0%	22%	0%	78%						
	PEAK HR FACTOR		0.913			0.925			0.000			0.826		0.931					
	APP/DEPART	898	/	1,012	544	/	501	0	/	81	152	/	0	0					
PM	4:00 PM	0	284	9	39	226	0	0	0	0	6	0	38	602	0	1	0	0	1
	4:15 PM	0	297	6	50	228	0	0	0	0	10	0	31	622	0	2	0	0	2
	4:30 PM	0	276	5	51	246	0	0	0	0	9	0	31	618	0	2	0	0	2
	4:45 PM	0	308	16	42	209	0	0	0	0	15	0	29	619	1	1	0	0	2
	5:00 PM	0	295	12	43	232	0	0	0	0	8	0	38	628	0	2	0	0	2
	5:15 PM	0	288	14	58	254	0	0	0	0	10	0	44	668	0	2	0	0	2
	5:30 PM	0	271	15	56	257	0	0	0	0	17	0	48	664	0	2	0	0	2
	5:45 PM	0	259	11	52	234	0	0	0	0	17	0	30	603	0	1	0	0	1
	VOLUMES	0	2,278	88	391	1,886	0	0	0	0	92	0	289	5,038	1	13	0	0	14
	APPROACH %	0%	96%	4%	17%	82%	0%	0%	0%	0%	24%	0%	76%						
	APP/DEPART	2,367	/	2,580	2,290	/	1,979	0	/	479	381	/	0	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	1,162	57	199	952	0	0	0	0	50	0	159	2,587					
	APPROACH %	0%	95%	5%	17%	82%	0%	0%	0%	0%	24%	0%	76%						
	PEAK HR FACTOR		0.938			0.919			0.000			0.804		0.965					
	APP/DEPART	1,220	/	1,328	1,158	/	1,003	0	/	256	209	/	0	0					

Sierra

NORTH SIDE

Under Wood WEST SIDE EAST SIDE **Under Wood**

SOUTH SIDE

Sierra

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	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	0	0	0	0
	8:30 AM	0	0	0	0	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	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE: Wed, Oct 21, 20

LOCATION: Fontana
NORTH & SOUTH: Sierra
EAST & WEST: Jurupa

PROJECT #: SC
LOCATION #: 3
CONTROL: SIGNAL

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N
◄ W E ►
S ▼

☑ Add U-Turns to Left Turns

		NORTHBOUND (Sierra)			SOUTHBOUND (Sierra)			EASTBOUND (Jurupa)			WESTBOUND (Jurupa)				U-TURNS				
	LANES:	NL 2	NT 2	NR 1	SL 2	ST 2	SR 1	EL 2	ET 2	ER 1	WL 2	WT 2	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	51	108	5	5	73	27	29	8	44	29	31	10	420	0	1	0	0	1
	7:15 AM	66	124	7	9	52	17	39	6	36	19	31	16	422	0	4	0	0	4
	7:30 AM	60	177	8	4	82	27	43	9	59	23	29	21	542	1	0	0	0	1
	7:45 AM	67	186	7	8	81	28	56	15	45	27	32	13	565	0	1	0	0	1
	8:00 AM	43	139	7	9	54	18	44	13	36	21	30	16	430	0	1	0	0	1
	8:15 AM	30	158	12	4	58	15	41	17	31	21	25	9	421	0	1	0	0	1
	8:30 AM	35	169	3	9	69	21	49	10	48	28	39	10	490	0	1	0	0	1
	8:45 AM	33	137	14	3	66	21	50	15	34	14	23	15	425	0	1	0	0	1
	VOLUMES	385	1,198	63	51	535	174	351	93	333	182	240	110	3,715	1	10	0	0	11
	APPROACH %	23%	73%	4%	7%	70%	23%	45%	12%	43%	34%	45%	21%						
	APP/DEPART	1,646	/	1,669	760	/	1,051	777	/	197	532	/	798	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	236	626	29	30	269	90	182	43	176	90	122	66	1,959					
	APPROACH %	26%	70%	3%	8%	69%	23%	45%	11%	44%	32%	44%	24%						
	PEAK HR FACTOR		0.857			0.831			0.864			0.952		0.867					
	APP/DEPART	891	/	880	389	/	536	401	/	96	278	/	447	0					
PM	4:00 PM	50	191	23	13	110	48	81	43	56	27	32	16	690	0	2	0	0	2
	4:15 PM	53	210	24	14	119	42	84	37	49	34	56	12	734	0	1	0	0	1
	4:30 PM	42	185	19	15	124	43	91	41	77	31	62	19	749	0	1	0	0	1
	4:45 PM	65	209	23	17	122	46	108	61	64	40	56	16	827	0	1	0	0	1
	5:00 PM	50	179	25	23	118	49	77	59	76	39	59	22	776	0	3	0	0	3
	5:15 PM	57	212	26	30	121	49	76	54	72	35	59	13	804	0	4	0	0	4
	5:30 PM	66	188	30	34	124	62	95	49	72	41	62	18	841	0	2	0	0	2
	5:45 PM	88	180	28	18	132	63	86	41	53	32	51	19	791	0	3	0	0	3
	VOLUMES	471	1,554	198	164	970	402	698	385	519	279	437	135	6,212	0	17	0	0	17
	APPROACH %	21%	70%	9%	11%	63%	26%	44%	24%	32%	33%	51%	16%						
	APP/DEPART	2,223	/	2,404	1,536	/	1,768	1,602	/	730	851	/	1,310	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	238	788	104	104	485	206	356	223	284	155	236	69	3,248					
	APPROACH %	21%	70%	9%	13%	61%	26%	41%	26%	33%	34%	51%	15%						
	PEAK HR FACTOR		0.951			0.903			0.926			0.950		0.966					
	APP/DEPART	1,130	/	1,223	795	/	924	863	/	421	460	/	680	0					

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	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	0	0	0	0
	8:30 AM	0	0	0	0	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	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE: Wed, Oct 21, 20

LOCATION: Fontana
NORTH & SOUTH: Sierra
EAST & WEST: Sierra Crossroads Access Dwy

PROJECT #: SC
LOCATION #: 4
CONTROL: STOP W

NOTES:

AM / PM / MD / OTHER / OTHER

▲ N
◄ W E ►
S ▼

☐ Add U-Turns to Left Turns

		NORTHBOUND Sierra			SOUTHBOUND Sierra			EASTBOUND Sierra Crossroads Access Dwy			WESTBOUND Sierra Crossroads Access Dwy				U-TURNS				
	LANES:	NL X	NT 3	NR 0	SL 1	ST 2	SR X	EL X	ET X	ER X	WL X	WT X	WR 1	TOTAL	NB 0	SB 0	EB 0	WB 0	TTL
AM	7:00 AM	0	140	5	14	98	0	0	0	0	0	0	9	266	0	0	0	0	0
	7:15 AM	0	155	5	18	86	0	0	0	0	0	0	12	276	0	0	0	0	0
	7:30 AM	0	220	6	16	116	0	0	0	0	0	0	22	380	0	0	0	0	0
	7:45 AM	0	237	6	28	110	0	0	0	0	0	0	18	399	0	0	0	0	0
	8:00 AM	0	174	9	36	85	0	0	0	0	0	0	11	315	0	0	0	0	0
	8:15 AM	0	193	5	34	76	0	0	0	0	0	0	22	330	0	0	0	0	0
	8:30 AM	0	209	16	23	97	0	0	0	0	0	0	12	357	0	1	0	0	1
	8:45 AM	0	166	13	35	90	0	0	0	0	0	0	22	326	0	1	0	0	1
	VOLUMES	0	1,494	65	204	758	0	0	0	0	0	0	128	2,651	0	2	0	0	2
	APPROACH %	0%	96%	4%	21%	79%	0%	0%	0%	0%	0%	0%	100%						
	APP/DEPART	1,559	/	1,624	964	/	758	0	/	269	128	/	0	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	824	26	114	387	0	0	0	0	0	0	73	1,424					
	APPROACH %	0%	97%	3%	23%	77%	0%	0%	0%	0%	0%	0%	100%						
	PEAK HR FACTOR		0.874			0.908			0.000			0.830		0.892					
	APP/DEPART	850	/	897	501	/	387	0	/	140	73	/	0	0					
PM	4:00 PM	0	261	16	57	174	0	0	0	0	0	0	23	531	0	1	0	0	1
	4:15 PM	0	260	21	59	176	0	0	0	0	0	0	32	548	0	3	0	1	4
	4:30 PM	0	256	23	57	193	0	0	0	0	0	0	29	558	0	5	0	0	5
	4:45 PM	0	295	35	42	180	0	0	0	0	0	0	38	590	0	2	0	0	2
	5:00 PM	0	256	12	44	194	0	0	0	0	0	0	29	535	0	2	0	0	2
	5:15 PM	0	267	16	69	193	0	0	0	0	0	0	20	565	0	2	0	0	2
	5:30 PM	0	270	23	41	228	0	0	0	0	0	0	26	588	0	3	0	0	3
	5:45 PM	0	238	16	47	203	0	0	0	0	0	0	17	521	0	0	0	0	0
	VOLUMES	0	2,103	162	416	1,541	0	0	0	0	0	0	214	4,455	0	18	0	1	19
	APPROACH %	0%	93%	7%	21%	78%	0%	0%	0%	0%	0%	0%	100%						
	APP/DEPART	2,265	/	2,335	1,975	/	1,541	0	/	579	215	/	0	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	0	1,088	86	196	795	0	0	0	0	0	0	113	2,287					
	APPROACH %	0%	93%	7%	20%	80%	0%	0%	0%	0%	0%	0%	100%						
	PEAK HR FACTOR		0.889			0.919			0.000			0.743		0.966					
	APP/DEPART	1,174	/	1,210	1,000	/	795	0	/	282	113	/	0	0					

Sierra

NORTH SIDE

Sierra Crossroads Access Dwy WEST SIDE EAST SIDE **Sierra Crossroads Access Dwy**

SOUTH SIDE

Sierra

		ALL PED AND BIKE					PEDESTRIAN CROSSINGS					BICYCLE CROSSINGS					
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:00 AM	0	0	0	0	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	0	0	0	0
	8:30 AM	0	0	0	0	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	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:		PROJECT #:	
10/21/20	NORTH & SOUTH:	Fontana	LOCATION #:	SC
WEDNESDAY	EAST & WEST:	Sierra Santa Ana	CONTROL:	1 SIGNAL

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6			AM PM MD OTHER OTHER	▲ N ◄ W E ► S ▼	
	Factor	1	1.5	2	3	2	2					

		NORTHBOUND (Sierra)			SOUTHBOUND (Sierra)			EASTBOUND (Santa Ana)			WESTBOUND (Santa Ana)				U-TURNS				
	LANES:	NL 2	NT 3	NR 1	SL 2	ST 3	SR 0	EL 1	ET 2	ER 1	WL 1	WT 2	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	40	219	20	7	138	20	17	20	14	14	31	25	563					0
	7:15 AM	34	231	9	19	170	31	22	28	23	9	37	40	652					0
	7:30 AM	29	273	10	11	165	34	32	22	30	11	24	29	666					0
	7:45 AM	23	262	13	25	190	28	22	20	14	8	21	26	649					0
	8:00 AM	34	275	8	23	153	22	23	13	16	17	11	26	619					0
	8:15 AM	38	274	14	24	151	22	36	13	16	12	21	25	644					0
	8:30 AM	26	242	17	18	174	14	26	9	15	13	14	20	586					0
	8:45 AM	18	197	8	12	147	16	25	14	9	7	23	12	486					0
	VOLUMES	240	1,971	97	137	1,285	185	202	138	137	89	181	201	4,862	0	0	0	0	0
	APPROACH %	10%	85%	4%	9%	80%	12%	42%	29%	29%	19%	38%	43%						
	APP/DEPART	2,308	/	2,374	1,607	/	1,510	477	/	372	471	/	606	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	119	1,040	39	77	677	115	98	83	83	44	92	120	2,585					
	APPROACH %	10%	87%	3%	9%	78%	13%	37%	31%	31%	17%	36%	47%						
	PEAK HR FACTOR		0.945			0.895			0.789			0.747		0.971					
	APP/DEPART	1,197	/	1,258	869	/	804	264	/	198	256	/	325	0					
PM	4:00 PM	46	368	9	28	278	23	28	30	29	13	34	16	899					0
	4:15 PM	28	297	8	29	257	25	39	20	25	21	27	10	784					0
	4:30 PM	50	367	15	31	264	17	29	23	28	19	27	25	893					0
	4:45 PM	53	328	14	29	263	21	31	27	21	19	30	20	852					0
	5:00 PM	38	320	11	26	261	21	36	27	22	15	41	20	836					0
	5:15 PM	48	353	11	23	296	20	25	26	18	16	31	19	884					0
	5:30 PM	35	327	9	30	303	28	21	30	23	20	34	16	873					0
	5:45 PM	36	311	12	29	240	30	32	23	25	12	34	26	807					0
	VOLUMES	332	2,670	87	224	2,160	183	240	204	189	133	256	149	6,826	0	0	0	0	0
	APPROACH %	11%	86%	3%	9%	84%	7%	38%	32%	30%	25%	48%	28%						
	APP/DEPART	3,089	/	3,058	2,567	/	2,482	633	/	515	538	/	771	0					
	BEGIN PEAK HR		4:30 PM																
	VOLUMES	188	1,368	51	108	1,083	78	120	102	88	68	129	83	3,464					
	APPROACH %	12%	85%	3%	9%	85%	6%	39%	33%	28%	24%	46%	30%						
	PEAK HR FACTOR		0.930			0.938			0.917			0.925		0.970					
	APP/DEPART	1,606	/	1,571	1,269	/	1,239	310	/	261	280	/	395	0					

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Fontana	PROJECT #:	SC
10/21/20	NORTH & SOUTH:	Sierra	LOCATION #:	2
WEDNESDAY	EAST & WEST:	Under Wood	CONTROL:	SIGNAL

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6			AM		▲ N
	Factor	1	1.5	2	3	2	2			PM		
										MD	◄ W	E ►
										OTHER		S ▼
										OTHER		

		NORTHBOUND Sierra			SOUTHBOUND Sierra			EASTBOUND Under Wood			WESTBOUND Under Wood				U-TURNS				
	LANES:	NL X	NT 3	NR 1	SL 1	ST 2	SR X	EL X	ET X	ER X	WL 1	WT X	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	0	229	5	13	138	0	0	0	0	12	0	50	447					0
	7:15 AM	0	234	7	32	183	0	0	0	0	12	0	46	513					0
	7:30 AM	0	261	6	30	166	0	0	0	0	9	0	41	513					0
	7:45 AM	0	257	4	23	179	0	0	0	0	7	0	41	511					0
	8:00 AM	0	258	7	36	150	0	0	0	0	14	0	61	526					0
	8:15 AM	0	259	10	26	149	0	0	0	0	23	0	64	530					0
	8:30 AM	0	249	7	24	174	0	0	0	0	14	0	39	506					0
	8:45 AM	1	207	9	22	140	0	0	0	0	12	0	16	406					0
	VOLUMES	1	1,953	55	205	1,278	0	0	0	0	103	0	357	3,949	0	0	0	0	0
	APPROACH %	0%	97%	3%	14%	86%	0%	0%	0%	0%	22%	0%	78%						
	APP/DEPART	2,008	/	2,309	1,482	/	1,380	0	/	259	459	/	1	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	0	1,035	27	115	644	0	0	0	0	53	0	207	2,079					
	APPROACH %	0%	97%	3%	15%	85%	0%	0%	0%	0%	20%	0%	80%						
	PEAK HR FACTOR		0.987			0.938			0.000			0.749		0.981					
	APP/DEPART	1,062	/	1,241	758	/	696	0	/	142	259	/	0	0					
PM	4:00 PM	0	354	17	64	242	0	0	0	0	11	0	52	740					0
	4:15 PM	1	304	9	66	238	0	0	0	0	9	0	36	662					0
	4:30 PM	0	364	10	57	224	0	0	0	0	13	0	25	692					0
	4:45 PM	0	365	10	63	247	0	0	0	0	7	0	36	728					0
	5:00 PM	1	369	12	39	270	0	0	0	0	14	0	28	732					0
	5:15 PM	0	368	10	54	238	0	0	0	0	12	0	43	723					0
	5:30 PM	0	323	10	79	253	0	0	0	0	13	0	38	716					0
	5:45 PM	1	346	13	65	244	0	0	0	0	11	0	26	705					0
	VOLUMES	3	2,792	91	485	1,954	0	0	0	0	89	0	283	5,695	0	0	0	0	0
	APPROACH %	0%	97%	3%	20%	80%	0%	0%	0%	0%	24%	0%	76%						
	APP/DEPART	2,885	/	3,075	2,438	/	2,043	0	/	575	372	/	3	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	1	1,424	42	235	1,007	0	0	0	0	46	0	145	2,898					
	APPROACH %	0%	97%	3%	19%	81%	0%	0%	0%	0%	24%	0%	76%						
	PEAK HR FACTOR		0.961			0.935			0.000			0.872		0.990					
	APP/DEPART	1,466	/	1,568	1,242	/	1,053	0	/	276	190	/	1	0					

INTERSECTION TURNING MOVEMENT COUNTS

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

DATE:	LOCATION:	Fontana	PROJECT #:	SC
10/21/20	NORTH & SOUTH:	Sierra	LOCATION #:	3
WEDNESDAY	EAST & WEST:	Jurupa	CONTROL:	SIGNAL

	NOTES:											
PCE Adjusted	Class	1	2	3	4	5	6			AM		▲ N
	Factor	1	1.5	2	3	2	2			PM		
										MD	◄ W	E ►
										OTHER		S ▼
										OTHER		

