RANCHO DE ALAMO (TTM 37881)
TRAFFIC STUDY
City of San Jacinto, California

RANCHO DE ALAMO (TTM 37881)
TRAFFIC IMPACT STUDY
City of San Jacinto, California

Prepared for:

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1.0 Introduction

1.1 Purpose of Report and Study Objectives

The purpose of this traffic impact analysis is to evaluate the proposed Rancho de Alamo Tentative Tract Map (TTM) 37881 (hereinafter referred to as project) from a traffic and circulation standpoint and determine whether the proposed project will have a significant impact on the environment.

The proposed project is to be located at the northeast corner of Cawston Avenue and Cottonwood Avenue in the City of San Jacinto. This study has been conducted pursuant to the City of San Jacinto *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment (June 2020)*, the City of San Jacinto General Plan (October 2012), and the California Environmental Quality Act (CEQA) requirements.

This traffic study has been prepared in accordance with the scope of work reviewed and approved by the City of San Jacinto staff.

1.2 Site Location

The proposed project is to be located at the northeast corner of Cawston Avenue and Cottonwood Avenue in the City of San Jacinto. The project site is currently undeveloped. The project site location map is shown on Exhibit 1-1.

1.3 Project Description

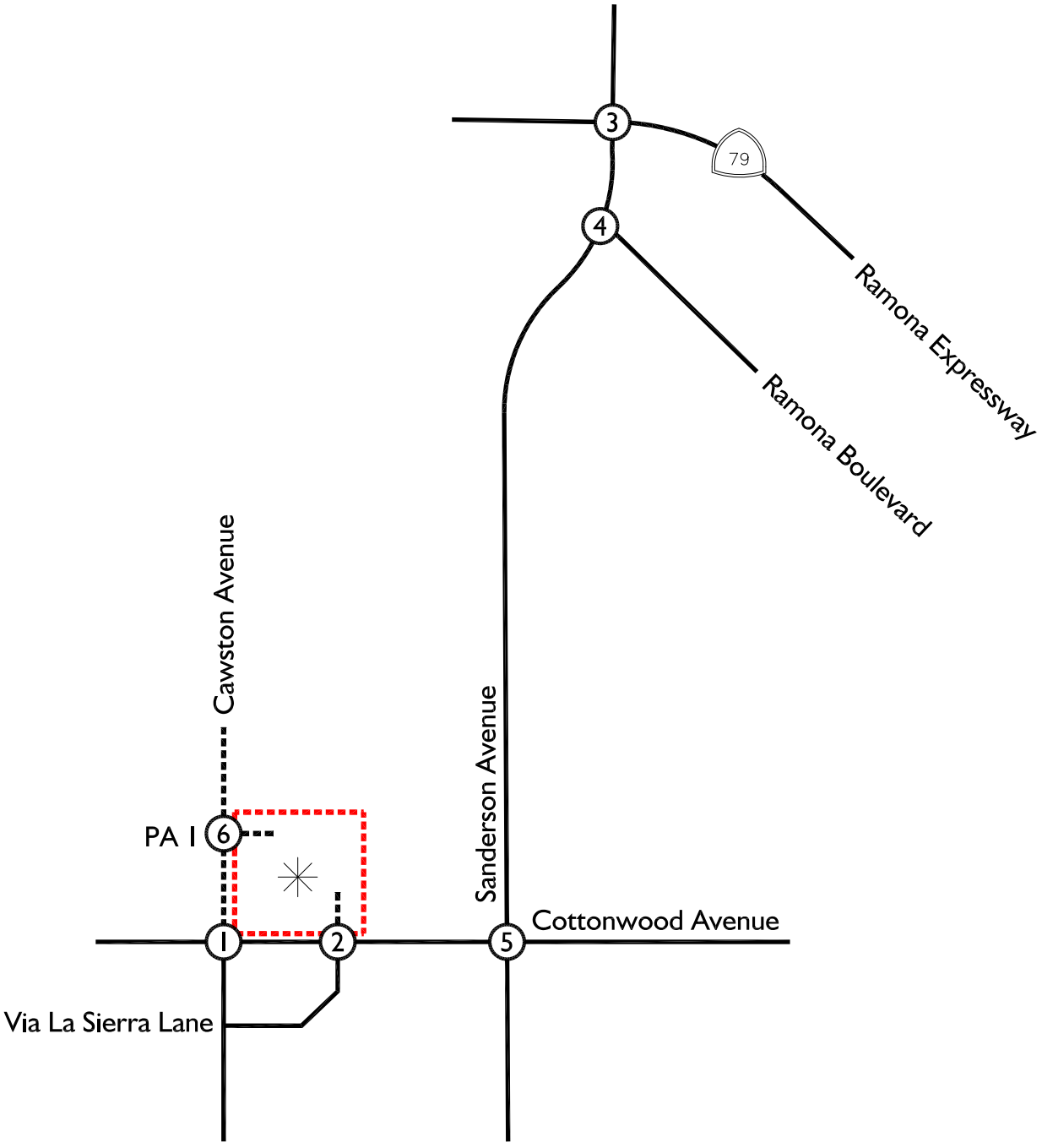
The proposed project consists of the construction of 194 single family residential dwelling units.

Access for the proposed project is planned as follows:

- One unsignalized full access intersection to be constructed at the north leg of the Via La Sierra Lane / Cottonwood Avenue intersection; and
- One unsignalized full access along Cawston Avenue, north of Cottonwood Avenue.

The project is planned to open in 2022 and will be evaluated in one (1) single phase.The project site plan is shown on Exhibit 1-2.

Exhibit 1-1
Location Map



Legend:

(1) = Study Area Intersection

= Project Site

= Project Access Driveway/Proposed Roadway

= Project Site Boundary

N

Exhibit 1-2

Site Plan

N

2.0 Study Area and Analysis Methodology

This section of the report presents the analysis study area and the methodologies used to perform the traffic analyses summarized in this report in accordance with the City of San Jacinto requirements.

This section also discusses the agency-established applicable performance criteria and thresholds of significance for the study facilities.

2.1 Study Area Intersections

The study area included in this analysis has been determined based upon existing and future transportation facilities within the vicinity of the site where the project may contribute a significant amount of traffic. Based on preliminary discussion with the City's traffic consultant, review of the project's preliminary trip generation, geographical area, and circulation system, the traffic study evaluates the following study intersections:

1. Cawston Avenue (NS) / Cottonwood Avenue (EW);
2. Project Access 2 – Via La Sierra Lane (NS) / Cottonwood Avenue (EW);
3. Sanderson Avenue (NS) / Ramona Expressway (EW);
4. Sanderson Avenue (NS) / Ramona Boulevard (EW);
5. Sanderson Avenue (NS) / Cottonwood Avenue (EW); and
6. Cawston Avenue (NS) / Project Access 1 (EW).

The study intersections level of service performance is evaluated for the following study scenarios for AM and PM peak hour conditions:

- Existing Conditions;
- Existing Plus Project Conditions;
- Project Opening Year (2022) Without Project Conditions; and

- Project Opening Year (2022) With Project Conditions.

2.2 Highway Capacity Manual (HCM) Methodology

In accordance with the *City of San Jacinto Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment (June 2020)*, the Highway Capacity Manual Sixth Edition (HCM 6) is utilized as the technical guide in the evaluation of traffic operations. The HCM defines level of service as a qualitative measure which describes operational conditions within a traffic stream, generally in terms of factors such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. The criteria used to evaluate LOS (Level of Service) conditions vary based on the type of roadway and whether the traffic flow is considered interrupted or uninterrupted.

The definitions of level of service for uninterrupted flow (flow unrestrained by the existence of traffic control devices) are:

- LOS A represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream.

- LOS B is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.

- LOS C is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream.

- LOS D represents high-density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.

- LOS E represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.

- LOS F is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations.

The level of service is typically dependent on the quality of traffic flow at the intersections along a roadway. The HCM methodology expresses the level of service at an intersection in terms of delay time for the various intersection approaches. The HCM uses different procedures depending on the type of intersection control. The levels of service determined in this study are calculated using the HCM methodology.

For signalized intersections, average control delay per vehicle is used to determine the level of service. Levels of service at signalized study intersections have been evaluated using the HCM intersection analysis program.

Study area intersections, which are stop sign controlled with stop control on the minor street only, have been analyzed using the unsignalized intersection methodology of the HCM. For these intersections, the calculation of level of service is dependent on the occurrence of gaps occurring in the traffic flow of the main street. Using data collected, describing the intersection configuration and traffic volumes at these locations, the level of service has been calculated. The level of service is determined based on the worst individual movement or movements sharing a single lane. The relationship between level of service and delay is different than for signalized intersections.

Table 2-1 shows the level of service criteria based on the HCM methodology.

Table 2-1
HCM Level of Service – Vehicle Delay

LOS	Intersection LOS Criteria	
	Signalized Delay (Seconds)	Unsignalized Delay (Seconds)
A	0.00 - 10.00	0.00 - 10.00
B	10.01 - 20.00	10.01 - 15.00
C	20.01 - 35.00	15.01 - 25.00
D	35.01 - 55.00	25.01 - 35.00
E	55.01 - 80.00	35.01 - 50.00
F	>80.01	>50.01

2.3 City of San Jacinto Study Intersection Level of Service Performance Criteria

The following is a summary of the performance standards from the *City of San Jacinto Traffic Impact Analysis Guidelines for Vehicles Miles Traveled and Level of Service Assessment (June 2020)*.

Performance Criteria:

The City of San Jacinto lists performance criteria for intersection operations. The City has established a target LOS standard of LOS D. Hence, LOS E and F would be considered deficient and would require improvements to achieve acceptable LOS.

Significant Impact Criteria:

Determination of significant impacts will be based on a comparison of without and with project levels of service for each analysis year.

Signalized Intersections

- Any signalized study intersection operating at LOS D or better without project traffic in which the addition of project traffic causes the intersection to degrade to LOS E or F shall identify improvements to improve operations to LOS D or better.

- Any signalized study intersection that is operating at LOS E or F without project traffic where the project increases delay by 5.0 or more seconds shall identify improvements to offset the increase in delay.

Unsignalized Intersections

An operational improvement would be required if the study determines that either section a) or both sections b) and c) occur:

a) The addition of project related traffic causes the intersection to degrade from an acceptable LOS D or better to LOS E or F.

Or

b) The project adds 5.0 seconds or more of delay to an intersection that is already projected to operate without project traffic at LOS E or F,

AND

c) The intersection meets the peak hour traffic signal warrant after the addition of project traffic.

If the conditions above are satisfied, improvements should be identified that achieve the following:

- LOS D or better for case a) above or to pre-project LOS and delay for case b) above.

3.0 Existing Traffic Volumes & Circulation System

This section provides a discussion of existing study area conditions and traffic volumes.

3.1 Existing Traffic Controls and Intersection Geometrics

Exhibit 3-1 identifies the existing roadway conditions within the study. The number of through traffic lanes for existing roadways and the existing intersection controls are identified. The type of traffic control and number of lanes at an intersection are key inputs for the calculation of level of service.

3.2 Existing Traffic Volumes

Due to the COVID-19 pandemic, since traffic volumes and patterns can be considered abnormal, collection of new turning movement counts might not reflect typical conditions. Therefore, RK has derived existing (2021) baseline conditions traffic volumes at the study intersections by utilizing available pre-pandemic traffic volume data for the study area utilizing traffic counts from 2015 and 2019.

A growth rate of two percent (2%) per year been applied to the historical traffic data to derive 2021 baseline existing conditions traffic volumes.

AM peak period intersection counts were collected from 7:00 AM to 9:00 AM and PM peak period intersection counts were collected from 4:00 PM to 6:00 PM.

Existing vehicular traffic volumes within the study area are shown on Exhibit 3-2. The traffic count worksheets are included in Appendix A.

3.3 City of San Jacinto Circulation Element

The City of San Jacinto General Plan Roadway System Map is shown in Exhibit 3-3.

The City of San Jacinto General Plan Roadway Cross Sections are shown in Exhibit 3-4.

The City of San Jacinto General Plan Bikeway Plan is shown in Exhibit 3-5.

The City of San Jacinto General Plan Trails Opportunities Map is shown in Exhibit 3-6.