		NORTHBOUND (Sierra)			SOUTHBOUND (Sierra)			EASTBOUND (Jurupa)			WESTBOUND (Jurupa)				U-TURNS				
	LANES:	NL 2	NT 2	NR 1	SL 2	ST 2	SR 1	EL 2	ET 2	ER 1	WL 2	WT 2	WR 1	TOTAL	NB	SB	EB	WB	TTL
AM	7:00 AM	65	156	12	5	87	31	54	68	51	30	59	23	640					0
	7:15 AM	50	149	11	13	113	36	66	57	71	42	86	24	715					0
	7:30 AM	55	175	15	8	97	39	73	58	50	28	68	30	693					0
	7:45 AM	73	182	19	7	117	41	56	69	48	27	72	20	729					0
	8:00 AM	58	204	8	7	102	28	56	52	42	29	67	10	661					0
	8:15 AM	53	169	7	11	87	41	55	25	36	33	48	17	581					0
	8:30 AM	42	185	2	11	98	49	73	18	38	26	38	16	595					0
	8:45 AM	50	137	13	11	67	27	73	30	42	14	46	23	531					0
	VOLUMES	445	1,356	87	73	767	290	504	376	377	227	483	163	5,143	0	0	0	0	0
	APPROACH %	24%	72%	5%	6%	68%	26%	40%	30%	30%	26%	55%	19%						
	APP/DEPART	1,887	/	2,022	1,129	/	1,370	1,256	/	535	872	/	1,218	0					
	BEGIN PEAK HR		7:15 AM																
	VOLUMES	236	710	53	35	428	144	250	236	210	125	292	84	2,798					
	APPROACH %	24%	71%	5%	6%	71%	24%	36%	34%	30%	25%	58%	17%						
	PEAK HR FACTOR		0.912			0.923			0.902			0.828		0.959					
	APP/DEPART	998	/	1,043	606	/	762	695	/	323	500	/	671	0					
PM	4:00 PM	78	184	25	19	130	43	119	56	80	44	72	18	864					0
	4:15 PM	73	214	30	10	120	56	103	71	68	37	63	14	859					0
	4:30 PM	62	220	27	17	117	52	99	73	94	35	64	20	878					0
	4:45 PM	69	230	18	23	133	43	100	67	67	34	61	17	860					0
	5:00 PM	71	254	23	23	154	50	114	79	73	27	72	14	953					0
	5:15 PM	82	243	34	19	137	30	112	70	68	43	85	16	937					0
	5:30 PM	73	215	23	17	145	54	120	73	42	28	73	16	877					0
	5:45 PM	71	212	40	20	117	49	102	61	54	29	87	25	865					0
	VOLUMES	577	1,769	220	148	1,051	376	867	548	545	277	576	139	7,090	0	0	0	0	0
	APPROACH %	22%	69%	9%	9%	67%	24%	44%	28%	28%	28%	58%	14%						
	APP/DEPART	2,566	/	2,774	1,575	/	1,873	1,959	/	915	991	/	1,529	0					
	BEGIN PEAK HR		5:00 PM																
	VOLUMES	296	923	120	79	553	183	447	282	236	127	317	71	3,631					
	APPROACH %	22%	69%	9%	10%	68%	22%	46%	29%	24%	25%	62%	14%						
	PEAK HR FACTOR		0.934			0.896			0.910			0.899		0.953					
	APP/DEPART	1,338	/	1,440	814	/	916	965	/	480	514	/	795	0					

APPENDIX C

CUMULATIVE PROJECTS

EXHIBIT 4-4: CUMULATIVE DEVELOPMENT LOCATION MAP

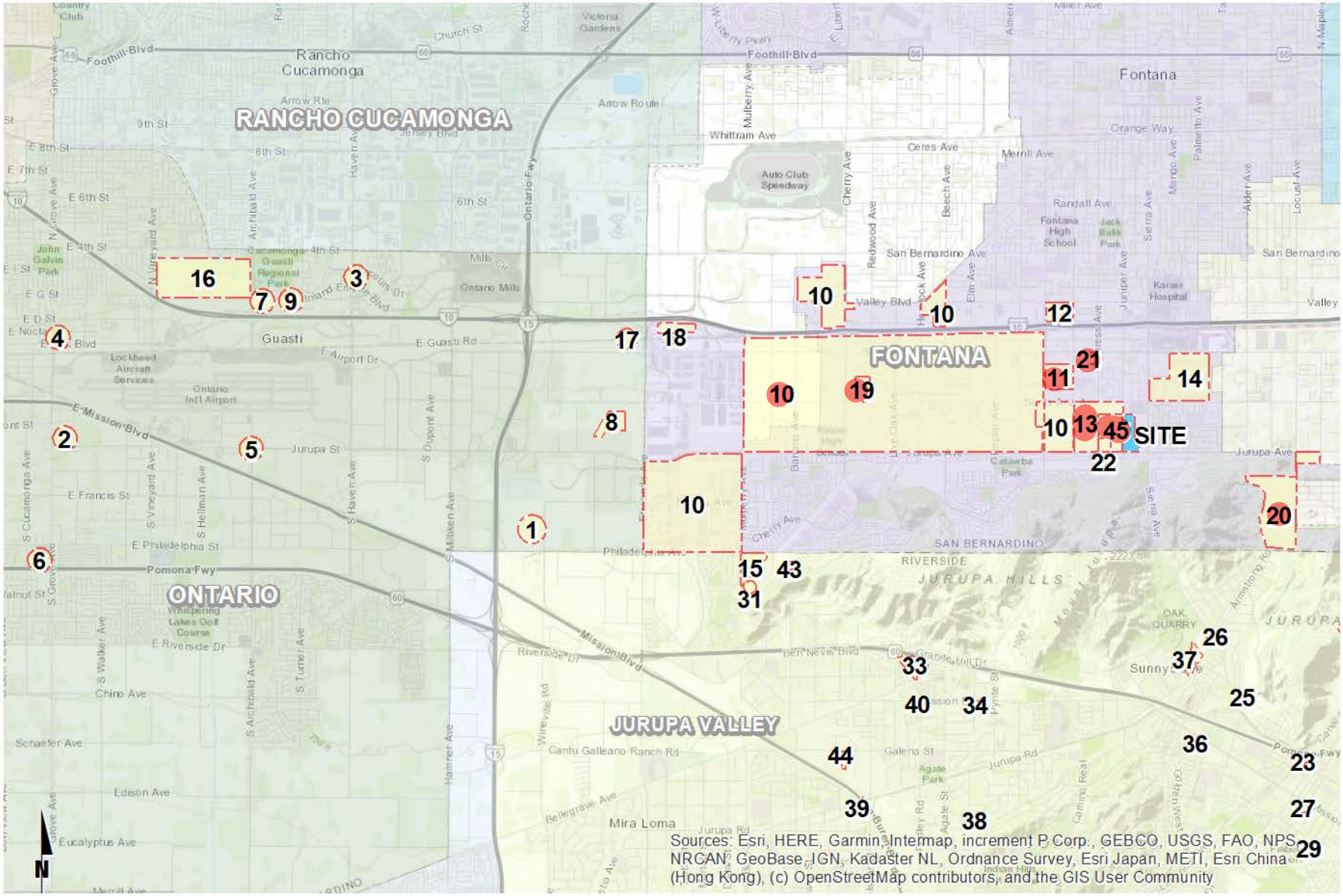


Table 4-3

Cumulative Development Land Use Summary

TAZ	Project	Land Use	Quantity [2]	
1	PDEV14-007	Industrial	910.119	TSF
2	PDEV14-010	Industrial	21.726	TSF
3	PCUP13-034	Hotel	122	RMS
4	PCUP13-028	Body Shop	0.79	AC
5	PDEV13-019	Industrial	569.200	TSF
6	PDEV13-014	Residential Condo	139	DU
7	PDEV13-012	Residential Condo	20	DU
8	PDEV13-007	General Industrial	618.536	TSF
9	PDEV13-008	Residential Condo	52	DU
10	Southwest Industrial Park (SWIP)[1]	Freeway Industrial Commercial (Central)		
		Warehousing	761.067	TSF
		Office	147.786	TSF
		Office Park	152.213	TSF
		Commercial Retail	456.640	TSF
		Freeway Industrial Commercial (East)		
		Warehousing	886.410	TSF
		Office	172.125	TSF
		Office Park	177.282	TSF
		Commercial Retail	531.846	TSF
		Freeway Industrial Commercial (North)		
		Warehousing	335.885	TSF
		Office	65.223	TSF
		Office Park	67.177	TSF
		Commercial Retail	201.531	TSF
		Freeway Industrial Commercial (West)		
		Warehousing	747.959	TSF
		Office	145.241	TSF
		Office Park	149.592	TSF
		Commercial Retail	448.776	TSF
		Jurupa North Research & Development (West)		
		Light Industrial	1344.901	TSF
		Office	478.407	TSF
		Office Park	847.485	TSF
		Research & Development	677.988	TSF
		Jurupa North Research & Development (Central)		
		Light Industrial	964.045	TSF
		Office	342.930	TSF
		Office Park	607.490	TSF
		Research & Development	485.992	TSF

Table 4-3

Cumulative Development Land Use Summary

TAZ	Project	Land Use	Quantity [2]	
10	Southwest Industrial Park (SWIP)[1]	Jurupa North Research & Development (East)		
		Light Industrial	917.459	TSF
		Office	326.358	TSF
		Office Park	578.134	TSF
		Research & Development	462.506	TSF
		Jurupa South Industrial		
		Light Industrial	70.985	TSF
		Warehousing	1799.899	TSF
		Slover Central Manufacturing/Industrial		
		Manufacturing	1113.002	TSF
		Warehousing	2597.004	TSF
		Slover East Industrial		
		Light Industrial	719.464	TSF
		Warehousing	1006.149	TSF
		Office Park	503.074	TSF
		Slover West Industrial		
		Light Industrial	1384.886	TSF
		Warehousing	3518.167	TSF
		Speedway Industrial		
		Light Industrial	930.121	TSF
		Warehousing	762.191	TSF
		Office Park	13.264	TSF
		SWIP Residential Trucking (1,3 and 4)		
		Single Family Detached Residential	84	DU
11	Citrus Center	Office	47.000	TSF
		Retail	44.500	TSF
		Fast Food w/ Drive-Thru	8.658	TSF
12	ASP 16-018	Retail w/ Gas Station	18.800	TSF
13	Southwest Fontana Logistics Center Project	Warehousing	1,628.936	TSF
		City Park	17.45	AC
14	Walmart Shopping Center	Free-Standing Discount Superstore	200.000	TSF
		Specialty Retail Center	9.490	TSF
		Fast Food w/o Drive-Thru	9.490	TSF
15	Country Village Shopping Center	Shopping Center	140.894	TSF
16	PM 19612	Industrial	30000.000	TSF
		Commercial Retail	1130.000	TSF
		Multi-Family	800	DU
		Hotel	600	RMS
17	PDEV16-001	Industrial	109.197	TSF
18	Pacific Freeway Center	High-Cube Warehouse / Distribution Center	477.500	TSF
		Manufacturing	44.500	TSF
19	First Redwood Logistics	High-Cube Warehouse / Distribution Center	360.000	TSF
		General Light Industrial	41.436	TSF
20	West Valley Logistics Center	High-Cube Warehouse / Distribution Center	3,183.100	TSF
		Warehousing	290.590	TSF

Table 4-3

Cumulative Development Land Use Summary

TAZ	Project	Land Use	Quantity [2]	
21	Gateway Logistics Center	High-Cube Warehouse (Cold Storage)	38.558	TSF
		Warehousing	154.232	TSF
22	St. Mary's Catholic Church	Church	19.508	TSF
23	Avalon Court (Tentative Tract 33649)	SFDR	24	DU
24	Emerald Ridge South	SFDR	97	DU
		Condo/Townhomes	118	DU
25	Highland Park	SFDR	398	DU
26	Tentative Tract Map 33373 (KR Land)	SFDR	97	DU
27	Palm Communities	Apartment	49	DU
28	New Rio Vista Specific Plan 243	SFDR	579	DU
		Condo/Townhomes	290	DU
		Apartment	346	DU
		Active Park	22.2	AC
		School (K-8)	600	STU
29	Flabob-River Springs Charter School	7th-12th Grade School	200	STU
30	Inland Empire Cold Storage	Cold Storage Facility	40.800	TSF
31	Country Village Shopping Center	Shopping Center	140.894	TSF
32	Market Street Commercial	High Turnover Sit-down Restaurant	4.750	TSF
		Fast Food w/ Drive-thru	2.860	TSF
		Gas station w/ foot mart and car wash	16	VFP
33	Pedley Crossing Shopping Center	Shopping Center	255.978	TSF
34	Mission Pyrite Plaza	Shopping Center	21.600	TSF
		High Turnover Sit-down Restaurant	3.000	TSF
		Gas/Service Station w/ Food and Car Wash	20	VFP
35	Rubidoux Commercial Development LLC	General Light Industrial	306.894	TSF
36	99-Cent Only Store	Free Standing Discount Store	18.012	TSF
37	Monarch at the Quarry (Armada Armstrong)	SFDR	86	DU
38	Stone Avenue (Tentative Tract 36702)	SFDR	17	DU
39	Karaki-Western States	Gas/Service Station w/ Food and Car Wash	7.246	TSF
40	Boureston Medical Clinic	Medical Clinic	40.000	TSF
41	Northtown Housing Development Group	Apartments	68	DU
		Commercial Retail	31.375	TSF
42	Agua Mansa Commerce Park Specific Plan	High-Cube Warehouse	4277.000	TSF
		General Light Industrial	150.000	TSF
		Commercial Retail	25.000	TSF
43	Philadelphia Subdivision (Tentative Tract 37214)	SFDR	44	DU
44	Galena Business Park Bldg.	General Light Industrial	47.500	TSF
45	Goodman Industrial Park Fontana III	Warehousing	894.768	TSF
		High-Cube Cold Storage Warehouse	223.692	TSF

[1] Source: Southwest Industrial Park (SWIP) Project TIA, RBF Consulting, September 29, 2011.

[2] TSF = Thousand Square Feet; RMS = Rooms; AC = Acres; DU = Dwelling Units

APPENDIX D

HCM ANALYSIS SHEETS

Fontana Southridge

Vistro File: C:\...\RCA20001 Analysis.vistro
Report File: C:\...\E AM_v2.pdf

Scenario 1 Existing AM
11/24/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Avenue / Santa Ana Avenue	Signalized	HCM 6th Edition	WB Left	0.449	20.9	C
2	Sierra Avenue / Under Wood Drive	Signalized	HCM 6th Edition	SB Left	0.479	29.9	C
3	Sierra Avenue / Jurupa Avenue	Signalized	HCM 6th Edition	SB Left	0.564	38.3	D
4	Sierra Avenue / Sierra Crossroads Access Driveway	Two-way stop	HCM 6th Edition	SB Left	0.611	36.0	E

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Avenue / Santa Ana Avenue

Control Type:	Signalized	Delay (sec / veh):	20.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.449

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Santa Ana Avenue			Santa Ana Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	195.00	100.00	210.00	314.00	100.00	100.00	221.00	100.00	67.00	255.00	100.00	250.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sierra Avenue			Sierra Avenue			Santa Ana Avenue			Santa Ana Avenue		
Base Volume Input [veh/h]	136	1222	36	59	686	67	103	61	43	48	79	93
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	136	1222	36	59	686	67	103	61	43	48	79	93
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	330	10	16	185	18	28	16	12	13	21	25
Total Analysis Volume [veh/h]	147	1320	39	64	741	72	111	66	46	52	85	100
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	9	38	0	13	46	0	16	49	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	29	0	0	37	0	0	36	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	71	71	4	69	69	9	15	15	4	10	10
g / C, Green / Cycle	0.05	0.64	0.64	0.04	0.63	0.63	0.08	0.13	0.13	0.04	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.05	0.28	0.03	0.02	0.17	0.17	0.07	0.02	0.03	0.03	0.03	0.07
s, saturation flow rate [veh/h]	3163	4658	1454	3163	3256	1634	1629	3256	1454	1629	3256	1454
c, Capacity [veh/h]	175	2986	932	126	2037	1022	134	433	193	67	297	133
d1, Uniform Delay [s]	51.52	9.90	7.29	51.79	9.25	9.26	49.73	42.25	42.75	52.32	46.68	48.82
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.20	0.48	0.08	3.11	0.32	0.64	11.94	0.16	0.63	17.73	0.52	8.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.84	0.44	0.04	0.51	0.27	0.27	0.83	0.15	0.24	0.78	0.29	0.75
d, Delay for Lane Group [s/veh]	61.72	10.38	7.38	54.89	9.57	9.90	61.68	42.41	43.38	70.04	47.21	57.19
Lane Group LOS	E	B	A	D	A	A	E	D	D	E	D	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.18	4.52	0.31	0.89	2.56	2.68	3.39	0.79	1.13	1.72	1.09	2.93
50th-Percentile Queue Length [ft/ln]	54.56	113.04	7.71	22.24	63.94	66.99	84.76	19.76	28.37	43.10	27.22	73.35
95th-Percentile Queue Length [veh/ln]	3.93	8.01	0.56	1.60	4.60	4.82	6.10	1.42	2.04	3.10	1.96	5.28
95th-Percentile Queue Length [ft/ln]	98.22	200.23	13.88	40.04	115.08	120.58	152.57	35.57	51.06	77.58	48.99	132.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	61.72	10.38	7.38	54.89	9.66	9.90	61.68	42.41	43.38	70.04	47.21	57.19
Movement LOS	E	B	A	D	A	A	E	D	D	E	D	E
d_A, Approach Delay [s/veh]	15.31			12.98			52.20			56.43		
Approach LOS	B			B			D			E		
d_I, Intersection Delay [s/veh]	20.91											
Intersection LOS	C											
Intersection V/C	0.449											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	3.284	3.226	2.578	2.552
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	636	618	764	818
d_b, Bicycle Delay [s]	25.57	26.25	21.02	19.20
l_b,int, Bicycle LOS Score for Intersection	2.388	2.042	1.744	1.755
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Sierra Avenue / Under Wood Drive

Control Type:	Signalized	Delay (sec / veh):	29.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.479

Intersection Setup

Name	Sierra Avenue		Sierra Avenue		Under Wood Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	200.00	210.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Sierra Avenue		Sierra Avenue		Under Wood Drive	
Base Volume Input [veh/h]	1226	11	103	667	44	164
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1226	11	103	667	44	164
Peak Hour Factor	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	329	3	28	179	12	44
Total Analysis Volume [veh/h]	1317	12	111	716	47	176
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal Group	6	0	5	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	0	5	10	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	79	0	9	88	42	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	15	0	0	10	33	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	95	95	5	104	18	18
g / C, Green / Cycle	0.73	0.73	0.04	0.80	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.28	0.01	0.07	0.22	0.03	0.12
s, saturation flow rate [veh/h]	4658	1454	1629	3256	1629	1454
c, Capacity [veh/h]	3403	1062	64	2607	224	200
d1, Uniform Delay [s]	6.57	4.75	62.40	3.31	49.72	54.94
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.33	0.02	345.28	0.26	0.46	11.63
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.01	1.74	0.27	0.21	0.88
d, Delay for Lane Group [s/veh]	6.90	4.77	407.68	3.57	50.18	66.57
Lane Group LOS	A	A	F	A	D	E
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.73	0.08	8.19	1.66	1.38	6.26
50th-Percentile Queue Length [ft/ln]	93.21	1.93	204.65	41.45	34.60	156.39
95th-Percentile Queue Length [veh/ln]	6.71	0.14	14.34	2.98	2.49	10.36
95th-Percentile Queue Length [ft/ln]	167.77	3.48	358.44	74.60	62.28	258.94