Exhibit 3-1

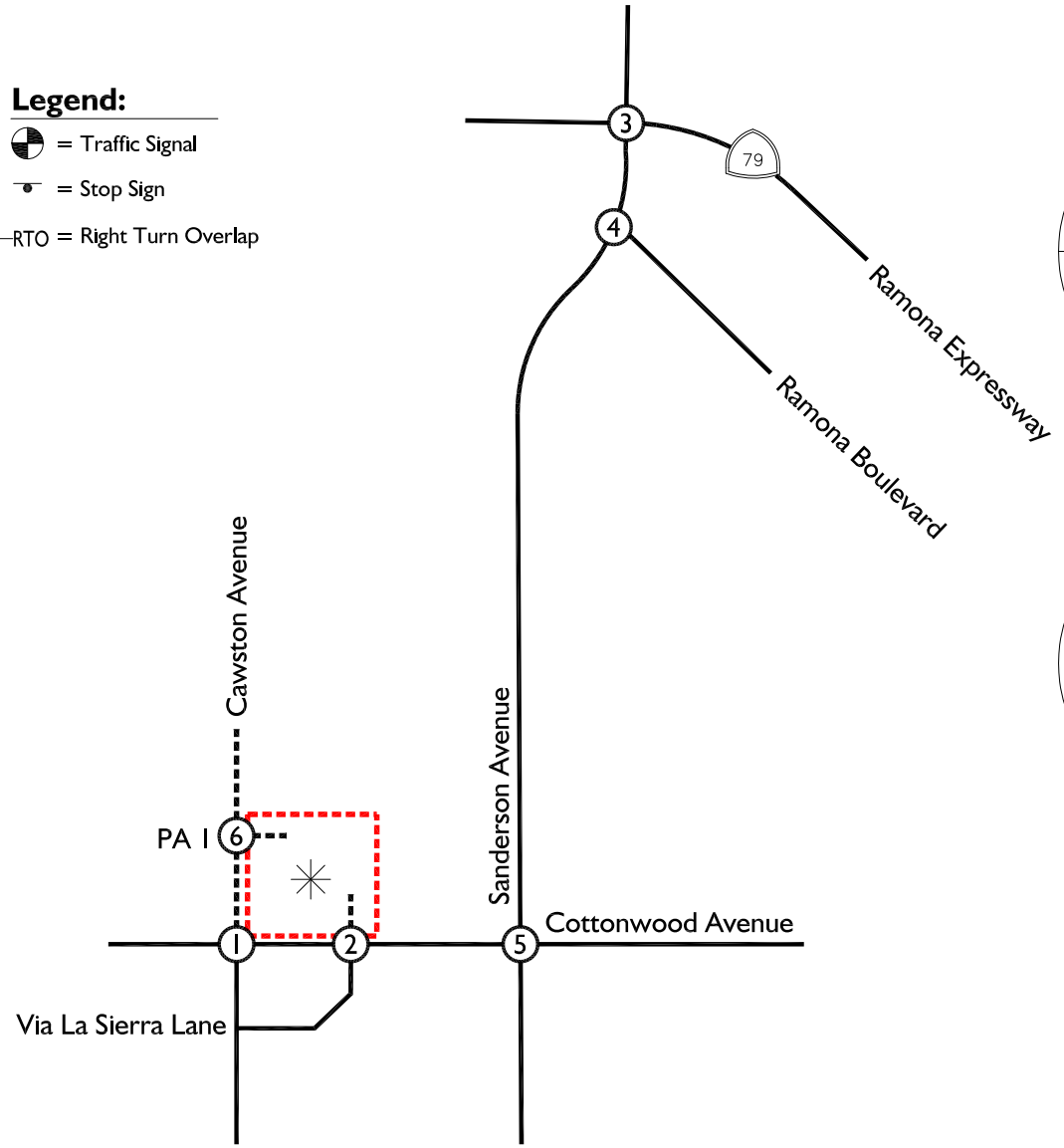
Existing Lane Geometry & Traffic Controls

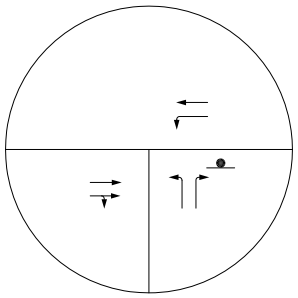
Legend:

= Traffic Signal

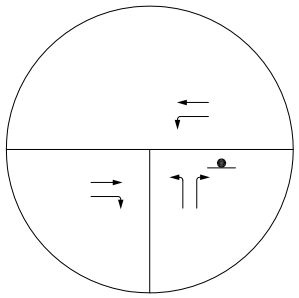
= Stop Sign

RTO = Right Turn Overlap

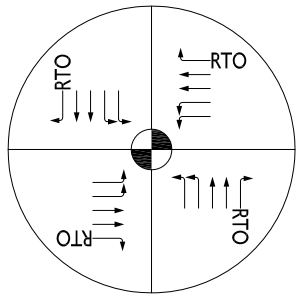




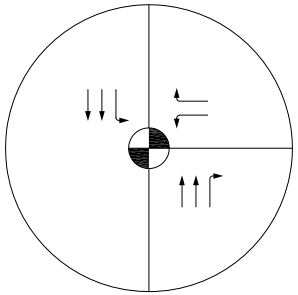
1. Cawston Avenue (NS) & Cottonwood Avenue (EW)



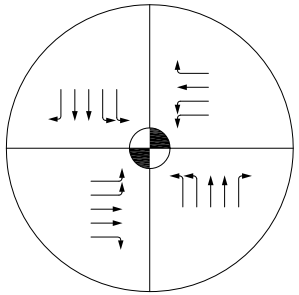
2. Project Access 2 - Via La Sierra Lane (NS) & Cottonwood Avenue (EW)



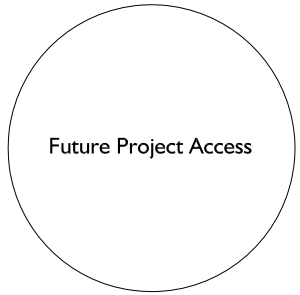
3. Sanderson Avenue (NS) & Ramona Expressway (EW)