Movement, Approach, & Intersection Results

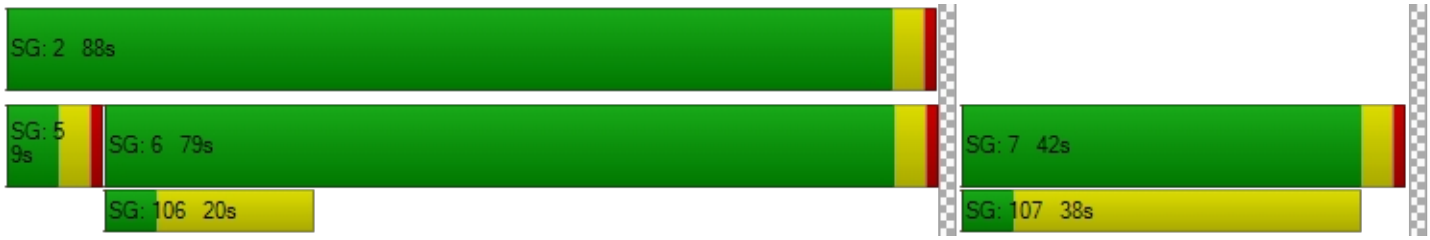
d_M, Delay for Movement [s/veh]	6.90	4.77	407.68	3.57	50.18	66.57
Movement LOS	A	A	F	A	D	E
d_A, Approach Delay [s/veh]	6.88		57.81		63.12	
Approach LOS	A		E		E	
d_I, Intersection Delay [s/veh]	29.86					
Intersection LOS	C					
Intersection V/C	0.479					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	56.31	56.31
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.100	2.248
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1154	1292	585
d_b, Bicycle Delay [s]	11.63	8.14	32.55
l_b,int, Bicycle LOS Score for Intersection	2.291	2.242	1.560
Bicycle LOS	B	B	A

Sequence

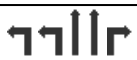
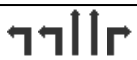
Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Sierra Avenue / Jurupa Avenue

Control Type:	Signalized	Delay (sec / veh):	38.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.564

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Jurupa Avenue			Jurupa Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	600.00	100.00	600.00	300.00	100.00	144.00	288.00	100.00	288.00	213.00	100.00	223.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sierra Avenue			Sierra Avenue			Jurupa Avenue			Jurupa Avenue		
Base Volume Input [veh/h]	339	865	41	45	375	144	258	57	243	121	165	88
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	339	865	41	45	375	144	258	57	243	121	165	88
Peak Hour Factor	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	97	247	12	13	107	41	74	16	70	35	47	25
Total Analysis Volume [veh/h]	388	990	47	51	429	165	295	65	278	138	189	101
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	57	0	9	44	0	19	41	0	23	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	35	0	0	32	0	0	36	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	75	75	4	61	61	14	27	27	8	21	21
g / C, Green / Cycle	0.14	0.58	0.58	0.03	0.47	0.47	0.11	0.21	0.21	0.06	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.12	0.30	0.03	0.02	0.13	0.11	0.09	0.02	0.19	0.04	0.06	0.07
s, saturation flow rate [veh/h]	3163	3256	1454	3163	3256	1454	3163	3256	1454	3163	3256	1454
c, Capacity [veh/h]	432	1871	835	105	1534	685	342	680	304	190	524	234
d1, Uniform Delay [s]	55.23	16.91	12.16	61.77	20.95	20.52	57.02	41.51	50.30	60.04	48.59	49.19
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.85	1.08	0.13	3.46	0.46	0.83	6.42	0.06	10.77	5.16	0.42	1.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.53	0.06	0.49	0.28	0.24	0.86	0.10	0.92	0.72	0.36	0.43
d, Delay for Lane Group [s/veh]	62.08	17.98	12.29	65.23	21.41	21.35	63.44	41.57	61.06	65.20	49.01	50.44
Lane Group LOS	E	B	B	E	C	C	E	D	E	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.47	8.49	0.59	0.86	3.88	3.01	5.00	0.84	9.58	2.35	2.74	3.01
50th-Percentile Queue Length [ft/ln]	161.70	212.29	14.76	21.44	96.89	75.13	125.05	21.06	239.54	58.63	68.40	75.22
95th-Percentile Queue Length [veh/ln]	10.64	13.27	1.06	1.54	6.98	5.41	8.67	1.52	14.66	4.22	4.92	5.42
95th-Percentile Queue Length [ft/ln]	265.97	331.76	26.58	38.59	174.40	135.24	216.75	37.91	366.45	105.53	123.12	135.40

Movement, Approach, & Intersection Results

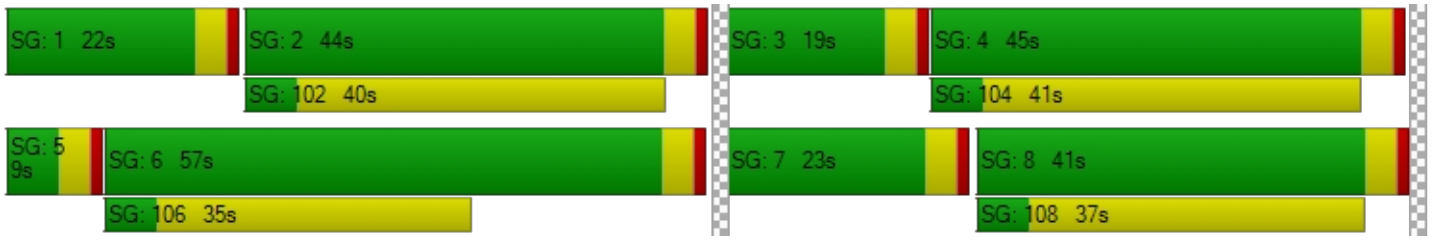
d_M, Delay for Movement [s/veh]	62.08	17.98	12.29	65.23	21.41	21.35	63.44	41.57	61.06	65.20	49.01	50.44
Movement LOS	E	B	B	E	C	C	E	D	E	E	D	D
d_A, Approach Delay [s/veh]	29.80			24.86			60.17			54.57		
Approach LOS	C			C			E			D		
d_I, Intersection Delay [s/veh]	38.34											
Intersection LOS	D											
Intersection V/C	0.564											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	56.31	56.31	56.31	56.31
l_p,int, Pedestrian LOS Score for Intersection	3.140	3.157	2.869	2.723
Crosswalk LOS	C	C	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	815	615	569	631
d_b, Bicycle Delay [s]	22.80	31.15	33.27	30.47
l_b,int, Bicycle LOS Score for Intersection	2.735	2.092	2.086	1.913
Bicycle LOS	B	B	B	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 4: Sierra Avenue / Sierra Crossroads Access Driveway

Control Type:	Two-way stop	Delay (sec / veh):	36.0
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.611

Intersection Setup

Name	Sierra Avenue		Sierra Avenue		Sierra Crossroads Access Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	165.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00		50.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sierra Avenue		Sierra Avenue		Sierra Crossroads Access Driveway	
Base Volume Input [veh/h]	1130	36	153	558	0	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1130	36	153	558	0	101
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	1.0000	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	317	10	43	157	0	28
Total Analysis Volume [veh/h]	1270	40	172	627	0	113
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.61	0.01	0.00	0.32
d_M, Delay for Movement [s/veh]	0.00	0.00	35.98	0.00	0.00	19.85
Movement LOS	A	A	E	A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	3.71	0.00	0.00	1.35
95th-Percentile Queue Length [ft/ln]	0.00	0.00	92.68	0.00	0.00	33.64
d_A, Approach Delay [s/veh]	0.00		7.74		19.85	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.79					
Intersection LOS	E					

Fontana Southridge

Vistro File: C:\...\RCA20001 Analysis.vistro
Report File: C:\...\E PM_v2.pdf

Scenario 2 Existing PM
11/24/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Avenue / Santa Ana Avenue	Signalized	HCM 6th Edition	EB Left	0.522	25.6	C
2	Sierra Avenue / Under Wood Drive	Signalized	HCM 6th Edition	SB Left	0.595	15.3	B
3	Sierra Avenue / Jurupa Avenue	Signalized	HCM 6th Edition	EB Left	0.634	42.0	D
4	Sierra Avenue / Sierra Crossroads Access Driveway	Two-way stop	HCM 6th Edition	SB Left	0.939	86.0	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Avenue / Santa Ana Avenue

Control Type:	Signalized	Delay (sec / veh):	25.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.522

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Santa Ana Avenue			Santa Ana Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	195.00	100.00	210.00	314.00	100.00	100.00	221.00	100.00	67.00	255.00	100.00	250.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sierra Avenue			Sierra Avenue			Santa Ana Avenue			Santa Ana Avenue		
Base Volume Input [veh/h]	176	1332	49	113	1130	96	161	139	117	93	112	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	176	1332	49	113	1130	96	161	139	117	93	112	101
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	348	13	30	296	25	42	36	31	24	29	26
Total Analysis Volume [veh/h]	184	1393	51	118	1182	100	168	145	122	97	117	106
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	40	0	9	38	0	16	46	0	15	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	29	0	0	37	0	0	36	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	67	67	5	65	65	12	14	14	8	10	10
g / C, Green / Cycle	0.06	0.61	0.61	0.05	0.59	0.59	0.11	0.13	0.13	0.07	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.06	0.30	0.04	0.04	0.26	0.26	0.10	0.04	0.08	0.06	0.04	0.07
s, saturation flow rate [veh/h]	3163	4658	1454	3163	3256	1643	1629	3256	1454	1629	3256	1454
c, Capacity [veh/h]	204	2815	878	146	1909	963	179	423	189	121	307	137
d1, Uniform Delay [s]	51.17	12.30	8.93	52.01	12.77	12.77	48.66	43.61	45.48	50.19	46.83	48.70
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	13.61	0.62	0.13	9.90	0.76	1.50	19.87	0.48	3.66	11.72	0.78	8.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.49	0.06	0.81	0.45	0.45	0.94	0.34	0.65	0.80	0.38	0.77
d, Delay for Lane Group [s/veh]	64.78	12.92	9.06	61.91	13.52	14.26	68.53	44.09	49.15	61.91	47.60	57.55
Lane Group LOS	E	B	A	E	B	B	E	D	D	E	D	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.81	5.64	0.47	1.76	5.30	5.54	5.46	1.79	3.29	2.97	1.51	3.12
50th-Percentile Queue Length [ft/ln]	70.24	141.08	11.70	43.91	132.38	138.53	136.51	44.83	82.27	74.23	37.78	78.06
95th-Percentile Queue Length [veh/ln]	5.06	9.54	0.84	3.16	9.07	9.40	9.29	3.23	5.92	5.34	2.72	5.62
95th-Percentile Queue Length [ft/ln]	126.43	238.48	21.06	79.04	226.72	235.04	232.31	80.70	148.08	133.61	68.00	140.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	64.78	12.92	9.06	61.91	13.73	14.26	68.53	44.09	49.15	61.91	47.60	57.55
Movement LOS	E	B	A	E	B	B	E	D	D	E	D	E
d_A, Approach Delay [s/veh]	18.66			17.83			54.95			55.23		
Approach LOS	B			B			D			E		
d_I, Intersection Delay [s/veh]	25.62											
Intersection LOS	C											
Intersection V/C	0.522											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	3.407	3.360	2.645	2.601
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	655	618	764	745
d_b, Bicycle Delay [s]	24.89	26.25	21.02	21.64
l_b,int, Bicycle LOS Score for Intersection	2.455	2.330	1.918	1.824
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Sierra Avenue / Under Wood Drive

Control Type:	Signalized	Delay (sec / veh):	15.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.595

Intersection Setup

Name	Sierra Avenue		Sierra Avenue		Under Wood Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	200.00	210.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Sierra Avenue		Sierra Avenue		Under Wood Drive	
Base Volume Input [veh/h]	1368	66	226	1105	60	182
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1368	66	226	1105	60	182
Peak Hour Factor	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	357	17	59	288	16	47
Total Analysis Volume [veh/h]	1426	69	236	1152	63	190
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal Group	6	0	5	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	0	5	10	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	24	0	24	48	42	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	15	0	0	10	33	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	49	49	15	68	14	14
g / C, Green / Cycle	0.54	0.54	0.17	0.76	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.31	0.05	0.14	0.35	0.04	0.13
s, saturation flow rate [veh/h]	4658	1454	1629	3256	1629	1454
c, Capacity [veh/h]	2535	791	271	2458	254	227
d1, Uniform Delay [s]	13.48	9.82	36.60	4.18	33.35	36.88
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.91	0.22	8.48	0.64	0.50	7.93
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.56	0.09	0.87	0.47	0.25	0.84
d, Delay for Lane Group [s/veh]	14.39	10.04	45.08	4.83	33.85	44.81
Lane Group LOS	B	B	D	A	C	D
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.42	0.60	5.35	2.30	1.21	4.43
50th-Percentile Queue Length [ft/ln]	135.39	14.95	133.68	57.42	30.37	110.83
95th-Percentile Queue Length [veh/ln]	9.23	1.08	9.14	4.13	2.19	7.89
95th-Percentile Queue Length [ft/ln]	230.80	26.90	228.48	103.36	54.67	197.16

Movement, Approach, & Intersection Results

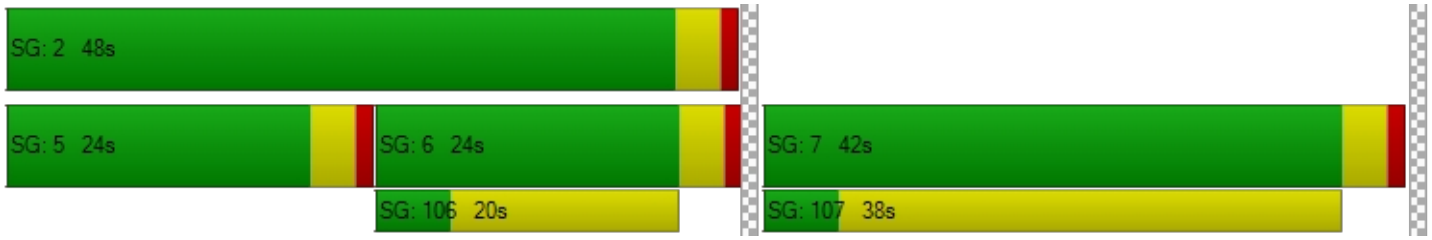
d_M, Delay for Movement [s/veh]	14.39	10.04	45.08	4.83	33.85	44.81
Movement LOS	B	B	D	A	C	D
d_A, Approach Delay [s/veh]	14.19		11.67		42.08	
Approach LOS	B		B		D	
d_I, Intersection Delay [s/veh]	15.32					
Intersection LOS	B					
Intersection V/C	0.595					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.268	2.291
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	978	844
d_b, Bicycle Delay [s]	27.22	11.76	15.02
l_b,int, Bicycle LOS Score for Intersection	2.382	2.705	1.560
Bicycle LOS	B	B	A

Sequence

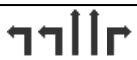
Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Sierra Avenue / Jurupa Avenue

Control Type:	Signalized	Delay (sec / veh):	42.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.634

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Jurupa Avenue			Jurupa Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	600.00	100.00	600.00	300.00	100.00	144.00	288.00	100.00	288.00	213.00	100.00	223.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sierra Avenue			Sierra Avenue			Jurupa Avenue			Jurupa Avenue		
Base Volume Input [veh/h]	280	916	119	121	555	253	428	256	330	174	267	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	280	916	119	121	555	253	428	256	330	174	267	80
Peak Hour Factor	0.9640	0.9640	0.9640	0.9640	0.9640	0.9640	0.9640	0.9640	0.9640	0.9640	0.9640	0.9640
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	73	238	31	31	144	66	111	66	86	45	69	21
Total Analysis Volume [veh/h]	290	950	123	126	576	262	444	266	342	180	277	83
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	18	51	0	11	44	0	23	55	0	13	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	35	0	0	32	0	0	36	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	14	65	65	7	58	58	19	33	33	9	23	23
g / C, Green / Cycle	0.11	0.50	0.50	0.05	0.45	0.45	0.15	0.26	0.26	0.07	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.09	0.29	0.08	0.04	0.18	0.18	0.14	0.08	0.24	0.06	0.09	0.06
s, saturation flow rate [veh/h]	3163	3256	1454	3163	3256	1454	3163	3256	1454	3163	3256	1454
c, Capacity [veh/h]	336	1619	723	172	1450	647	463	832	371	221	582	260
d1, Uniform Delay [s]	57.18	23.21	17.96	60.53	24.29	24.39	55.10	39.24	47.12	59.64	47.91	46.49
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.17	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.63	1.57	0.51	5.86	0.82	1.88	11.87	0.22	13.82	7.14	0.60	0.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.59	0.17	0.73	0.40	0.40	0.96	0.32	0.92	0.81	0.48	0.32
d, Delay for Lane Group [s/veh]	63.81	24.78	18.47	66.39	25.10	26.27	66.96	39.46	60.95	66.78	48.51	47.19
Lane Group LOS	E	C	B	E	C	C	E	D	E	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	4.86	9.97	2.03	2.13	5.84	5.52	7.86	3.44	11.96	3.11	4.03	2.37
50th-Percentile Queue Length [ft/ln]	121.44	249.35	50.75	53.32	145.97	138.02	196.59	85.90	298.96	77.68	100.84	59.19
95th-Percentile Queue Length [veh/ln]	8.47	15.15	3.65	3.84	9.80	9.37	12.46	6.19	17.63	5.59	7.26	4.26
95th-Percentile Queue Length [ft/ln]	211.80	378.83	91.35	95.97	245.04	234.36	311.56	154.63	440.74	139.83	181.51	106.54

Movement, Approach, & Intersection Results

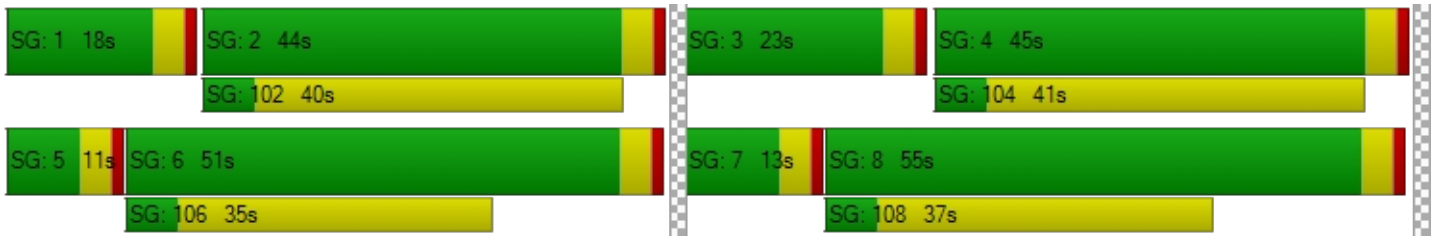
d_M, Delay for Movement [s/veh]	63.81	24.78	18.47	66.39	25.10	26.27	66.96	39.46	60.95	66.78	48.51	47.19
Movement LOS	E	C	B	E	C	C	E	D	E	E	D	D
d_A, Approach Delay [s/veh]	32.51			30.82			58.05			54.40		
Approach LOS	C			C			E			D		
d_I, Intersection Delay [s/veh]	41.97											
Intersection LOS	D											
Intersection V/C	0.634											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	56.31	56.31	56.31	56.31
l_p,int, Pedestrian LOS Score for Intersection	3.184	3.240	2.962	2.809
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	723	615	785	631
d_b, Bicycle Delay [s]	26.50	31.15	24.00	30.47
l_b,int, Bicycle LOS Score for Intersection	2.684	2.355	2.428	2.005
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 4: Sierra Avenue / Sierra Crossroads Access Driveway