4. Sanderson Avenue (NS) & Ramona Boulevard (EW)



5. Sanderson Avenue (NS) & Cottonwood Avenue (EW)



6. Cawston Avenue (NS) & Project Access 1 (EW)

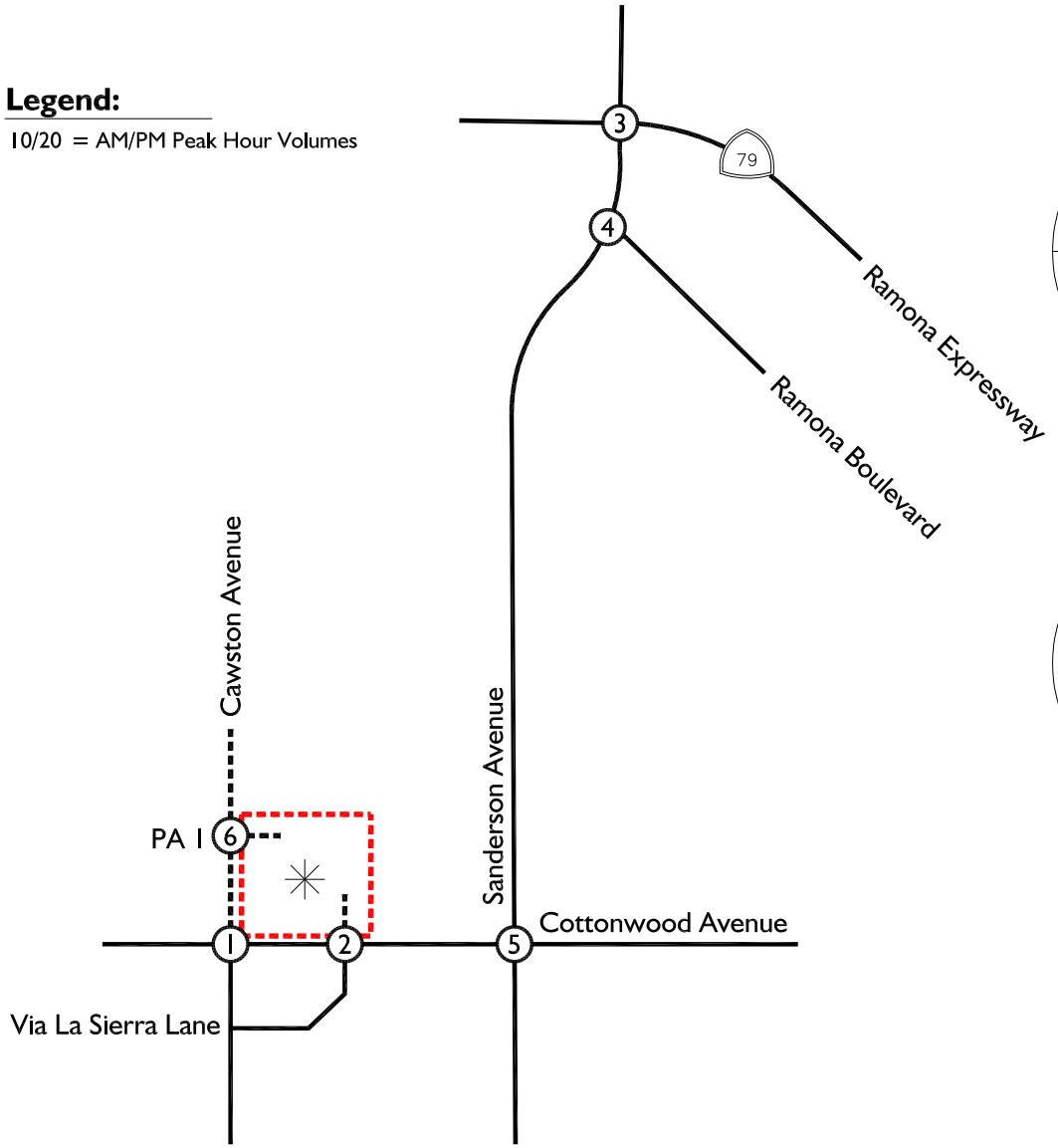
N

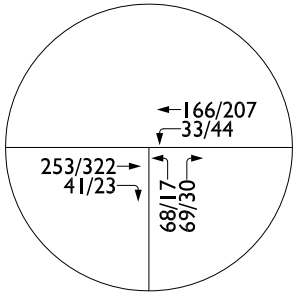
Exhibit 3-2

Existing Traffic Volumes

Legend:

10/20 = AM/PM Peak Hour Volumes





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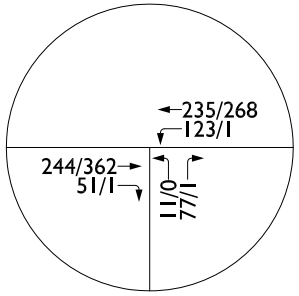
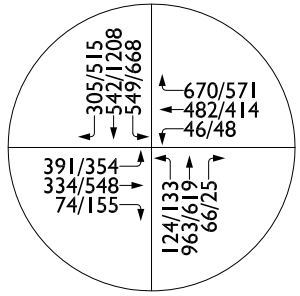
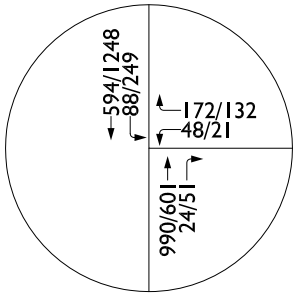


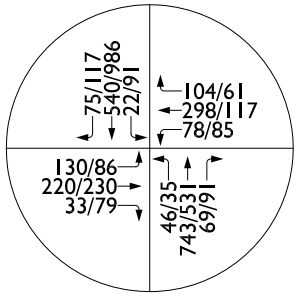
2. Project Access 2 - Via La Sierra Lane (NS) & Cottonwood Avenue (EW)



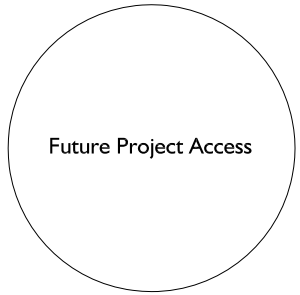
3. Sanderson Avenue (NS) & Ramona Expressway (EW)