Control Type:	Two-way stop	Delay (sec / veh):	86.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.939

Intersection Setup

Name	Sierra Avenue		Sierra Avenue		Sierra Crossroads Access Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	165.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00		50.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sierra Avenue		Sierra Avenue		Sierra Crossroads Access Driveway	
Base Volume Input [veh/h]	1284	98	222	929	0	129
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	2.00	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1284	98	222	929	0	129
Peak Hour Factor	0.9640	0.9640	0.9640	0.9640	1.0000	0.9640
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	333	25	58	241	0	33
Total Analysis Volume [veh/h]	1332	102	230	964	0	134
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.94	0.01	0.00	0.42
d_M, Delay for Movement [s/veh]	0.00	0.00	86.03	0.00	0.00	23.84
Movement LOS	A	A	F	A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	8.40	0.00	0.00	1.97
95th-Percentile Queue Length [ft/ln]	0.00	0.00	210.08	0.00	0.00	49.14
d_A, Approach Delay [s/veh]	0.00		16.57		23.84	
Approach LOS	A		C		C	
d_I, Intersection Delay [s/veh]	8.32					
Intersection LOS	F					

Fontana Southridge

Vistro File: C:\...\RCA20001 Analysis.vistro
Report File: C:\...\C AM_v2.pdf

Scenario 3 Construction AM
11/24/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Avenue / Santa Ana Avenue	Signalized	HCM 6th Edition	WB Left	0.468	21.3	C
2	Sierra Avenue / Under Wood Drive	Signalized	HCM 6th Edition	SB Left	0.504	12.0	B
3	Sierra Avenue / Jurupa Avenue	Signalized	HCM 6th Edition	SB Left	0.587	39.1	D
4	Sierra Avenue / Sierra Crossroads Access Driveway	Two-way stop	HCM 6th Edition	SB Left	0.674	42.6	E

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Avenue / Santa Ana Avenue

Control Type:	Signalized	Delay (sec / veh):	21.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.468

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Santa Ana Avenue			Santa Ana Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	195.00	100.00	210.00	314.00	100.00	100.00	221.00	100.00	67.00	255.00	100.00	250.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sierra Avenue			Sierra Avenue			Santa Ana Avenue			Santa Ana Avenue		
Base Volume Input [veh/h]	136	1222	36	59	686	67	103	61	43	48	79	93
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	11	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	141	1271	37	61	724	70	107	63	45	50	82	97
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	343	10	16	195	19	29	17	12	13	22	26
Total Analysis Volume [veh/h]	152	1373	40	66	782	76	116	68	49	54	89	105
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	9	38	0	13	46	0	16	49	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	29	0	0	37	0	0	36	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	70	70	4	69	69	9	15	15	5	10	10
g / C, Green / Cycle	0.05	0.64	0.64	0.04	0.62	0.62	0.08	0.13	0.13	0.04	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.05	0.29	0.03	0.02	0.18	0.18	0.07	0.02	0.03	0.03	0.03	0.07
s, saturation flow rate [veh/h]	3163	4658	1454	3163	3256	1634	1629	3256	1454	1629	3256	1454
c, Capacity [veh/h]	175	2975	928	128	2031	1019	134	434	194	69	303	135
d1, Uniform Delay [s]	51.61	10.19	7.39	51.78	9.45	9.46	49.90	42.24	42.80	52.21	46.54	48.79
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.16	0.52	0.09	3.22	0.35	0.69	14.76	0.17	0.68	17.13	0.53	9.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.46	0.04	0.52	0.28	0.28	0.86	0.16	0.25	0.78	0.29	0.78
d, Delay for Lane Group [s/veh]	63.77	10.71	7.48	54.99	9.80	10.16	64.66	42.41	43.48	69.34	47.07	57.88
Lane Group LOS	E	B	A	D	A	B	E	D	D	E	D	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.30	4.83	0.32	0.92	2.75	2.88	3.64	0.81	1.21	1.78	1.14	3.10
50th-Percentile Queue Length [ft/ln]	57.48	120.70	7.99	22.96	68.80	72.00	90.96	20.36	30.28	44.46	28.46	77.57
95th-Percentile Queue Length [veh/ln]	4.14	8.43	0.58	1.65	4.95	5.18	6.55	1.47	2.18	3.20	2.05	5.59
95th-Percentile Queue Length [ft/ln]	103.47	210.79	14.38	41.33	123.83	129.60	163.73	36.65	54.51	80.02	51.23	139.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	63.77	10.71	7.48	54.99	9.90	10.16	64.66	42.41	43.48	69.34	47.07	57.88
Movement LOS	E	B	A	D	A	B	E	D	D	E	D	E
d_A, Approach Delay [s/veh]	15.78			13.14			53.71			56.50		
Approach LOS	B			B			D			E		
d_I, Intersection Delay [s/veh]	21.33											
Intersection LOS	C											
Intersection V/C	0.468											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	3.303	3.248	2.583	2.555
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	636	618	764	818
d_b, Bicycle Delay [s]	25.57	26.25	21.02	19.20
l_b,int, Bicycle LOS Score for Intersection	2.420	2.068	1.752	1.764
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Sierra Avenue / Under Wood Drive

Control Type:	Signalized	Delay (sec / veh):	12.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.504

Intersection Setup

Name	Sierra Avenue		Sierra Avenue		Under Wood Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	200.00	210.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Sierra Avenue		Sierra Avenue		Under Wood Drive	
Base Volume Input [veh/h]	1226	11	103	667	44	164
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	11	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1275	11	107	705	46	171
Peak Hour Factor	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	342	3	29	189	12	46
Total Analysis Volume [veh/h]	1369	12	115	757	49	184
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal Group	6	0	5	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	0	5	10	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	24	0	14	38	42	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	15	0	0	10	33	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	49	49	7	60	12	12
g / C, Green / Cycle	0.61	0.61	0.09	0.75	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.29	0.01	0.07	0.23	0.03	0.13
s, saturation flow rate [veh/h]	4658	1454	1629	3256	1629	1454
c, Capacity [veh/h]	2827	882	144	2427	252	225
d1, Uniform Delay [s]	8.77	6.24	35.79	3.38	29.50	32.76
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.60	0.03	9.56	0.34	0.37	7.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.48	0.01	0.80	0.31	0.19	0.82
d, Delay for Lane Group [s/veh]	9.36	6.27	45.35	3.72	29.87	39.91
Lane Group LOS	A	A	D	A	C	D
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.34	0.07	2.42	1.03	0.82	3.75
50th-Percentile Queue Length [ft/ln]	83.56	1.66	60.58	25.77	20.47	93.82
95th-Percentile Queue Length [veh/ln]	6.02	0.12	4.36	1.86	1.47	6.76
95th-Percentile Queue Length [ft/ln]	150.41	2.99	109.04	46.39	36.85	168.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.36	6.27	45.35	3.72	29.87	39.91
Movement LOS	A	A	D	A	C	D
d_A, Approach Delay [s/veh]	9.34		9.21		37.80	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	11.96					
Intersection LOS	B					
Intersection V/C	0.504					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	31.51	31.51
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.105	2.229
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	850	950
d_b, Bicycle Delay [s]	22.50	13.23	11.03
l_b,int, Bicycle LOS Score for Intersection	2.319	2.279	1.560
Bicycle LOS	B	B	A

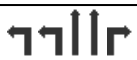
Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: Sierra Avenue / Jurupa Avenue

Control Type:	Signalized	Delay (sec / veh):	39.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.587

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Jurupa Avenue			Jurupa Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	600.00	100.00	600.00	300.00	100.00	144.00	288.00	100.00	288.00	213.00	100.00	223.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sierra Avenue			Sierra Avenue			Jurupa Avenue			Jurupa Avenue		
Base Volume Input [veh/h]	339	865	41	45	375	144	258	57	243	121	165	88
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	11	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	353	900	43	47	390	161	268	59	253	126	172	92
Peak Hour Factor	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	101	257	12	13	112	46	77	17	72	36	49	26
Total Analysis Volume [veh/h]	404	1030	49	54	446	184	307	68	289	144	197	105
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	57	0	9	44	0	19	46	0	18	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	35	0	0	32	0	0	36	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	74	74	4	60	60	14	28	28	8	22	22
g / C, Green / Cycle	0.14	0.57	0.57	0.03	0.46	0.46	0.11	0.22	0.22	0.06	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.13	0.32	0.03	0.02	0.14	0.13	0.10	0.02	0.20	0.05	0.06	0.07
s, saturation flow rate [veh/h]	3163	3256	1454	3163	3256	1454	3163	3256	1454	3163	3256	1454
c, Capacity [veh/h]	439	1839	821	107	1498	669	353	705	315	195	542	242
d1, Uniform Delay [s]	55.28	18.00	12.73	61.75	21.97	21.71	56.82	40.75	49.80	59.98	48.07	48.68
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.12	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.31	1.24	0.14	3.66	0.51	1.02	6.58	0.06	11.84	5.40	0.41	1.23
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.92	0.56	0.06	0.51	0.30	0.28	0.87	0.10	0.92	0.74	0.36	0.43
d, Delay for Lane Group [s/veh]	63.59	19.23	12.87	65.41	22.48	22.73	63.40	40.81	61.64	65.38	48.48	49.91
Lane Group LOS	E	B	B	E	C	C	E	D	E	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.83	9.28	0.63	0.91	4.16	3.50	5.21	0.87	10.04	2.45	2.84	3.11
50th-Percentile Queue Length [ft/ln]	170.81	231.88	15.87	22.73	104.03	87.39	130.26	21.81	250.93	61.29	70.93	77.80
95th-Percentile Queue Length [veh/ln]	11.12	14.27	1.14	1.64	7.49	6.29	8.95	1.57	15.23	4.41	5.11	5.60
95th-Percentile Queue Length [ft/ln]	277.98	356.75	28.57	40.91	187.25	157.30	223.84	39.26	380.83	110.32	127.68	140.04

Movement, Approach, & Intersection Results

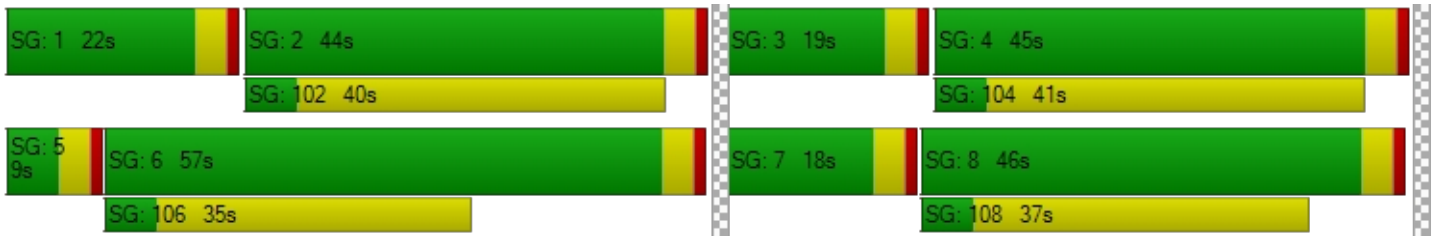
d_M, Delay for Movement [s/veh]	63.59	19.23	12.87	65.41	22.48	22.73	63.40	40.81	61.64	65.38	48.48	49.91
Movement LOS	E	B	B	E	C	C	E	D	E	E	D	D
d_A, Approach Delay [s/veh]	31.11			25.94			60.32			54.27		
Approach LOS	C			C			E			D		
d_I, Intersection Delay [s/veh]	39.10											
Intersection LOS	D											
Intersection V/C	0.587											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	56.31	56.31	56.31	56.31
l_p,int, Pedestrian LOS Score for Intersection	3.161	3.176	2.882	2.727
Crosswalk LOS	C	C	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	815	615	646	631
d_b, Bicycle Delay [s]	22.80	31.15	29.78	30.47
l_b,int, Bicycle LOS Score for Intersection	2.783	2.124	2.107	1.928
Bicycle LOS	C	B	B	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 4: Sierra Avenue / Sierra Crossroads Access Driveway

Control Type:	Two-way stop	Delay (sec / veh):	42.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.674

Intersection Setup

Name	Sierra Avenue			Sierra Avenue						Si Cr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	165.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Sierra Avenue			Sierra Avenue						Si Cr		
Base Volume Input [veh/h]	0	1130	36	153	558	0	0	0	0	0	0	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
Growth Factor	1.0000	1.0400	1.0400	1.0400	1.0400	1.0400	1.0000	1.0000	1.0400	1.0000	1.0000	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	11	0	0	11	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1175	37	159	580	11	0	0	11	0	0	105
Peak Hour Factor	1.0000	0.8900	0.8900	0.8900	0.8900	0.8900	1.0000	1.0000	0.8900	1.0000	1.0000	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	330	10	45	163	3	0	0	3	0	0	29
Total Analysis Volume [veh/h]	0	1320	42	179	652	12	0	0	12	0	0	118
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.67	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.35
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	42.63	0.00	0.00	0.00	0.00	11.49	0.00	0.00	21.06
Movement LOS		A	A	E	A	A			B			C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	4.41	0.00	0.00	0.00	0.00	0.06	0.00	0.00	1.51
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	110.20	0.00	0.00	0.00	0.00	1.62	0.00	0.00	37.70
d_A, Approach Delay [s/veh]	0.00			9.05			11.49			21.06		
Approach LOS	A			A			B			C		
d_I, Intersection Delay [s/veh]	4.39											
Intersection LOS	E											

Fontana Southridge

Vistro File: C:\...\RCA20001 Analysis.vistro
Report File: C:\...\C PM_v2.pdf

Scenario 4 Construction PM
11/24/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Avenue / Santa Ana Avenue	Signalized	HCM 6th Edition	EB Left	0.543	26.5	C
2	Sierra Avenue / Under Wood Drive	Signalized	HCM 6th Edition	SB Left	0.618	15.9	B
3	Sierra Avenue / Jurupa Avenue	Signalized	HCM 6th Edition	NB Left	0.657	42.8	D
4	Sierra Avenue / Sierra Crossroads Access Driveway	Two-way stop	HCM 6th Edition	SB Left	1.045	117.3	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Avenue / Santa Ana Avenue

Control Type:	Signalized	Delay (sec / veh):	26.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.543

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Santa Ana Avenue			Santa Ana Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	195.00	100.00	210.00	314.00	100.00	100.00	221.00	100.00	67.00	255.00	100.00	250.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sierra Avenue			Sierra Avenue			Santa Ana Avenue			Santa Ana Avenue		
Base Volume Input [veh/h]	176	1332	49	113	1130	96	161	139	117	93	112	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	11	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	183	1385	51	118	1186	100	167	145	122	97	116	105
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	362	13	31	310	26	44	38	32	25	30	27
Total Analysis Volume [veh/h]	191	1449	53	123	1241	105	175	152	128	101	121	110
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	39	0	10	38	0	16	46	0	15	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	29	0	0	37	0	0	36	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	65	65	6	64	64	12	14	14	8	11	11
g / C, Green / Cycle	0.06	0.59	0.59	0.05	0.58	0.58	0.11	0.13	0.13	0.08	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.06	0.31	0.04	0.04	0.27	0.27	0.11	0.05	0.09	0.06	0.04	0.08
s, saturation flow rate [veh/h]	3163	4658	1454	3163	3256	1643	1629	3256	1454	1629	3256	1454
c, Capacity [veh/h]	204	2760	861	175	1899	958	179	424	189	125	317	141
d1, Uniform Delay [s]	51.29	13.27	9.49	51.11	13.18	13.18	48.90	43.69	45.68	50.03	46.59	48.54
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	17.66	0.72	0.14	5.06	0.84	1.66	26.86	0.51	4.18	11.55	0.76	8.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.53	0.06	0.70	0.47	0.47	0.98	0.36	0.68	0.81	0.38	0.78
d, Delay for Lane Group [s/veh]	68.95	13.99	9.63	56.17	14.02	14.84	75.75	44.21	49.86	61.57	47.35	57.39
Lane Group LOS	E	B	A	E	B	B	E	D	D	E	D	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.02	6.24	0.51	1.73	5.72	5.99	6.02	1.88	3.48	3.08	1.56	3.24
50th-Percentile Queue Length [ft/ln]	75.56	155.98	12.70	43.22	143.02	149.76	150.39	47.11	87.11	77.05	38.96	80.90
95th-Percentile Queue Length [veh/ln]	5.44	10.34	0.91	3.11	9.64	10.00	10.04	3.39	6.27	5.55	2.80	5.82
95th-Percentile Queue Length [ft/ln]	136.00	258.40	22.86	77.80	241.08	250.11	250.96	84.80	156.81	138.68	70.12	145.62

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	68.95	13.99	9.63	56.17	14.24	14.84	75.75	44.21	49.86	61.57	47.35	57.39
Movement LOS	E	B	A	E	B	B	E	D	D	E	D	E
d_A, Approach Delay [s/veh]	20.06			17.80			57.93			55.00		
Approach LOS	C			B			E			E		
d_I, Intersection Delay [s/veh]	26.52											
Intersection LOS	C											
Intersection V/C	0.543											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	3.431	3.387	2.653	2.607
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	636	618	764	745
d_b, Bicycle Delay [s]	25.57	26.25	21.02	21.64
l_b,int, Bicycle LOS Score for Intersection	2.491	2.368	1.935	1.834
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Sierra Avenue / Under Wood Drive

Control Type:	Signalized	Delay (sec / veh):	15.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.618

Intersection Setup

Name	Sierra Avenue		Sierra Avenue		Under Wood Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	200.00	210.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Sierra Avenue		Sierra Avenue		Under Wood Drive	
Base Volume Input [veh/h]	1368	66	226	1105	60	182
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	11	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1423	69	235	1160	62	189
Peak Hour Factor	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	371	18	61	302	16	49
Total Analysis Volume [veh/h]	1484	72	245	1210	65	197
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal Group	6	0	5	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	0	5	10	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	24	0	24	48	42	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	15	0	0	10	33	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	48	48	15	68	14	14
g / C, Green / Cycle	0.53	0.53	0.17	0.75	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.32	0.05	0.15	0.37	0.04	0.14
s, saturation flow rate [veh/h]	4658	1454	1629	3256	1629	1454
c, Capacity [veh/h]	2487	776	280	2442	262	234
d1, Uniform Delay [s]	14.36	10.29	36.36	4.48	33.00	36.65
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.06	0.24	8.53	0.72	0.49	7.92
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	0.09	0.88	0.50	0.25	0.84
d, Delay for Lane Group [s/veh]	15.42	10.53	44.89	5.20	33.49	44.57
Lane Group LOS	B	B	D	A	C	D
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.95	0.65	5.54	2.61	1.25	4.59
50th-Percentile Queue Length [ft/ln]	148.64	16.15	138.59	65.17	31.14	114.69
95th-Percentile Queue Length [veh/ln]	9.94	1.16	9.41	4.69	2.24	8.10
95th-Percentile Queue Length [ft/ln]	248.62	29.07	235.13	117.31	56.05	202.51

Movement, Approach, & Intersection Results

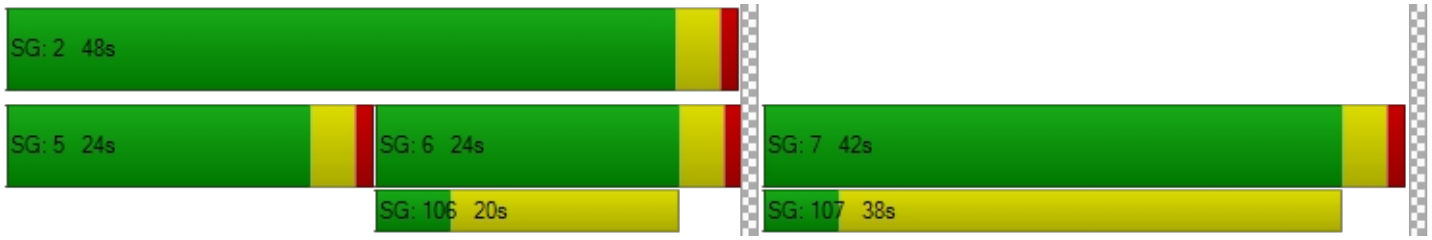
d_M, Delay for Movement [s/veh]	15.42	10.53	44.89	5.20	33.49	44.57
Movement LOS	B	B	D	A	C	D
d_A, Approach Delay [s/veh]	15.19		11.88		41.82	
Approach LOS	B		B		D	
d_I, Intersection Delay [s/veh]	15.85					
Intersection LOS	B					
Intersection V/C	0.618					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.304	2.297
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	978	844
d_b, Bicycle Delay [s]	27.22	11.76	15.02
l_b,int, Bicycle LOS Score for Intersection	2.415	2.760	1.560
Bicycle LOS	B	C	A

Sequence

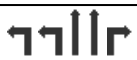
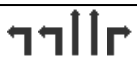
Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Sierra Avenue / Jurupa Avenue

Control Type:	Signalized	Delay (sec / veh):	42.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.657

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Jurupa Avenue			Jurupa Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	600.00	100.00	600.00	300.00	100.00	144.00	288.00	100.00	288.00	213.00	100.00	223.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sierra Avenue			Sierra Avenue			Jurupa Avenue			Jurupa Avenue		
Base Volume Input [veh/h]	280	916	119	121	555	253	428	256	330	174	267	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	11	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	291	953	124	126	577	274	445	266	343	181	278	83
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	75	246	32	33	149	71	115	69	89	47	72	21
Total Analysis Volume [veh/h]	301	986	128	130	597	283	460	275	355	187	287	86
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	50	0	11	44	0	24	56	0	13	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	35	0	0	32	0	0	36	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	64	64	7	58	58	20	34	34	9	23	23
g / C, Green / Cycle	0.10	0.49	0.49	0.05	0.44	0.44	0.15	0.26	0.26	0.07	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.10	0.30	0.09	0.04	0.18	0.19	0.15	0.08	0.24	0.06	0.09	0.06
s, saturation flow rate [veh/h]	3163	3256	1454	3163	3256	1454	3163	3256	1454	3163	3256	1454
c, Capacity [veh/h]	318	1589	709	172	1439	643	487	861	384	221	587	262
d1, Uniform Delay [s]	58.13	24.44	18.68	60.61	24.78	25.13	54.43	38.41	46.53	59.78	47.91	46.43
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.18	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	13.84	1.83	0.56	6.53	0.88	2.19	9.68	0.21	14.24	8.63	0.63	0.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.62	0.18	0.75	0.41	0.44	0.94	0.32	0.92	0.85	0.49	0.33
d, Delay for Lane Group [s/veh]	71.98	26.27	19.24	67.13	25.66	27.32	64.11	38.62	60.77	68.41	48.54	47.16
Lane Group LOS	E	C	B	E	C	C	E	D	E	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.38	10.78	2.17	2.21	6.15	6.13	7.98	3.51	12.43	3.27	4.19	2.45
50th-Percentile Queue Length [ft/ln]	134.62	269.52	54.24	55.37	153.71	153.29	199.51	87.83	310.73	81.81	104.65	61.35
95th-Percentile Queue Length [veh/ln]	9.19	16.17	3.91	3.99	10.21	10.19	12.61	6.32	18.21	5.89	7.53	4.42
95th-Percentile Queue Length [ft/ln]	229.77	404.14	97.63	99.66	255.37	254.81	315.33	158.09	455.28	147.26	188.37	110.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	71.98	26.27	19.24	67.13	25.66	27.32	64.11	38.62	60.77	68.41	48.54	47.16
Movement LOS	E	C	B	E	C	C	E	D	E	E	D	D
d_A, Approach Delay [s/veh]	35.36			31.46			56.59			54.96		
Approach LOS	D			C			E			D		
d_I, Intersection Delay [s/veh]	42.77											
Intersection LOS	D											
Intersection V/C	0.657											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	56.31	56.31	56.31	56.31
l_p,int, Pedestrian LOS Score for Intersection	3.206	3.261	2.977	2.816
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	708	615	800	631
d_b, Bicycle Delay [s]	27.14	31.15	23.40	30.47
l_b,int, Bicycle LOS Score for Intersection	2.727	2.393	2.459	2.022
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 4: Sierra Avenue / Sierra Crossroads Access Driveway

Control Type:	Two-way stop	Delay (sec / veh):	117.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.045

Intersection Setup

Name	Sierra Avenue			Sierra Avenue						Si Cr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	165.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			No		

Volumes

Name	Sierra Avenue			Sierra Avenue						Si Cr		
Base Volume Input [veh/h]	0	1284	98	222	929	0	0	0	0	0	0	129
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00	0.00	2.00	2.00	0.00
Growth Factor	1.0000	1.0400	1.0400	1.0400	1.0400	1.0400	1.0000	1.0000	1.0400	1.0000	1.0000	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	11	0	0	11	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1335	102	231	966	11	0	0	11	0	0	134
Peak Hour Factor	1.0000	0.9640	0.9640	0.9640	0.9640	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.9640
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	346	26	60	251	3	0	0	3	0	0	35
Total Analysis Volume [veh/h]	0	1385	106	240	1002	11	0	0	11	0	0	139
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	1.05	0.01	0.00	0.00	0.00	0.02	0.00	0.00	0.45
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	117.33	0.00	0.00	0.00	0.00	13.36	0.00	0.00	25.80
Movement LOS		A	A	F	A	A			B			D
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	10.16	0.00	0.00	0.00	0.00	0.08	0.00	0.00	2.22
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	253.95	0.00	0.00	0.00	0.00	1.91	0.00	0.00	55.45
d_A, Approach Delay [s/veh]	0.00			22.47			13.36			25.80		
Approach LOS	A			C			B			D		
d_I, Intersection Delay [s/veh]	11.02											
Intersection LOS	F											

Fontana Southridge

Vistro File: C:\...\RCA20001 Analysis.vistro
Report File: C:\...\OY AM_v2.pdf

Scenario 5 Opening Year AM
11/24/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Avenue / Santa Ana Avenue	Signalized	HCM 6th Edition	WB Left	0.486	21.8	C
2	Sierra Avenue / Under Wood Drive	Signalized	HCM 6th Edition	SB Left	0.513	11.9	B
3	Sierra Avenue / Jurupa Avenue	Signalized	HCM 6th Edition	SB Left	0.598	39.4	D
4	Sierra Avenue / Sierra Crossroads Access Driveway	Two-way stop	HCM 6th Edition	SB Left	0.706	46.8	E

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Avenue / Santa Ana Avenue

Control Type:	Signalized	Delay (sec / veh):	21.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.486

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Santa Ana Avenue			Santa Ana Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	195.00	100.00	210.00	314.00	100.00	100.00	221.00	100.00	67.00	255.00	100.00	250.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sierra Avenue			Sierra Avenue			Santa Ana Avenue			Santa Ana Avenue		
Base Volume Input [veh/h]	136	1222	36	59	686	67	103	61	43	48	79	93
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	79	79	14	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	144	1295	38	63	806	150	123	65	46	51	84	99
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	350	10	17	218	40	33	18	12	14	23	27
Total Analysis Volume [veh/h]	156	1398	41	68	870	162	133	70	50	55	91	107
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	9	38	0	17	46	0	16	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	29	0	0	37	0	0	36	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	69	69	4	67	67	11	16	16	5	10	10
g / C, Green / Cycle	0.05	0.62	0.62	0.04	0.61	0.61	0.10	0.15	0.15	0.04	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.05	0.30	0.03	0.02	0.21	0.21	0.08	0.02	0.03	0.03	0.03	0.07
s, saturation flow rate [veh/h]	3163	4658	1454	3163	3256	1577	1629	3256	1454	1629	3256	1454
c, Capacity [veh/h]	175	2895	903	129	1976	957	160	486	217	70	308	138
d1, Uniform Delay [s]	51.67	11.27	8.12	51.77	10.82	10.83	48.78	40.71	41.26	52.16	46.43	48.71
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.12	0.58	0.09	3.33	0.49	1.02	10.69	0.13	0.54	16.86	0.53	9.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.89	0.48	0.05	0.53	0.35	0.35	0.83	0.14	0.23	0.78	0.30	0.78
d, Delay for Lane Group [s/veh]	65.80	11.85	8.21	55.10	11.31	11.86	59.47	40.85	41.79	69.01	46.95	57.81
Lane Group LOS	E	B	A	E	B	B	E	D	D	E	D	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.40	5.31	0.35	0.95	3.75	3.80	3.99	0.82	1.21	1.81	1.16	3.16
50th-Percentile Queue Length [ft/ln]	60.06	132.83	8.77	23.68	93.78	94.88	99.64	20.50	30.16	45.13	29.06	79.00
95th-Percentile Queue Length [veh/ln]	4.32	9.09	0.63	1.70	6.75	6.83	7.17	1.48	2.17	3.25	2.09	5.69
95th-Percentile Queue Length [ft/ln]	108.11	227.34	15.78	42.62	168.81	170.78	179.36	36.91	54.29	81.24	52.31	142.20

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	65.80	11.85	8.21	55.10	11.42	11.86	59.47	40.85	41.79	69.01	46.95	57.81
Movement LOS	E	B	A	E	B	B	E	D	D	E	D	E
d_A, Approach Delay [s/veh]	17.04			14.19			50.82			56.34		
Approach LOS	B			B			D			E		
d_I, Intersection Delay [s/veh]	21.83											
Intersection LOS	C											
Intersection V/C	0.486											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	3.324	3.293	2.607	2.558
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	636	618	764	745
d_b, Bicycle Delay [s]	25.57	26.25	21.02	21.64
l_b,int, Bicycle LOS Score for Intersection	2.437	2.165	1.768	1.768
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Sierra Avenue / Under Wood Drive

Control Type:	Signalized	Delay (sec / veh):	11.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.513

Intersection Setup

Name	Sierra Avenue		Sierra Avenue		Under Wood Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	200.00	210.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Sierra Avenue		Sierra Avenue		Under Wood Drive	
Base Volume Input [veh/h]	1226	11	103	667	44	164
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	79	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1300	12	109	786	47	174
Peak Hour Factor	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	349	3	29	211	13	47
Total Analysis Volume [veh/h]	1396	13	117	844	50	187
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal Group	6	0	5	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	0	5	10	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	24	0	14	38	42	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	15	0	0	10	33	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	48	48	7	60	13	13
g / C, Green / Cycle	0.60	0.60	0.09	0.74	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.30	0.01	0.07	0.26	0.03	0.13
s, saturation flow rate [veh/h]	4658	1454	1629	3256	1629	1454
c, Capacity [veh/h]	2810	877	147	2420	256	228
d1, Uniform Delay [s]	9.00	6.36	35.72	3.56	29.37	32.67
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.63	0.03	9.49	0.40	0.37	7.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.01	0.80	0.35	0.20	0.82
d, Delay for Lane Group [s/veh]	9.63	6.39	45.21	3.96	29.74	39.81
Lane Group LOS	A	A	D	A	C	D
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.49	0.07	2.46	1.22	0.83	3.81
50th-Percentile Queue Length [ft/ln]	87.33	1.83	61.50	30.53	20.83	95.24
95th-Percentile Queue Length [veh/ln]	6.29	0.13	4.43	2.20	1.50	6.86
95th-Percentile Queue Length [ft/ln]	157.19	3.30	110.71	54.96	37.49	171.44

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.63	6.39	45.21	3.96	29.74	39.81
Movement LOS	A	A	D	A	C	D
d_A, Approach Delay [s/veh]	9.60		8.98		37.68	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	11.93					
Intersection LOS	B					
Intersection V/C	0.513					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	31.51	31.51
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.138	2.231
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	850	950
d_b, Bicycle Delay [s]	22.50	13.23	11.03
l_b,int, Bicycle LOS Score for Intersection	2.335	2.352	1.560
Bicycle LOS	B	B	A

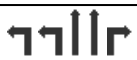
Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: Sierra Avenue / Jurupa Avenue

Control Type:	Signalized	Delay (sec / veh):	39.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.598

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Jurupa Avenue			Jurupa Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	600.00	100.00	600.00	300.00	100.00	144.00	288.00	100.00	288.00	213.00	100.00	223.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sierra Avenue			Sierra Avenue			Jurupa Avenue			Jurupa Avenue		
Base Volume Input [veh/h]	339	865	41	45	375	144	258	57	243	121	165	88
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	79	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	359	917	43	48	398	232	273	60	258	128	175	93
Peak Hour Factor	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	103	262	12	14	114	66	78	17	74	37	50	27
Total Analysis Volume [veh/h]	411	1049	49	55	455	265	312	69	295	146	200	106
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	57	0	9	44	0	19	47	0	17	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	35	0	0	32	0	0	36	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	73	73	4	59	59	15	29	29	8	22	22
g / C, Green / Cycle	0.14	0.56	0.56	0.03	0.46	0.46	0.11	0.22	0.22	0.06	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.13	0.32	0.03	0.02	0.14	0.18	0.10	0.02	0.20	0.05	0.06	0.07
s, saturation flow rate [veh/h]	3163	3256	1454	3163	3256	1454	3163	3256	1454	3163	3256	1454
c, Capacity [veh/h]	439	1824	814	107	1482	662	358	719	321	196	553	247
d1, Uniform Delay [s]	55.42	18.55	13.02	61.74	22.42	23.59	56.74	40.34	49.53	59.96	47.75	48.34
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.13	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.72	1.33	0.14	3.74	0.54	1.80	6.66	0.06	12.50	5.48	0.40	1.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.58	0.06	0.51	0.31	0.40	0.87	0.10	0.92	0.74	0.36	0.43
d, Delay for Lane Group [s/veh]	65.14	19.88	13.16	65.48	22.96	25.39	63.39	40.39	62.03	65.43	48.15	49.52
Lane Group LOS	E	B	B	E	C	C	E	D	E	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.04	9.67	0.64	0.93	4.31	5.47	5.30	0.88	10.30	2.49	2.87	3.13
50th-Percentile Queue Length [ft/ln]	176.11	241.84	16.10	23.16	107.63	136.80	132.44	22.00	257.38	62.17	71.76	78.21
95th-Percentile Queue Length [veh/ln]	11.40	14.77	1.16	1.67	7.71	9.31	9.07	1.58	15.56	4.48	5.17	5.63
95th-Percentile Queue Length [ft/ln]	284.93	369.36	28.98	41.69	192.70	232.71	226.81	39.61	388.93	111.91	129.16	140.78

Movement, Approach, & Intersection Results

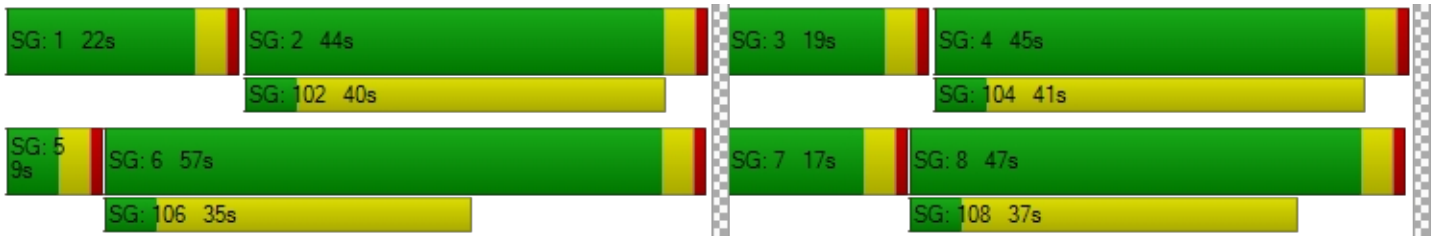
d_M, Delay for Movement [s/veh]	65.14	19.88	13.16	65.48	22.96	25.39	63.39	40.39	62.03	65.43	48.15	49.52
Movement LOS	E	B	B	E	C	C	E	D	E	E	D	D
d_A, Approach Delay [s/veh]	31.99			26.81			60.45			54.05		
Approach LOS	C			C			E			D		
d_I, Intersection Delay [s/veh]	39.37											
Intersection LOS	D											
Intersection V/C	0.598											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	56.31	56.31	56.31	56.31
l_p,int, Pedestrian LOS Score for Intersection	3.171	3.200	2.901	2.729
Crosswalk LOS	C	C	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	815	615	662	631
d_b, Bicycle Delay [s]	22.80	31.15	29.11	30.47
l_b,int, Bicycle LOS Score for Intersection	2.805	2.199	2.117	1.933
Bicycle LOS	C	B	B	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 4: Sierra Avenue / Sierra Crossroads Access Driveway

Control Type:	Two-way stop	Delay (sec / veh):	46.8
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.706