4. Sanderson Avenue (NS) & Ramona Boulevard (EW)



5. Sanderson Avenue (NS) & Cottonwood Avenue (EW)

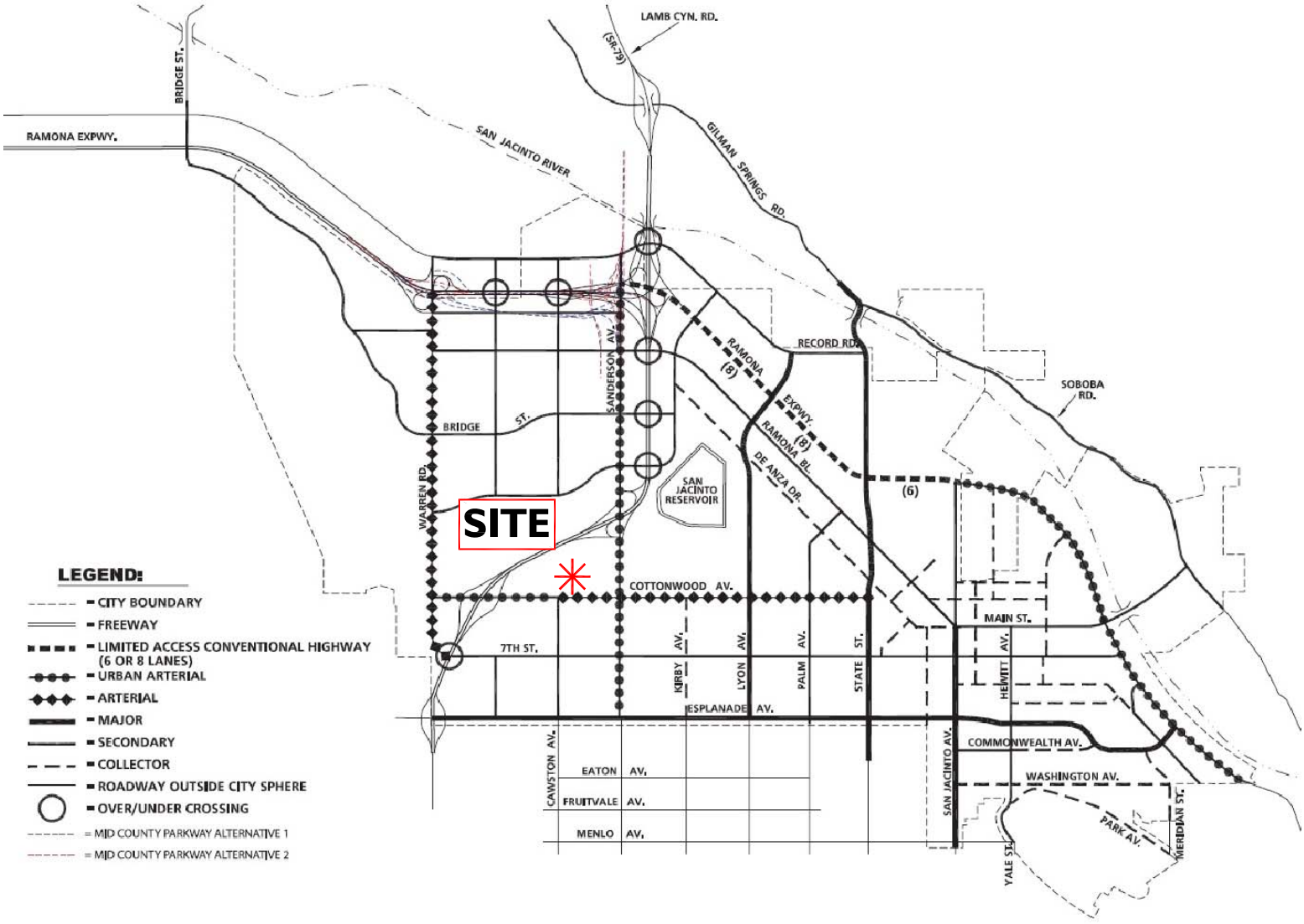


6. Cawston Avenue (NS) & Project Access 1 (EW)

N

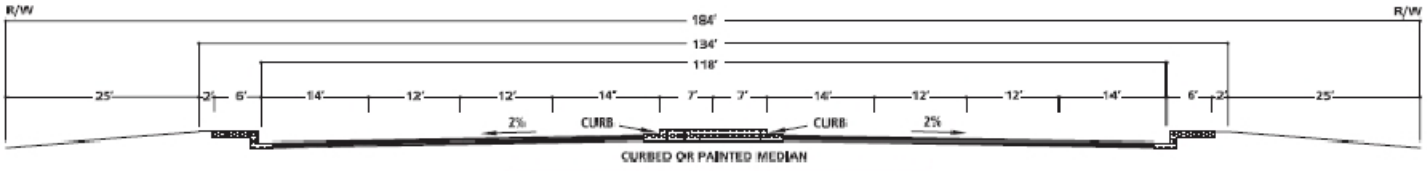
Exhibit 3-3

City of San Jacinto General Plan Roadway System

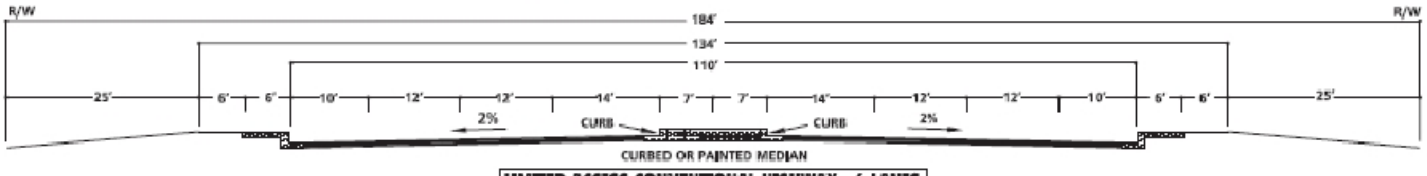


N

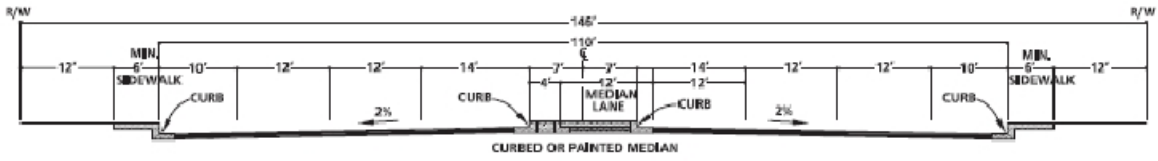
City of San Jacinto General Plan Roadway Cross Sections



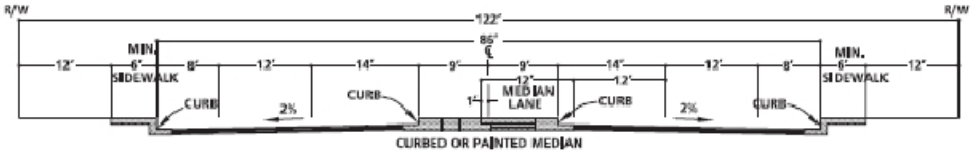
LIMITED ACCESS CONVENTIONAL HIGHWAY - 8 LANES