Intersection Setup

Name	Sierra Avenue		Sierra Avenue		Sierra Crossroads Access Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	165.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00		50.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sierra Avenue		Sierra Avenue		Sierra Crossroads Access Driveway	
Base Volume Input [veh/h]	1130	36	153	558	0	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	2.00	0.00
Growth Factor	1.0600	1.0600	1.0600	1.0600	1.0000	1.0600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	79	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1198	38	162	670	0	107
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	1.0000	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	337	11	46	188	0	30
Total Analysis Volume [veh/h]	1346	43	182	753	0	120
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.71	0.01	0.00	0.36
d_M, Delay for Movement [s/veh]	0.00	0.00	46.76	0.00	0.00	21.71
Movement LOS	A	A	E	A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	4.79	0.00	0.00	1.59
95th-Percentile Queue Length [ft/ln]	0.00	0.00	119.78	0.00	0.00	39.72
d_A, Approach Delay [s/veh]	0.00		9.10		21.71	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	4.55					
Intersection LOS	E					

Fontana Southridge

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Report File: C:\...\OY PM_v2.pdf

Scenario 6 Opening Year PM
11/24/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Avenue / Santa Ana Avenue	Signalized	HCM 6th Edition	WB Left	0.586	29.7	C
2	Sierra Avenue / Under Wood Drive	Signalized	HCM 6th Edition	SB Left	0.630	16.1	B
3	Sierra Avenue / Jurupa Avenue	Signalized	HCM 6th Edition	NB Left	0.670	43.6	D
4	Sierra Avenue / Sierra Crossroads Access Driveway	Two-way stop	HCM 6th Edition	SB Left	1.098	135.4	F

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Avenue / Santa Ana Avenue

Control Type:	Signalized	Delay (sec / veh):	29.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.586

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Santa Ana Avenue			Santa Ana Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	195.00	100.00	210.00	314.00	100.00	100.00	221.00	100.00	67.00	255.00	100.00	250.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sierra Avenue			Sierra Avenue			Santa Ana Avenue			Santa Ana Avenue		
Base Volume Input [veh/h]	176	1332	49	113	1130	96	161	139	117	93	112	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	31	31	50	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	187	1412	52	120	1229	133	221	147	124	99	119	107
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	369	14	31	321	35	58	38	32	26	31	28
Total Analysis Volume [veh/h]	196	1477	54	126	1286	139	231	154	130	104	124	112
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	41	0	10	38	0	23	46	0	23	46	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	29	0	0	37	0	0	36	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	68	68	6	65	65	19	21	21	9	12	12
g / C, Green / Cycle	0.08	0.56	0.56	0.05	0.54	0.54	0.16	0.17	0.17	0.08	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.06	0.32	0.04	0.04	0.29	0.29	0.14	0.05	0.09	0.06	0.04	0.08
s, saturation flow rate [veh/h]	3163	4658	1454	3163	3256	1626	1629	3256	1454	1629	3256	1454
c, Capacity [veh/h]	239	2621	818	161	1751	874	255	569	254	128	315	141
d1, Uniform Delay [s]	54.68	16.82	11.93	56.34	18.12	18.12	49.76	42.91	44.89	54.44	50.91	53.06
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.13	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.80	0.88	0.16	8.16	1.21	2.42	13.68	0.25	1.59	11.58	0.80	9.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.56	0.07	0.78	0.54	0.54	0.91	0.27	0.51	0.81	0.39	0.80
d, Delay for Lane Group [s/veh]	61.48	17.70	12.08	64.49	19.33	20.54	63.44	43.16	46.49	66.02	51.71	62.81
Lane Group LOS	E	B	B	E	B	C	E	D	D	E	D	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.05	7.98	0.64	2.01	8.08	8.36	7.64	1.97	3.56	3.45	1.76	3.63
50th-Percentile Queue Length [ft/ln]	76.27	199.38	15.98	50.26	201.92	209.04	191.05	49.36	89.12	86.37	44.03	90.79
95th-Percentile Queue Length [veh/ln]	5.49	12.61	1.15	3.62	12.74	13.10	12.18	3.55	6.42	6.22	3.17	6.54
95th-Percentile Queue Length [ft/ln]	137.28	315.17	28.76	90.47	318.44	327.60	304.39	88.85	160.41	155.47	79.26	163.42

Movement, Approach, & Intersection Results

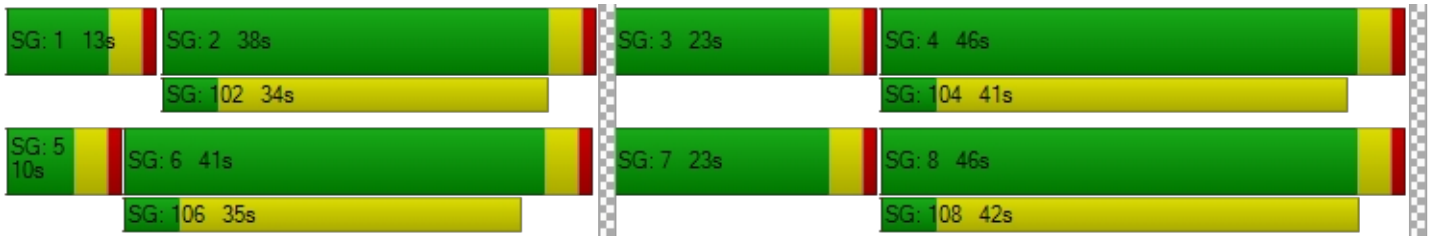
d_M, Delay for Movement [s/veh]	61.48	17.70	12.08	64.49	19.65	20.54	63.44	43.16	46.49	66.02	51.71	62.81
Movement LOS	E	B	B	E	B	C	E	D	D	E	D	E
d_A, Approach Delay [s/veh]	22.49			23.37			53.10			59.74		
Approach LOS	C			C			D			E		
d_I, Intersection Delay [s/veh]	29.70											
Intersection LOS	C											
Intersection V/C	0.586											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	3.451	3.425	2.679	2.614
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	567	700	700
d_b, Bicycle Delay [s]	28.70	30.82	25.35	25.35
l_b,int, Bicycle LOS Score for Intersection	2.509	2.413	1.984	1.840
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sierra Avenue / Under Wood Drive

Control Type:	Signalized	Delay (sec / veh):	16.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name	Sierra Avenue		Sierra Avenue		Under Wood Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	200.00	210.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Sierra Avenue		Sierra Avenue		Under Wood Drive	
Base Volume Input [veh/h]	1368	66	226	1105	60	182
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	31	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1450	70	240	1202	64	193
Peak Hour Factor	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	378	18	63	313	17	50
Total Analysis Volume [veh/h]	1512	73	250	1253	67	201
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal Group	6	0	5	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	0	5	10	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	24	0	24	48	42	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	15	0	0	10	33	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	48	48	16	67	15	15
g / C, Green / Cycle	0.53	0.53	0.17	0.75	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.32	0.05	0.15	0.38	0.04	0.14
s, saturation flow rate [veh/h]	4658	1454	1629	3256	1629	1454
c, Capacity [veh/h]	2460	768	285	2433	267	238
d1, Uniform Delay [s]	14.85	10.56	36.23	4.68	32.82	36.52
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.16	0.25	8.56	0.78	0.49	7.90
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.61	0.10	0.88	0.52	0.25	0.84
d, Delay for Lane Group [s/veh]	16.01	10.80	44.79	5.46	33.31	44.42
Lane Group LOS	B	B	D	A	C	D
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	6.23	0.67	5.65	2.84	1.28	4.68
50th-Percentile Queue Length [ft/ln]	155.82	16.68	141.33	70.89	32.00	116.88
95th-Percentile Queue Length [veh/ln]	10.33	1.20	9.55	5.10	2.30	8.22
95th-Percentile Queue Length [ft/ln]	258.18	30.03	238.81	127.60	57.60	205.53

Movement, Approach, & Intersection Results

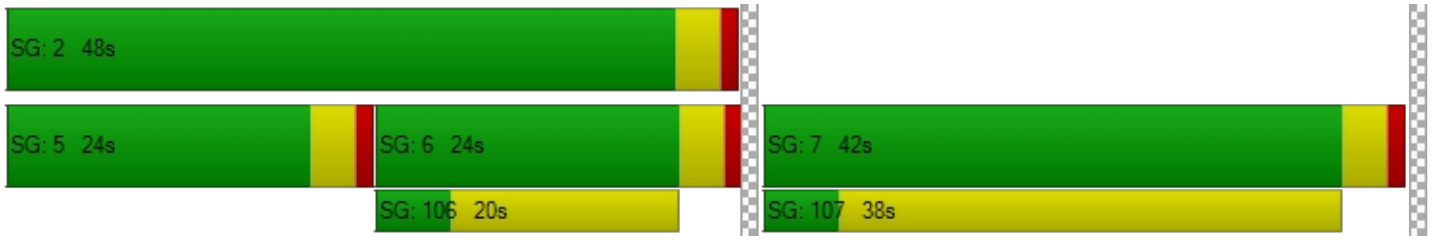
d_M, Delay for Movement [s/veh]	16.01	10.80	44.79	5.46	33.31	44.42
Movement LOS	B	B	D	A	C	D
d_A, Approach Delay [s/veh]	15.77		12.00		41.64	
Approach LOS	B		B		D	
d_I, Intersection Delay [s/veh]	16.15					
Intersection LOS	B					
Intersection V/C	0.630					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.325	2.301
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	978	844
d_b, Bicycle Delay [s]	27.22	11.76	15.02
l_b,int, Bicycle LOS Score for Intersection	2.431	2.800	1.560
Bicycle LOS	B	C	A

Sequence

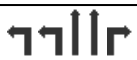
Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Sierra Avenue / Jurupa Avenue

Control Type:	Signalized	Delay (sec / veh):	43.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.670

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Jurupa Avenue			Jurupa Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	600.00	100.00	600.00	300.00	100.00	144.00	288.00	100.00	288.00	213.00	100.00	223.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sierra Avenue			Sierra Avenue			Jurupa Avenue			Jurupa Avenue		
Base Volume Input [veh/h]	280	916	119	121	555	253	428	256	330	174	267	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	31	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	297	971	126	128	588	299	454	271	350	184	283	85
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	251	33	33	152	77	117	70	90	48	73	22
Total Analysis Volume [veh/h]	307	1004	130	132	608	309	469	280	362	190	293	88
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	50	0	11	44	0	24	56	0	13	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	35	0	0	32	0	0	36	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	63	63	7	57	57	20	35	35	9	24	24
g / C, Green / Cycle	0.10	0.48	0.48	0.05	0.44	0.44	0.15	0.27	0.27	0.07	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.10	0.31	0.09	0.04	0.19	0.21	0.15	0.09	0.25	0.06	0.09	0.06
s, saturation flow rate [veh/h]	3163	3256	1454	3163	3256	1454	3163	3256	1454	3163	3256	1454
c, Capacity [veh/h]	318	1573	702	172	1424	636	487	877	392	221	603	269
d1, Uniform Delay [s]	58.26	25.10	19.07	60.65	25.32	26.15	54.62	37.97	46.22	59.84	47.44	45.96
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.19	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.64	1.99	0.58	6.91	0.94	2.65	11.93	0.21	14.75	9.41	0.61	0.70
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.97	0.64	0.19	0.77	0.43	0.49	0.96	0.32	0.92	0.86	0.49	0.33
d, Delay for Lane Group [s/veh]	74.90	27.10	19.65	67.56	26.26	28.80	66.55	38.18	60.96	69.26	48.05	46.66
Lane Group LOS	E	C	B	E	C	C	E	D	E	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.61	11.21	2.23	2.26	6.36	6.95	8.30	3.56	12.71	3.35	4.25	2.50
50th-Percentile Queue Length [ft/ln]	140.34	280.32	55.83	56.42	158.95	173.69	207.53	88.89	317.86	83.69	106.31	62.43
95th-Percentile Queue Length [veh/ln]	9.50	16.70	4.02	4.06	10.49	11.27	13.03	6.40	18.56	6.03	7.63	4.49
95th-Percentile Queue Length [ft/ln]	237.49	417.61	100.50	101.56	262.33	281.75	325.66	160.01	464.06	150.65	190.86	112.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	74.90	27.10	19.65	67.56	26.26	28.80	66.55	38.18	60.96	69.26	48.05	46.66
Movement LOS	E	C	B	E	C	C	E	D	E	E	D	D
d_A, Approach Delay [s/veh]	36.61			32.20			57.58			54.89		
Approach LOS	D			C			E			D		
d_I, Intersection Delay [s/veh]	43.59											
Intersection LOS	D											
Intersection V/C	0.670											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	56.31	56.31	56.31	56.31
l_p,int, Pedestrian LOS Score for Intersection	3.217	3.275	2.988	2.820
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	708	615	800	631
d_b, Bicycle Delay [s]	27.14	31.15	23.40	30.47
l_b,int, Bicycle LOS Score for Intersection	2.748	2.425	2.476	2.031
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 4: Sierra Avenue / Sierra Crossroads Access Driveway

Control Type:	Two-way stop	Delay (sec / veh):	135.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.098

Intersection Setup

Name	Sierra Avenue		Sierra Avenue		Sierra Crossroads Access Driveway	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	165.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00		50.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sierra Avenue		Sierra Avenue		Sierra Crossroads Access Driveway	
Base Volume Input [veh/h]	1284	98	222	929	0	129
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	2.00	0.00
Growth Factor	1.0600	1.0600	1.0600	1.0600	1.0000	1.0600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	31	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1361	104	235	1016	0	137
Peak Hour Factor	0.9640	0.9640	0.9640	0.9640	1.0000	0.9640
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	353	27	61	263	0	36
Total Analysis Volume [veh/h]	1412	108	244	1054	0	142
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	1.10	0.01	0.00	0.47
d_M, Delay for Movement [s/veh]	0.00	0.00	135.44	0.00	0.00	26.99
Movement LOS	A	A	F	A		D
95th-Percentile Queue Length [veh/ln]	0.00	0.00	11.02	0.00	0.00	2.37
95th-Percentile Queue Length [ft/ln]	0.00	0.00	275.62	0.00	0.00	59.31
d_A, Approach Delay [s/veh]	0.00		25.46		26.99	
Approach LOS	A		D		D	
d_I, Intersection Delay [s/veh]	12.46					
Intersection LOS	F					

Fontana Southridge

Vistro File: C:\...\RCA20001 Analysis.vistro
Report File: C:\...\OYP AM_v2.pdf

Scenario 7 Opening Year With Project AM
11/24/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Avenue / Santa Ana Avenue	Signalized	HCM 6th Edition	NB Left	0.489	22.4	C
2	Sierra Avenue / Under Wood Drive	Signalized	HCM 6th Edition	SB Left	0.521	12.0	B
3	Sierra Avenue / Jurupa Avenue	Signalized	HCM 6th Edition	SB Left	0.599	39.4	D
4	Sierra Avenue / Sierra Crossroads Access Driveway	Signalized	HCM 6th Edition	NB Left	0.484	12.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Avenue / Santa Ana Avenue

Control Type:	Signalized	Delay (sec / veh):	22.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.489

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Santa Ana Avenue			Santa Ana Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	195.00	100.00	210.00	314.00	100.00	100.00	221.00	100.00	67.00	255.00	100.00	250.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sierra Avenue			Sierra Avenue			Santa Ana Avenue			Santa Ana Avenue		
Base Volume Input [veh/h]	136	1222	36	59	686	67	103	61	43	48	79	93
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	15	6	0	84	79	14	0	0	2	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	155	1310	44	63	811	150	123	65	46	53	84	99
Peak Hour Factor	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260	0.9260
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	354	12	17	219	40	33	18	12	14	23	27
Total Analysis Volume [veh/h]	167	1415	48	68	876	162	133	70	50	57	91	107
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	10	39	0	9	38	0	14	46	0	16	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	29	0	0	37	0	0	36	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	6	69	69	4	68	68	10	16	16	5	10	10
g / C, Green / Cycle	0.05	0.63	0.63	0.04	0.61	0.61	0.09	0.14	0.14	0.04	0.09	0.09
(v / s)_i Volume / Saturation Flow Rate	0.05	0.30	0.03	0.02	0.21	0.22	0.08	0.02	0.03	0.04	0.03	0.07
s, saturation flow rate [veh/h]	3163	4658	1454	3163	3256	1577	1629	3256	1454	1629	3256	1454
c, Capacity [veh/h]	175	2924	913	129	1996	967	149	460	205	73	308	138
d1, Uniform Delay [s]	51.86	10.95	7.89	51.77	10.49	10.50	49.47	41.48	42.03	52.05	46.42	48.71
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	22.23	0.58	0.11	3.33	0.48	1.00	16.19	0.15	0.61	16.34	0.53	9.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.48	0.05	0.53	0.35	0.35	0.89	0.15	0.24	0.78	0.30	0.78
d, Delay for Lane Group [s/veh]	74.09	11.53	8.00	55.10	10.97	11.50	65.66	41.63	42.64	68.40	46.95	57.80
Lane Group LOS	E	B	A	E	B	B	E	D	D	E	D	E
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.75	5.27	0.40	0.95	3.69	3.74	4.21	0.83	1.22	1.86	1.16	3.16
50th-Percentile Queue Length [ft/ln]	68.82	131.80	10.07	23.68	92.25	93.38	105.26	20.73	30.53	46.49	29.06	78.99
95th-Percentile Queue Length [veh/ln]	4.96	9.04	0.72	1.70	6.64	6.72	7.58	1.49	2.20	3.35	2.09	5.69
95th-Percentile Queue Length [ft/ln]	123.88	225.94	18.12	42.62	166.06	168.09	189.39	37.32	54.96	83.68	52.31	142.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	74.09	11.53	8.00	55.10	11.08	11.50	65.66	41.63	42.64	68.40	46.95	57.80
Movement LOS	E	B	A	E	B	B	E	D	D	E	D	E
d_A, Approach Delay [s/veh]	17.83			13.85			54.46			56.30		
Approach LOS	B			B			D			E		
d_I, Intersection Delay [s/veh]	22.35											
Intersection LOS	C											
Intersection V/C	0.489											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	46.37	46.37	46.37	46.37
l_p,int, Pedestrian LOS Score for Intersection	3.332	3.297	2.610	2.560
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	636	618	764	800
d_b, Bicycle Delay [s]	25.57	26.25	21.02	19.80
l_b,int, Bicycle LOS Score for Intersection	2.456	2.168	1.768	1.770
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 2: Sierra Avenue / Under Wood Drive

Control Type:	Signalized	Delay (sec / veh):	12.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.521

Intersection Setup

Name	Sierra Avenue		Sierra Avenue		Under Wood Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	200.00	210.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Sierra Avenue		Sierra Avenue		Under Wood Drive	
Base Volume Input [veh/h]	1226	11	103	667	44	164
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	32	3	0	86	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1332	15	109	793	48	174
Peak Hour Factor	0.9310	0.9310	0.9310	0.9310	0.9310	0.9310
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	358	4	29	213	13	47
Total Analysis Volume [veh/h]	1431	16	117	852	52	187
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal Group	6	0	5	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	0	5	10	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	24	0	14	38	42	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	15	0	0	10	33	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	48	48	7	60	13	13
g / C, Green / Cycle	0.60	0.60	0.09	0.74	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.31	0.01	0.07	0.26	0.03	0.13
s, saturation flow rate [veh/h]	4658	1454	1629	3256	1629	1454
c, Capacity [veh/h]	2810	877	147	2420	256	228
d1, Uniform Delay [s]	9.10	6.38	35.72	3.58	29.40	32.66
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.66	0.04	9.49	0.40	0.39	7.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	0.02	0.80	0.35	0.20	0.82
d, Delay for Lane Group [s/veh]	9.77	6.41	45.21	3.98	29.79	39.78
Lane Group LOS	A	A	D	A	C	D
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.62	0.09	2.46	1.24	0.87	3.81
50th-Percentile Queue Length [ft/ln]	90.58	2.26	61.50	30.96	21.69	95.21
95th-Percentile Queue Length [veh/ln]	6.52	0.16	4.43	2.23	1.56	6.85
95th-Percentile Queue Length [ft/ln]	163.04	4.07	110.71	55.72	39.05	171.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.77	6.41	45.21	3.98	29.79	39.78
Movement LOS	A	A	D	A	C	D
d_A, Approach Delay [s/veh]	9.73		8.96		37.61	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	11.96					
Intersection LOS	B					
Intersection V/C	0.521					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	31.51	31.51
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.149	2.233
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	500	850	950
d_b, Bicycle Delay [s]	22.50	13.23	11.03
l_b,int, Bicycle LOS Score for Intersection	2.355	2.359	1.560
Bicycle LOS	B	B	A

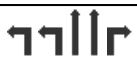
Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 3: Sierra Avenue / Jurupa Avenue

Control Type:	Signalized	Delay (sec / veh):	39.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.599

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Jurupa Avenue			Jurupa Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	600.00	100.00	600.00	300.00	100.00	144.00	288.00	100.00	288.00	213.00	100.00	223.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sierra Avenue			Sierra Avenue			Jurupa Avenue			Jurupa Avenue		
Base Volume Input [veh/h]	339	865	41	45	375	144	258	57	243	121	165	88
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	0	3	6	87	3	0	0	0	0	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	359	919	43	51	404	240	276	60	258	128	175	89
Peak Hour Factor	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740	0.8740
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	103	263	12	15	116	69	79	17	74	37	50	25
Total Analysis Volume [veh/h]	411	1051	49	58	462	275	316	69	295	146	200	102
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	57	0	9	44	0	19	49	0	15	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	35	0	0	32	0	0	36	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	73	73	4	59	59	15	29	29	8	22	22
g / C, Green / Cycle	0.14	0.56	0.56	0.03	0.46	0.46	0.11	0.22	0.22	0.06	0.17	0.17
(v / s)_i Volume / Saturation Flow Rate	0.13	0.32	0.03	0.02	0.14	0.19	0.10	0.02	0.20	0.05	0.06	0.07
s, saturation flow rate [veh/h]	3163	3256	1454	3163	3256	1454	3163	3256	1454	3163	3256	1454
c, Capacity [veh/h]	439	1823	814	109	1484	662	361	719	321	195	548	245
d1, Uniform Delay [s]	55.42	18.59	13.03	61.74	22.45	23.76	56.67	40.34	49.53	60.00	47.92	48.37
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.13	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.72	1.33	0.14	3.97	0.55	1.92	6.72	0.06	12.47	5.62	0.41	1.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.58	0.06	0.53	0.31	0.42	0.87	0.10	0.92	0.75	0.37	0.42
d, Delay for Lane Group [s/veh]	65.14	19.92	13.17	65.70	22.99	25.67	63.39	40.39	62.00	65.62	48.33	49.50
Lane Group LOS	E	B	B	E	C	C	E	D	E	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	7.04	9.71	0.64	0.98	4.38	5.73	5.37	0.88	10.29	2.49	2.88	3.01
50th-Percentile Queue Length [ft/ln]	176.11	242.67	16.11	24.46	109.48	143.19	134.19	22.00	257.31	62.28	71.91	75.16
95th-Percentile Queue Length [veh/ln]	11.40	14.82	1.16	1.76	7.81	9.65	9.17	1.58	15.55	4.48	5.18	5.41
95th-Percentile Queue Length [ft/ln]	284.93	370.41	28.99	44.04	195.28	241.31	229.18	39.60	388.85	112.10	129.44	135.30

Movement, Approach, & Intersection Results

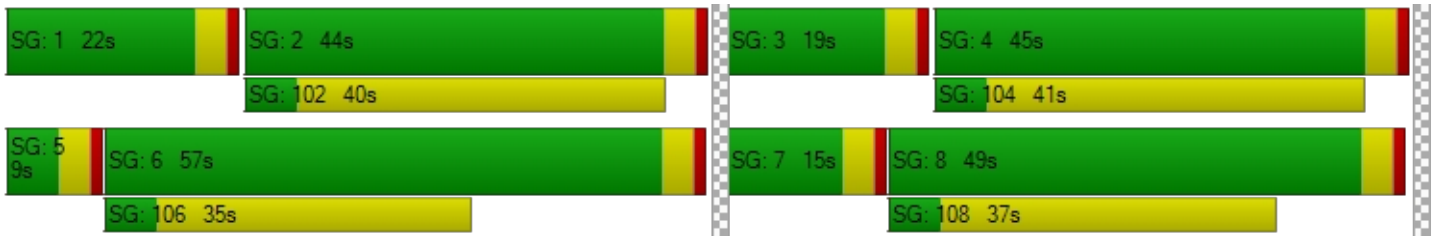
d_M, Delay for Movement [s/veh]	65.14	19.92	13.17	65.70	22.99	25.67	63.39	40.39	62.00	65.62	48.33	49.50
Movement LOS	E	B	B	E	C	C	E	D	E	E	D	D
d_A, Approach Delay [s/veh]	32.00			27.04			60.45			54.23		
Approach LOS	C			C			E			D		
d_I, Intersection Delay [s/veh]	39.39											
Intersection LOS	D											
Intersection V/C	0.599											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	56.31	56.31	56.31	56.31
l_p,int, Pedestrian LOS Score for Intersection	3.173	3.204	2.904	2.729
Crosswalk LOS	C	C	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	815	615	692	631
d_b, Bicycle Delay [s]	22.80	31.15	27.79	30.47
l_b,int, Bicycle LOS Score for Intersection	2.806	2.215	2.121	1.929
Bicycle LOS	C	B	B	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report

Intersection 4: Sierra Avenue / Sierra Crossroads Access Driveway

Control Type:	Signalized	Delay (sec / veh):	12.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.484

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Si Cr			Si Cr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	175.00	100.00	100.00	165.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Sierra Avenue			Sierra Avenue			Si Cr			Si Cr		
Base Volume Input [veh/h]	0	1130	36	153	558	0	0	0	0	9	0	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
Growth Factor	1.0000	1.0600	1.0600	1.0600	1.0600	1.0600	1.0000	1.0000	1.0600	1.0000	1.0000	1.0600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	0	0	79	8	35	3	17	0	1	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	1198	38	162	670	8	35	3	17	9	1	107
Peak Hour Factor	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900	0.8900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	337	11	46	188	2	10	1	5	3	0	30
Total Analysis Volume [veh/h]	7	1346	43	182	753	9	39	3	19	10	1	120
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	10	0	5	10	0	0	10	0	0	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	24	32	0	14	22	0	0	14	0	0	14	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	60	60	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	31	31	8	39	39	9	9
g / C, Green / Cycle	0.01	0.51	0.51	0.14	0.64	0.64	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.00	0.28	0.28	0.11	0.22	0.22	0.05	0.09
s, saturation flow rate [veh/h]	1603	3256	1683	1629	1710	1703	1288	1437
c, Capacity [veh/h]	18	1670	863	225	1094	1089	291	279
d1, Uniform Delay [s]	29.54	9.93	9.93	25.16	5.03	5.03	22.67	23.92
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	13.13	1.30	2.50	6.79	0.88	0.88	0.35	1.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.55	0.55	0.81	0.35	0.35	0.21	0.47
d, Delay for Lane Group [s/veh]	42.67	11.23	12.43	31.94	5.91	5.91	23.03	25.14
Lane Group LOS	D	B	B	C	A	A	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.16	3.05	3.44	2.60	1.35	1.34	0.75	1.73
50th-Percentile Queue Length [ft/ln]	3.88	76.22	86.00	64.94	33.64	33.53	18.73	43.14
95th-Percentile Queue Length [veh/ln]	0.28	5.49	6.19	4.68	2.42	2.41	1.35	3.11
95th-Percentile Queue Length [ft/ln]	6.98	137.19	154.80	116.89	60.56	60.36	33.72	77.65

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	42.67	11.62	12.43	31.94	5.91	5.91	23.03	23.03	23.03	25.14	25.14	25.14
Movement LOS	D	B	B	C	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	11.80			10.93			23.03			25.14		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	12.43											
Intersection LOS	B											
Intersection V/C	0.484											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	933	600	333	333
d_b, Bicycle Delay [s]	8.53	14.70	20.83	20.83
l_b,int, Bicycle LOS Score for Intersection	2.327	2.338	1.660	1.776
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Fontana Southridge

Vistro File: C:\...\RCA20001 Analysis.vistro
Report File: C:\...\OYP PM_v2.pdf

Scenario 8 Opening Year With Project PM
11/24/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sierra Avenue / Santa Ana Avenue	Signalized	HCM 6th Edition	WB Left	0.588	29.9	C
2	Sierra Avenue / Under Wood Drive	Signalized	HCM 6th Edition	SB Left	0.635	16.2	B
3	Sierra Avenue / Jurupa Avenue	Signalized	HCM 6th Edition	NB Left	0.672	44.0	D
4	Sierra Avenue / Sierra Crossroads Access Driveway	Signalized	HCM 6th Edition	NB Left	0.596	15.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sierra Avenue / Santa Ana Avenue

Control Type:	Signalized	Delay (sec / veh):	29.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.588

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Santa Ana Avenue			Santa Ana Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	1	0	0	1	0	1	1	0	1
Entry Pocket Length [ft]	195.00	100.00	210.00	314.00	100.00	100.00	221.00	100.00	67.00	255.00	100.00	250.00
No. of Lanes in Exit Pocket	0	0	1	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sierra Avenue			Sierra Avenue			Santa Ana Avenue			Santa Ana Avenue		
Base Volume Input [veh/h]	176	1332	49	113	1130	96	161	139	117	93	112	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	9	3	0	48	31	50	0	0	6	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	193	1421	55	120	1246	133	221	147	124	105	119	107
Peak Hour Factor	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560	0.9560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	372	14	31	326	35	58	38	32	27	31	28
Total Analysis Volume [veh/h]	202	1486	58	126	1303	139	231	154	130	110	124	112
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	13	41	0	10	38	0	23	46	0	23	46	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	29	0	0	37	0	0	36	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	C	L	C	R	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	68	68	6	65	65	19	20	20	10	12	12
g / C, Green / Cycle	0.08	0.56	0.56	0.05	0.54	0.54	0.16	0.17	0.17	0.08	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.06	0.32	0.04	0.04	0.30	0.30	0.14	0.05	0.09	0.07	0.04	0.08
s, saturation flow rate [veh/h]	3163	4658	1454	3163	3256	1627	1629	3256	1454	1629	3256	1454
c, Capacity [veh/h]	239	2621	818	161	1751	875	255	556	248	135	315	141
d1, Uniform Delay [s]	54.79	16.87	11.96	56.34	18.21	18.21	49.76	43.33	45.33	54.18	50.91	53.06
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.13	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	7.92	0.90	0.17	8.16	1.24	2.48	13.68	0.27	1.71	11.40	0.80	9.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.84	0.57	0.07	0.78	0.55	0.55	0.91	0.28	0.52	0.82	0.39	0.80
d, Delay for Lane Group [s/veh]	62.71	17.76	12.13	64.49	19.45	20.69	63.44	43.59	47.04	65.58	51.71	62.81
Lane Group LOS	E	B	B	E	B	C	E	D	D	E	D	E
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.18	8.05	0.69	2.01	8.21	8.51	7.64	1.99	3.59	3.64	1.76	3.63
50th-Percentile Queue Length [ft/ln]	79.51	201.19	17.21	50.26	205.34	212.78	191.05	49.65	89.73	91.04	44.03	90.79
95th-Percentile Queue Length [veh/ln]	5.72	12.70	1.24	3.62	12.91	13.30	12.18	3.57	6.46	6.55	3.17	6.54
95th-Percentile Queue Length [ft/ln]	143.12	317.50	30.98	90.47	322.84	332.40	304.39	89.36	161.51	163.87	79.26	163.42

Movement, Approach, & Intersection Results

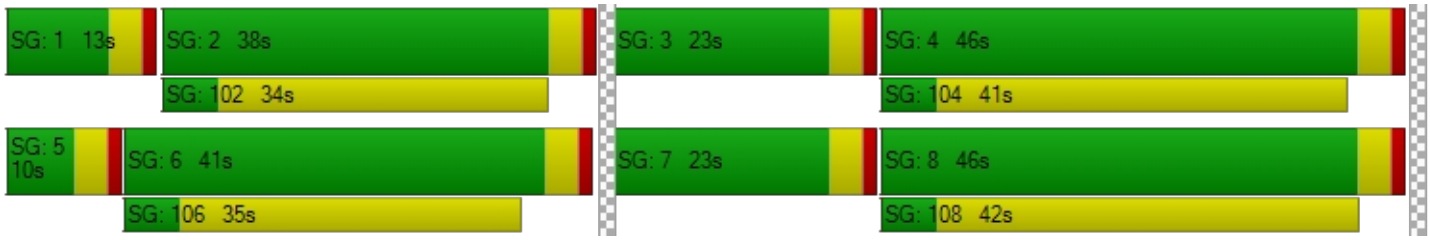
d_M, Delay for Movement [s/veh]	62.71	17.76	12.13	64.49	19.77	20.69	63.44	43.59	47.04	65.58	51.71	62.81
Movement LOS	E	B	B	E	B	C	E	D	D	E	D	E
d_A, Approach Delay [s/veh]	22.77			23.45			53.37			59.71		
Approach LOS	C			C			D			E		
d_I, Intersection Delay [s/veh]	29.86											
Intersection LOS	C											
Intersection V/C	0.588											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	51.34	51.34	51.34	51.34
l_p,int, Pedestrian LOS Score for Intersection	3.458	3.431	2.680	2.616
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	617	567	700	700
d_b, Bicycle Delay [s]	28.70	30.82	25.35	25.35
l_b,int, Bicycle LOS Score for Intersection	2.520	2.422	1.984	1.845
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 2: Sierra Avenue / Under Wood Drive

Control Type:	Signalized	Delay (sec / veh):	16.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.635

Intersection Setup

Name	Sierra Avenue		Sierra Avenue		Under Wood Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	200.00	210.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Sierra Avenue		Sierra Avenue		Under Wood Drive	
Base Volume Input [veh/h]	1368	66	226	1105	60	182
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	18	2	0	54	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1468	72	240	1225	67	193
Peak Hour Factor	0.9590	0.9590	0.9590	0.9590	0.9590	0.9590
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	383	19	63	319	17	50
Total Analysis Volume [veh/h]	1531	75	250	1277	70	201
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal Group	6	0	5	2	7	0
Auxiliary Signal Groups						
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	0	5	10	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	24	0	24	48	42	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	15	0	0	10	33	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	48	48	16	67	15	15
g / C, Green / Cycle	0.53	0.53	0.17	0.75	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.33	0.05	0.15	0.39	0.04	0.14
s, saturation flow rate [veh/h]	4658	1454	1629	3256	1629	1454
c, Capacity [veh/h]	2459	767	285	2432	267	238
d1, Uniform Delay [s]	14.94	10.58	36.23	4.74	32.88	36.51
k, delay calibration	0.50	0.50	0.11	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.20	0.25	8.56	0.81	0.52	7.88
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.62	0.10	0.88	0.52	0.26	0.84
d, Delay for Lane Group [s/veh]	16.14	10.83	44.79	5.55	33.39	44.39
Lane Group LOS	B	B	D	A	C	D
Critical Lane Group	Yes	No	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	6.35	0.69	5.65	2.93	1.34	4.67
50th-Percentile Queue Length [ft/ln]	158.87	17.17	141.33	73.23	33.50	116.84
95th-Percentile Queue Length [veh/ln]	10.49	1.24	9.55	5.27	2.41	8.22
95th-Percentile Queue Length [ft/ln]	262.23	30.91	238.81	131.82	60.31	205.47

Movement, Approach, & Intersection Results

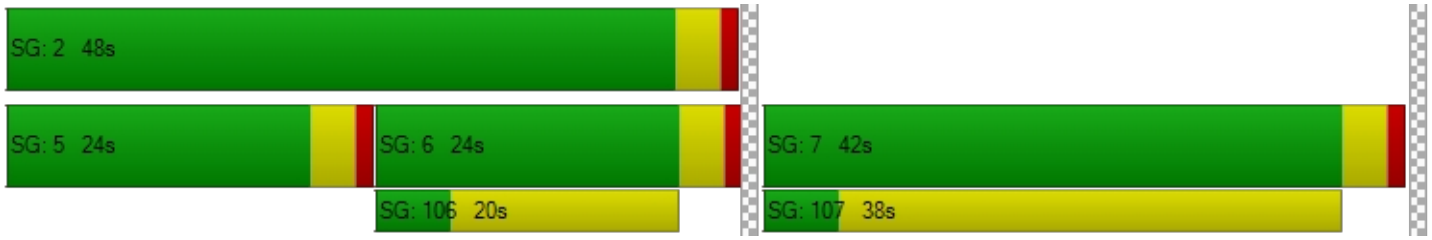
d_M, Delay for Movement [s/veh]	16.14	10.83	44.79	5.55	33.39	44.39
Movement LOS	B	B	D	A	C	D
d_A, Approach Delay [s/veh]	15.89		11.98		41.55	
Approach LOS	B		B		D	
d_I, Intersection Delay [s/veh]	16.18					
Intersection LOS	B					
Intersection V/C	0.635					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	36.45	36.45
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.337	2.302
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	978	844
d_b, Bicycle Delay [s]	27.22	11.76	15.02
l_b,int, Bicycle LOS Score for Intersection	2.443	2.819	1.560
Bicycle LOS	B	C	A

Sequence

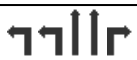
Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 3: Sierra Avenue / Jurupa Avenue

Control Type:	Signalized	Delay (sec / veh):	44.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.672