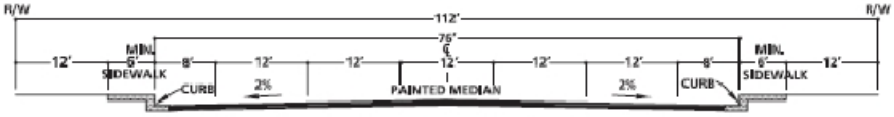
LIMITED ACCESS CONVENTIONAL HIGHWAY - 6 LANES



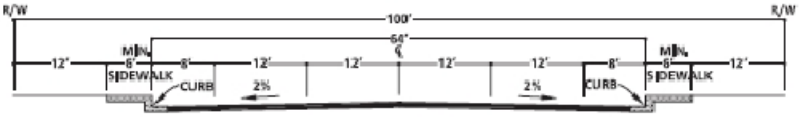
URBAN ARTERIAL HIGHWAY



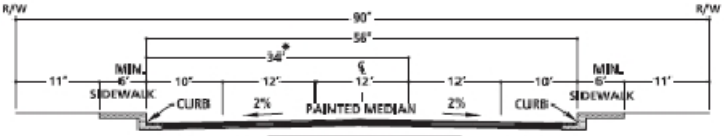
ARTERIAL HIGHWAY



MAJOR HIGHWAY

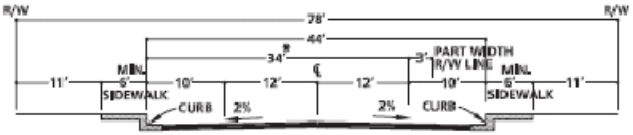


SECONDARY HIGHWAY



INDUSTRIAL COLLECTOR

*PART WIDTH STREET SECTION FOR AN INTERIOR COMMERCIAL OR INDUSTRIAL STREET



COLLECTOR

* PART WIDTH STREET SECTION FOR ALL COLLECTOR STREET – 34' IMPROVEMENTS ON 48' R/W

Exhibit 3-5

City of San Jacinto General Plan Bikeway Plan

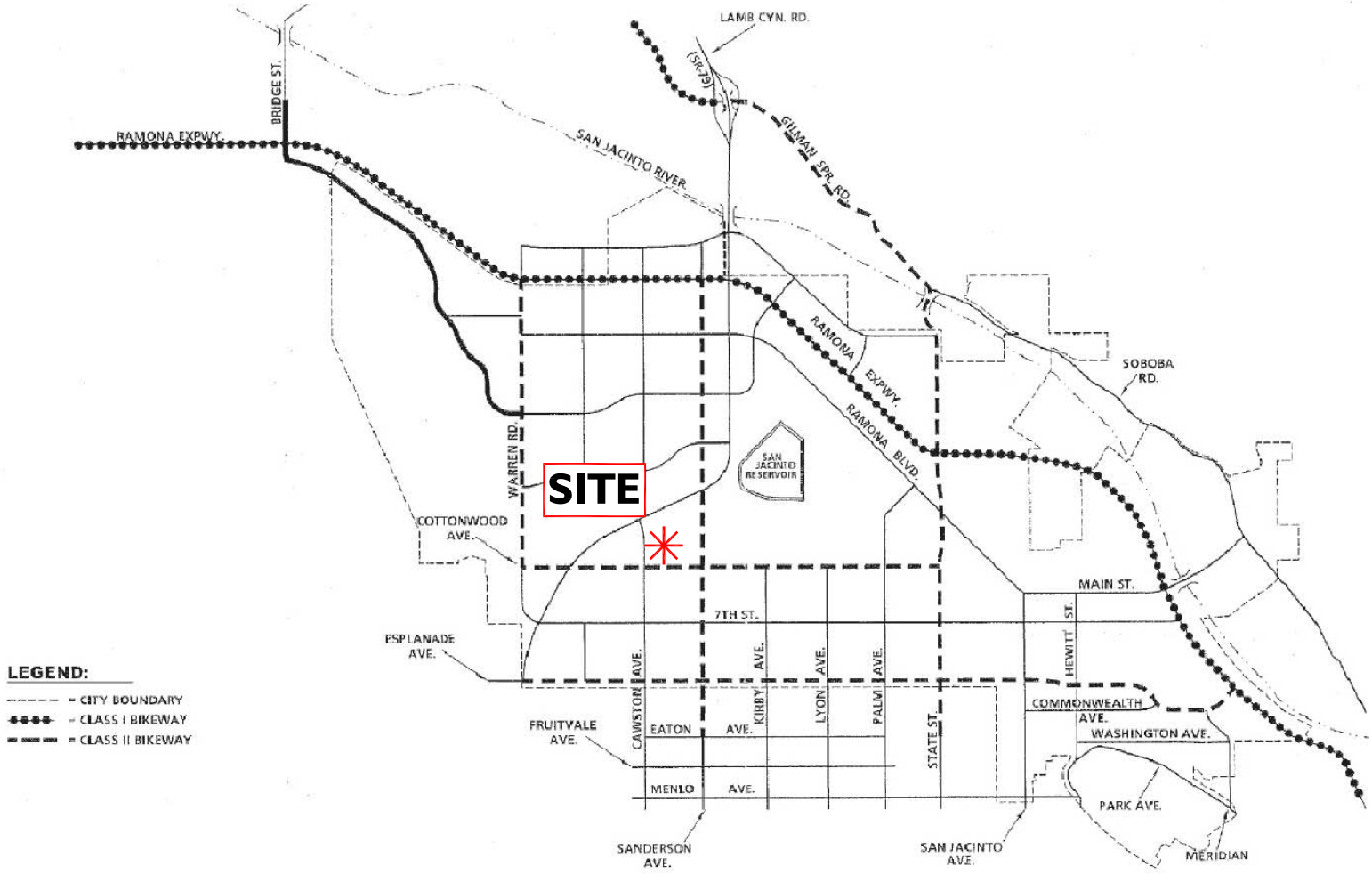
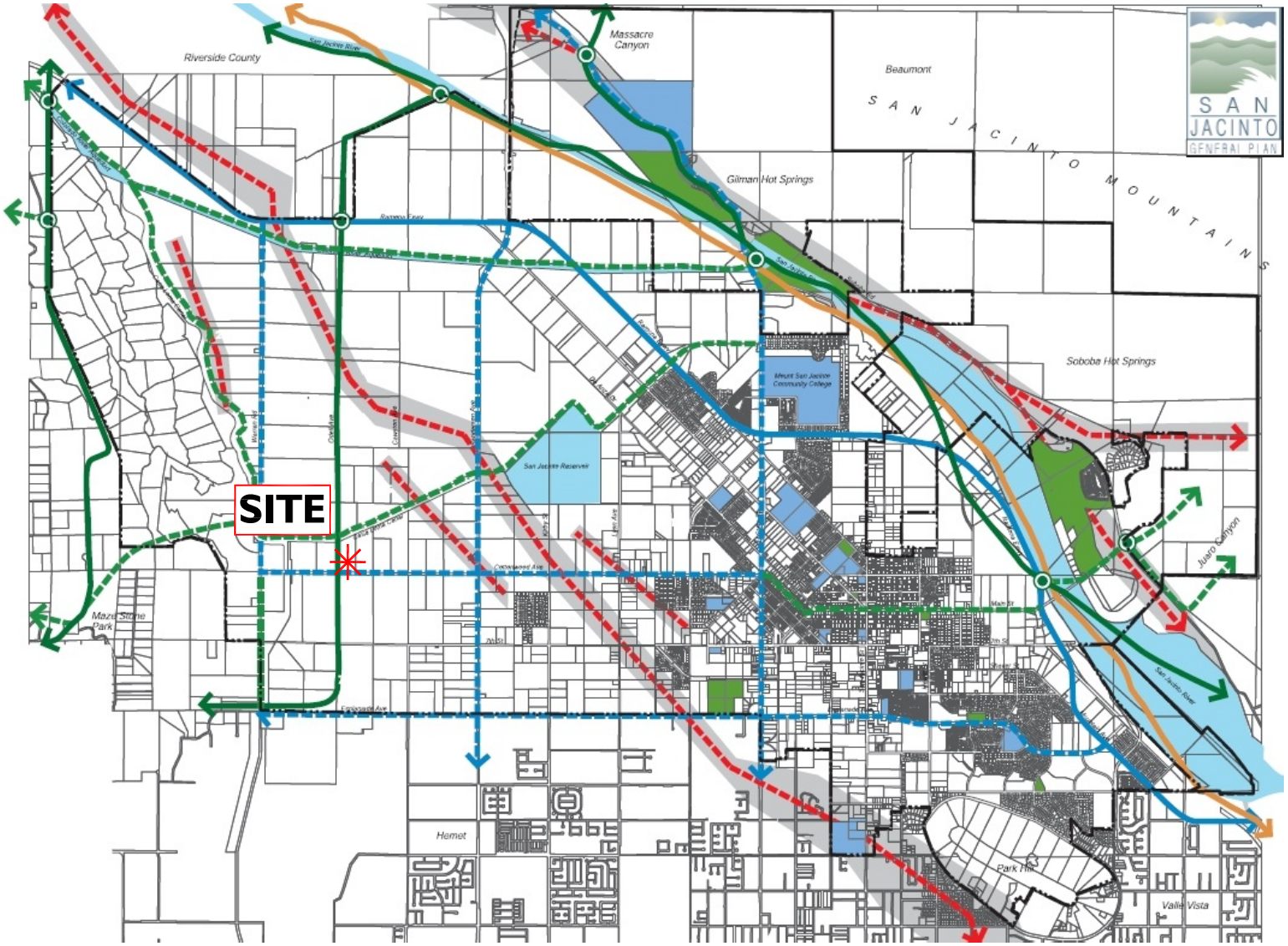