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Jurupa Avenue			Jurupa Avenue		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	2	0	1	2	0	1	2	0	1	2	0	1
Entry Pocket Length [ft]	600.00	100.00	600.00	300.00	100.00	144.00	288.00	100.00	288.00	213.00	100.00	223.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Sierra Avenue			Sierra Avenue			Jurupa Avenue			Jurupa Avenue		
Base Volume Input [veh/h]	280	916	119	121	555	253	428	256	330	174	267	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600	1.0600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	6	0	2	3	36	8	0	0	0	0	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	297	977	126	130	591	304	462	271	350	184	283	88
Peak Hour Factor	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670	0.9670
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	253	33	34	153	79	119	70	90	48	73	23
Total Analysis Volume [veh/h]	307	1010	130	134	611	314	478	280	362	190	293	91
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	130
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	2.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	17	50	0	11	44	0	24	56	0	13	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	30	0	0	35	0	0	32	0	0	36	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	130	130	130	130	130	130	130	130	130	130	130	130
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	63	63	7	57	57	20	35	35	9	24	24
g / C, Green / Cycle	0.10	0.48	0.48	0.05	0.44	0.44	0.15	0.27	0.27	0.07	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.10	0.31	0.09	0.04	0.19	0.22	0.15	0.09	0.25	0.06	0.09	0.06
s, saturation flow rate [veh/h]	3163	3256	1454	3163	3256	1454	3163	3256	1454	3163	3256	1454
c, Capacity [veh/h]	318	1573	702	172	1424	636	487	877	392	221	603	269
d1, Uniform Delay [s]	58.26	25.17	19.07	60.69	25.35	26.26	54.80	37.97	46.22	59.84	47.44	46.06
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.19	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	16.64	2.03	0.58	7.32	0.95	2.73	14.91	0.21	14.75	9.41	0.61	0.74
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.97	0.64	0.19	0.78	0.43	0.49	0.98	0.32	0.92	0.86	0.49	0.34
d, Delay for Lane Group [s/veh]	74.90	27.20	19.65	68.01	26.29	29.00	69.71	38.18	60.96	69.26	48.05	46.79
Lane Group LOS	E	C	B	E	C	C	E	D	E	E	D	D
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.61	11.31	2.23	2.30	6.40	7.10	8.67	3.56	12.71	3.35	4.25	2.59
50th-Percentile Queue Length [ft/ln]	140.34	282.83	55.83	57.50	159.92	177.40	216.80	88.89	317.86	83.69	106.31	64.72
95th-Percentile Queue Length [veh/ln]	9.50	16.83	4.02	4.14	10.54	11.46	13.50	6.40	18.56	6.03	7.63	4.66
95th-Percentile Queue Length [ft/ln]	237.49	420.74	100.50	103.49	263.62	286.61	337.54	160.01	464.06	150.65	190.86	116.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	74.90	27.20	19.65	68.01	26.29	29.00	69.71	38.18	60.96	69.26	48.05	46.79
Movement LOS	E	C	B	E	C	C	E	D	E	E	D	D
d_A, Approach Delay [s/veh]	36.64			32.37			59.00			54.87		
Approach LOS	D			C			E			D		
d_I, Intersection Delay [s/veh]	44.02											
Intersection LOS	D											
Intersection V/C	0.672											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	56.31	56.31	56.31	56.31
l_p,int, Pedestrian LOS Score for Intersection	3.219	3.280	2.991	2.820
Crosswalk LOS	C	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	708	615	800	631
d_b, Bicycle Delay [s]	27.14	31.15	23.40	30.47
l_b,int, Bicycle LOS Score for Intersection	2.753	2.433	2.484	2.033
Bicycle LOS	C	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report

Intersection 4: Sierra Avenue / Sierra Crossroads Access Driveway

Control Type:	Signalized	Delay (sec / veh):	15.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.596

Intersection Setup

Name	Sierra Avenue			Sierra Avenue			Si Cr			Si Cr		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	165.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	50.00			50.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Sierra Avenue			Sierra Avenue			Si Cr			Si Cr		
Base Volume Input [veh/h]	0	1284	98	222	929	0	0	0	0	50	0	129
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	0.00	0.00	0.00	0.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
Growth Factor	1.0000	1.0600	1.0600	1.0600	1.0600	1.0600	1.0000	1.0000	1.0600	1.0000	1.0000	1.0600
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	0	0	0	31	26	20	2	10	0	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	1361	104	235	1016	26	20	2	10	50	3	137
Peak Hour Factor	1.0000	0.9640	0.9640	0.9640	0.9640	0.9640	1.0000	1.0000	0.9640	1.0000	1.0000	0.9640
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	353	27	61	263	7	5	1	3	13	1	36
Total Analysis Volume [veh/h]	17	1412	108	244	1054	27	20	2	10	50	3	142
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	1	6	0	5	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	5	10	0	5	10	0	0	10	0	0	10	0
Maximum Green [s]	30	30	0	30	30	0	0	30	0	0	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	19	37	0	19	37	0	0	14	0	0	14	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	No	No		No	No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	C	C	C
C, Cycle Length [s]	70	70	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	2.00	2.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	1	36	36	12	47	47	10	10
g / C, Green / Cycle	0.02	0.51	0.51	0.18	0.66	0.66	0.14	0.14
(v / s)_i Volume / Saturation Flow Rate	0.01	0.31	0.31	0.15	0.32	0.32	0.03	0.14
s, saturation flow rate [veh/h]	1603	3256	1649	1629	1710	1695	1099	1430
c, Capacity [veh/h]	35	1658	839	287	1134	1124	241	270
d1, Uniform Delay [s]	33.91	12.24	12.24	28.00	5.82	5.83	26.24	29.66
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.01	1.67	3.28	7.03	1.45	1.46	0.25	3.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.48	0.61	0.61	0.85	0.48	0.48	0.13	0.72
d, Delay for Lane Group [s/veh]	43.92	13.91	15.52	35.03	7.27	7.29	26.48	33.30
Lane Group LOS	D	B	B	D	A	A	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.36	4.58	5.02	4.08	2.63	2.62	0.47	3.38
50th-Percentile Queue Length [ft/ln]	8.99	114.58	125.39	101.93	65.79	65.43	11.67	84.54
95th-Percentile Queue Length [veh/ln]	0.65	8.09	8.69	7.34	4.74	4.71	0.84	6.09
95th-Percentile Queue Length [ft/ln]	16.19	202.36	217.21	183.47	118.42	117.77	21.01	152.17

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	43.92	14.37	15.52	35.03	7.28	7.29	26.48	26.48	26.48	33.30	33.30	33.30
Movement LOS	D	B	B	D	A	A	C	C	C	C	C	C
d_A, Approach Delay [s/veh]	14.78			12.39			26.48			33.30		
Approach LOS	B			B			C			C		
d_I, Intersection Delay [s/veh]	15.04											
Intersection LOS	B											
Intersection V/C	0.596											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	0.0	0.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	0.00	0.00	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	0.000	0.000	0.000
Crosswalk LOS	F	F	F	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	943	943	286	286
d_b, Bicycle Delay [s]	9.78	9.78	25.71	25.71
l_b,int, Bicycle LOS Score for Intersection	2.405	2.653	1.612	1.881
Bicycle LOS	B	B	A	A

Sequence

Ring 1	1	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

APPENDIX E

SIGNAL WARRANT ANALYSIS SHEETS

OYCWP CONDITIONS PEAK HOUR VOLUME WARRANT
RURAL CONDITIONS
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)

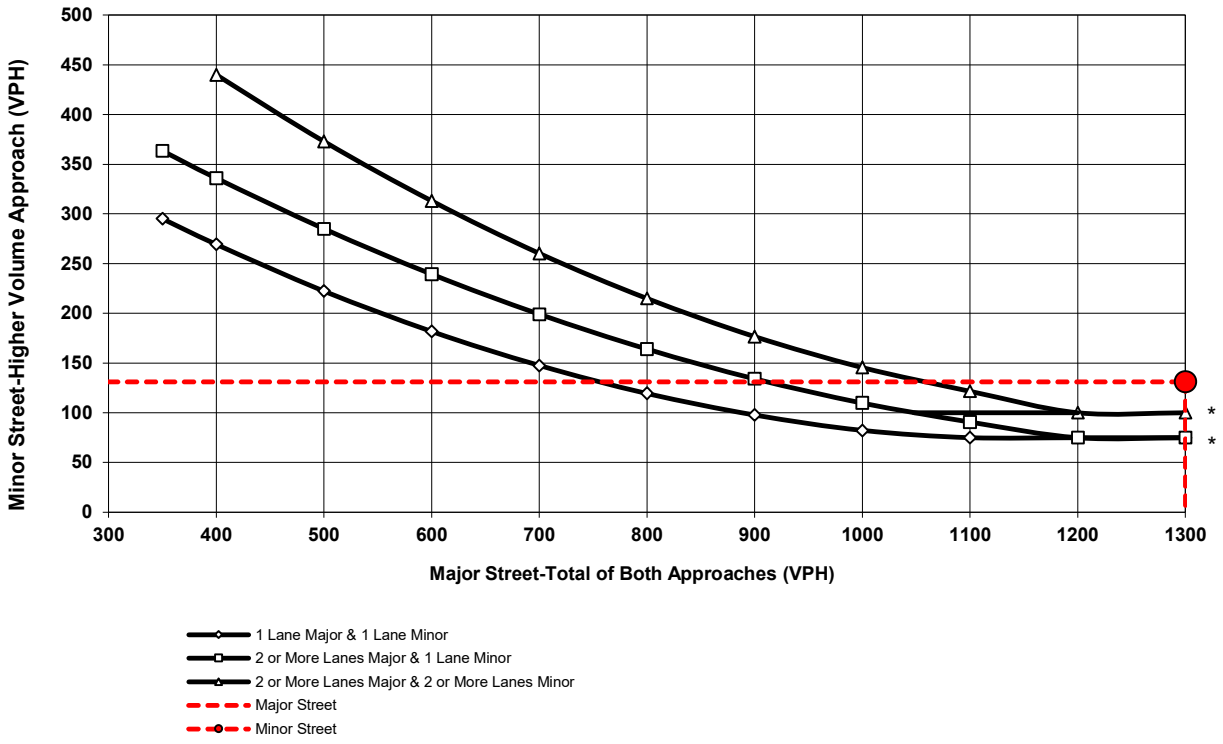
Peak Hour: AM

Major Street: Sierra Avenue (NS) **Minor Street:** Sierra Crossroads Access Drwy (EW)

Total of Both Approaches (VPH):	2340	Higher Volume Approach (VPH):	131
Number of Approach Lanes:	3	Number of Approach Lanes:	1

SIGNAL WARRANT SATISFIED

Figure 4C-4. Peak Hour Warrant (Rural)



* Note:
100 vph Applies as the Lower Threshold Volume for a Minor Street Approach with Two or More Lanes and 75 vph Applies as the Lower Threshold Volume for a Minor Street Approach with One Lane.

Source: MUTCD 2014 California Supplement Including Revision 3 (March 9, 2018)

OYCWP CONDITIONS PEAK HOUR VOLUME WARRANT
RURAL CONDITIONS
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)

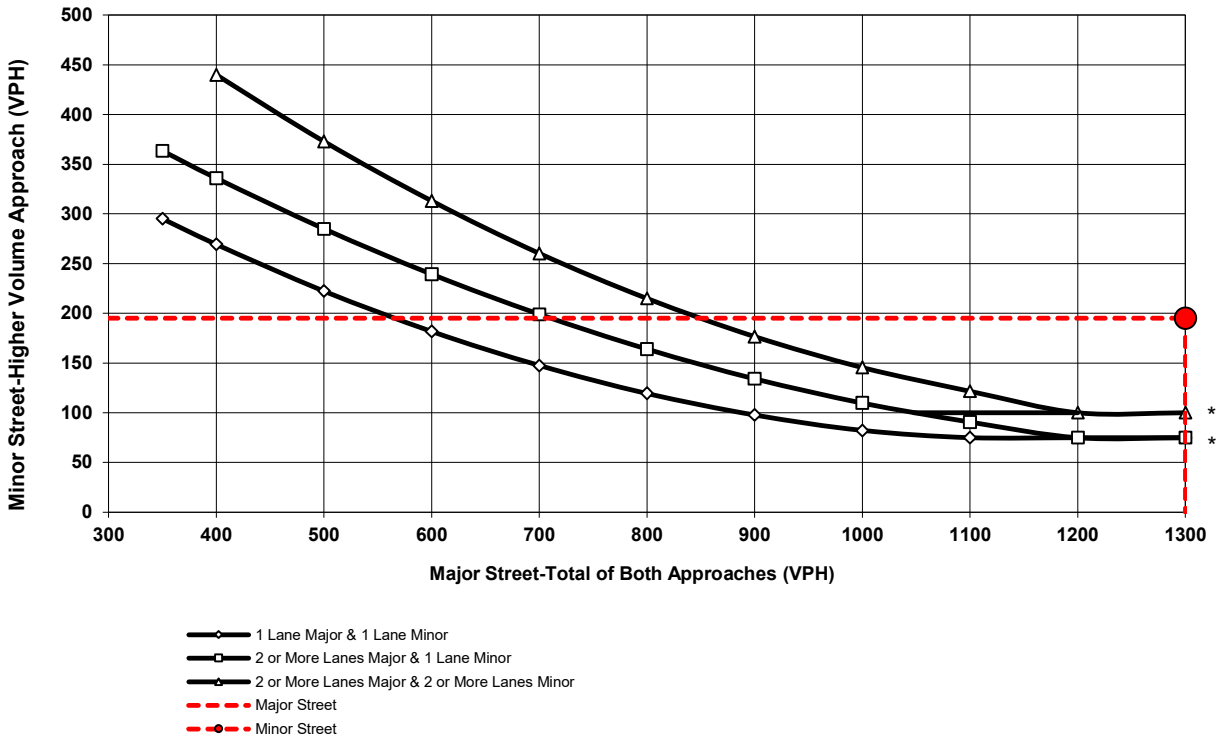
Peak Hour: PM

Major Street: Sierra Avenue (NS) **Minor Street:** Sierra Crossroads Access Drwy (EW)

Total of Both Approaches (VPH):	2862	Higher Volume Approach (VPH):	195
Number of Approach Lanes:	3	Number of Approach Lanes:	1

SIGNAL WARRANT SATISFIED

Figure 4C-4. Peak Hour Warrant (Rural)



* Note:
100 vph Applies as the Lower Threshold Volume for a Minor Street Approach with Two or More Lanes and 75 vph Applies as the Lower Threshold Volume for a Minor Street Approach with One Lane.

Source: MUTCD 2014 California Supplement Including Revision 3 (March 9, 2018)

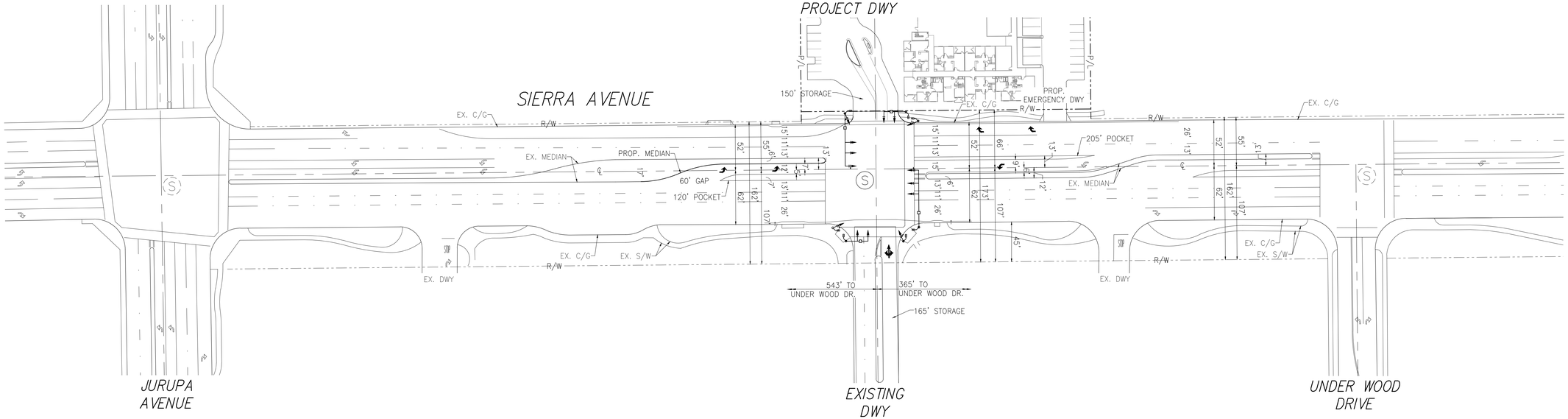
(S) = PROPOSED SIGNALIZED INTERSECTION

(S) = EXISTING SIGNALIZED INTERSECTION

= POTENTIAL SIGNAL POLE

QUEUING ANALYSIS

MOVEMENT	95TH PERCENTILE QUEUE LENGTH		PROVIDED STORAGE LENGTH
	AM PEAK HOUR	PM PEAK HOUR	
NBL	7'	17'	120'
SBL	120'	184'	205'
EB	34'	22'	150'
WB	75'	153'	165'



SCALE: 1" = 60'

30 0 30 60 90

811 Know what's below. Call before you dig.

REV.	REVISION DESCRIPTION	DATE	ENGR.	CITY	DATE

SHOULD CONSTRUCTION OF THE REQUIRED IMPROVEMENTS NOT COMMENCE WITHIN TWO YEARS OF THE DATE OF APPROVAL SHOWN HEREON AND CARRIED FORTH IN A DILIGENT MANNER, THE CITY ENGINEER MAY REQUIRE REVISIONS TO THE PLANS TO BRING THEM INTO CONFORMANCE WITH STANDARDS IN EFFECT.

REGISTERED PROFESSIONAL ENGINEER — THOMAS JOSEPH WHEAT — No. 69467 — Exp. 6/30/22 — CIVIL — STATE OF CALIFORNIA

Prepared Under The Supervision Of :

TJW ENGINEERING, INC.
Traffic Engineering &
Transportation Planning Consultants
6 Venture, Suite 225, Irvine, CA 92618
t: (949) 878-3509 f: (949) 878-3593
www.tjwengineering.com

THOMAS JOSEPH WHEAT R.C.E. No. 69467 Exp. 6/30/22

CITY OF FONTANA, CALIFORNIA

ALIGNMENT STUDY

SIERRA AVENUE FROM JURUPA AVENUE TO UNDERWOOD DRIVE

DRAWN BY: JC
DESIGNED BY: JC
CHECKED BY: TJW
APPROVED BY:
CITY ENGINEER DATE: R.C.E. 51152

SCALE: 1:60
DATE: 12/22/2020
DRAWING NO.: 1 / 1