Exhibit 3-6

City of San Jacinto General Plan Trails Opportunities Map



LEGEND

- Regional Trail
- Proposed Community Trail
- Juan Bautista de Anza National Trail
- Class I Bike Trail
- Class II Bike Trail
- Trail Connection Points
- Fault Zones/Potenial Linear Trails
- PR Parks
- P Public Institutional
- 1 Proposed Parks Facilities/ Potential Connection Points
- H20 Water
- City Boundary
- Sphere of Influence Boundary

N

4.0 Projected & Future Traffic Volumes

This section of the report provides a discussion on methodologies utilized to derive future traffic volumes for the study area.

4.1 Project Traffic Conditions

4.1.1 Trip Generation

Trip generation represents the amount of traffic that is attracted and produced by a development. The trip generation for the project is based upon the specific land uses that have been planned for this development.

Trip generation is typically estimated based on the trip generation rates from the latest *Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition, 2017)*. This publication provides a comprehensive evaluation of trip generation rates for a variety of land uses.

Table 4-1 shows the ITE trip generation rates which are to be utilized for the trip generation analysis of the proposed project land use.

Utilizing the ITE trip generation rates from Table 4-1, Table 4-2 summarizes the daily and peak hour trip generation for the proposed project.

As shown in Table 4-2, the proposed project is forecast to generate approximately 1,831 daily trips including approximately 144 trips during the AM peak hour and approximately 192 PM trips during the PM peak hour.

4.1.2 Trip Distribution

Trip distribution represents the directional orientation of traffic to and from the project site. Trip distribution is heavily influenced by the geographical location of the site, the location of retail, employment, and recreational opportunities, and the proximity to the regional freeway system. The directional orientation of traffic was determined by evaluating existing and proposed land uses and highways within the study area.

The outbound project trip distribution is shown in Exhibit 4-1 and the inbound project trip distribution is shown in Exhibit 4-2.

4.1.3 Modal Split

Modal split denotes the proportion of traffic generated by a project that would use any of the transportation modes, namely buses, cars, bicycles, motorcycles, trains, carpools, etc. The traffic-reducing potential of public transit and other modes is significant. However, the traffic projections in this study are conservative in that public transit and alternative transportation may be able to reduce the traffic volumes, but, no modal split reduction is applied to the projections. With the implementation of transit service and provision of alternative transportation ideas and incentives, the automobile traffic demand can be reduced significantly.

4.1.4 Project Traffic Volumes/Assignment

The assignment of project traffic to the adjoining roadway system is based upon the project's trip generation, trip distribution, and proposed arterial highway and local street systems that would be in place by the time of initial occupancy of the site.

Project traffic volumes are shown in Exhibit 4-3.

4.2 Existing Plus Project Conditions Traffic Volumes

Existing Plus Project Conditions traffic volumes consist of the summation of the existing (2021) traffic volumes shown in Exhibit 3-2 and the project traffic volumes shown in Exhibit 4-3.

Existing Plus Project traffic volumes are shown in Exhibit 4-4.

4.3 Background Traffic

4.3.1 Method of Projection

To assess future conditions, project traffic is combined with existing traffic and area-wide growth. As directed by City staff, to account for area-wide/ambient growth in the study area, an annual growth rate of 2% per year has been applied to existing (2021) traffic volumes over a one-year period to derive project opening year (2022).

4.3.2 Cumulative Projects Traffic

Information on future projects in the vicinity of study area has been provided by the City of Hemet and City of San Jacinto staff for inclusion in this analysis and is shown in Table 4-3.

"Probable future projects" include projects that have been filed with the City but are not yet approved or projects that the City reasonably anticipates will be submitted in the foreseeable future.

Table 4-3 shows the proposed land uses, and daily and peak hour trip generation for the nearby cumulative projects provided by the public agencies.

A location map of the cumulative projects is shown in Exhibit 4-5.

Cumulative projects traffic volumes are shown in Exhibit 4-6.

In reality, some of the cumulative projects may be downsized or may not be developed by Project Opening Year (2022). In addition, many of the related projects have been or will be subject to a variety of mitigation measures that will reduce the potential environmental impacts associated with those projects. However, those mitigation measures have not been taken into accounts in projecting the environmental impact of the related projects.

Therefore, the cumulative analyses set forth below are conservative and could result in greater impacts than actually anticipated. Additionally, the analysis utilizes a growth rate of 2% per year for Project Opening Year (2022) conditions, which would already capture and account for most projects in the area. The growth rate methodology is considered conservative since it is applied to all movements in the study intersections.

4.4 Project Opening Year (2022) Without Project Conditions Traffic Volumes

Project Opening Year (2022) Without Project Conditions traffic volumes consist of one (1) year of annual growth on top of existing (2021) traffic volumes at 2% per year, plus the traffic generated by the cumulative projects.

Project Opening Year (2022) Without Project Conditions traffic volumes are shown in Exhibit 4-7.

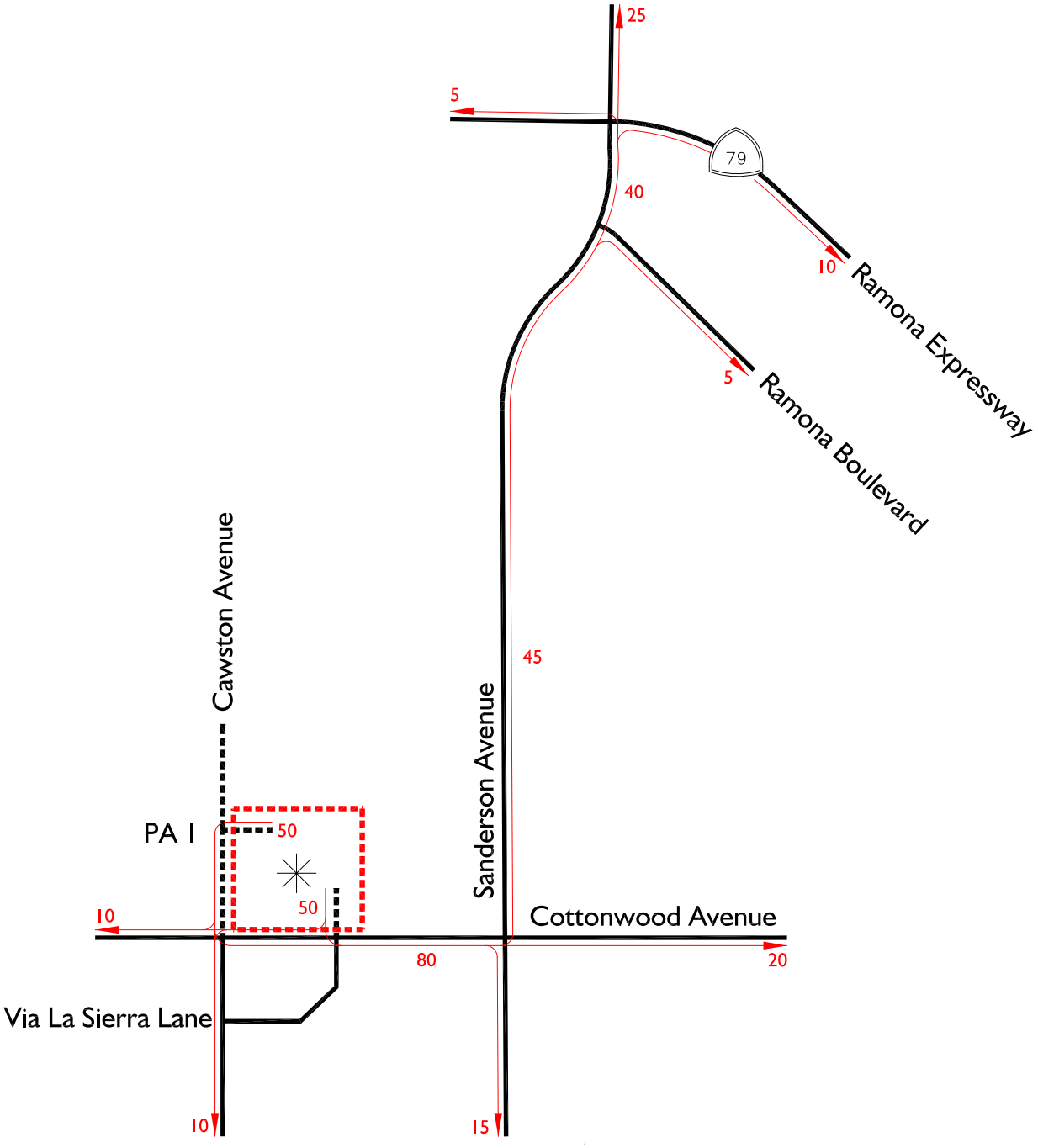
4.5 Project Opening Year (2022) With Project Conditions Traffic Volumes

Project Opening Year (2022) With Project Conditions traffic volumes consist of one (1) year of annual growth on top of existing (2021) traffic volumes at 2% per year, plus the traffic generated by the cumulative projects and the traffic generated by the proposed project.

Project Opening Year (2022) With Project Conditions traffic volumes are shown in Exhibit 4-8.

Exhibit 4-1

Outbound Project Trip Distribution



Legend:

10 = Percent from Project

= Project Site

= Project Access Driveway/Proposed Roadway

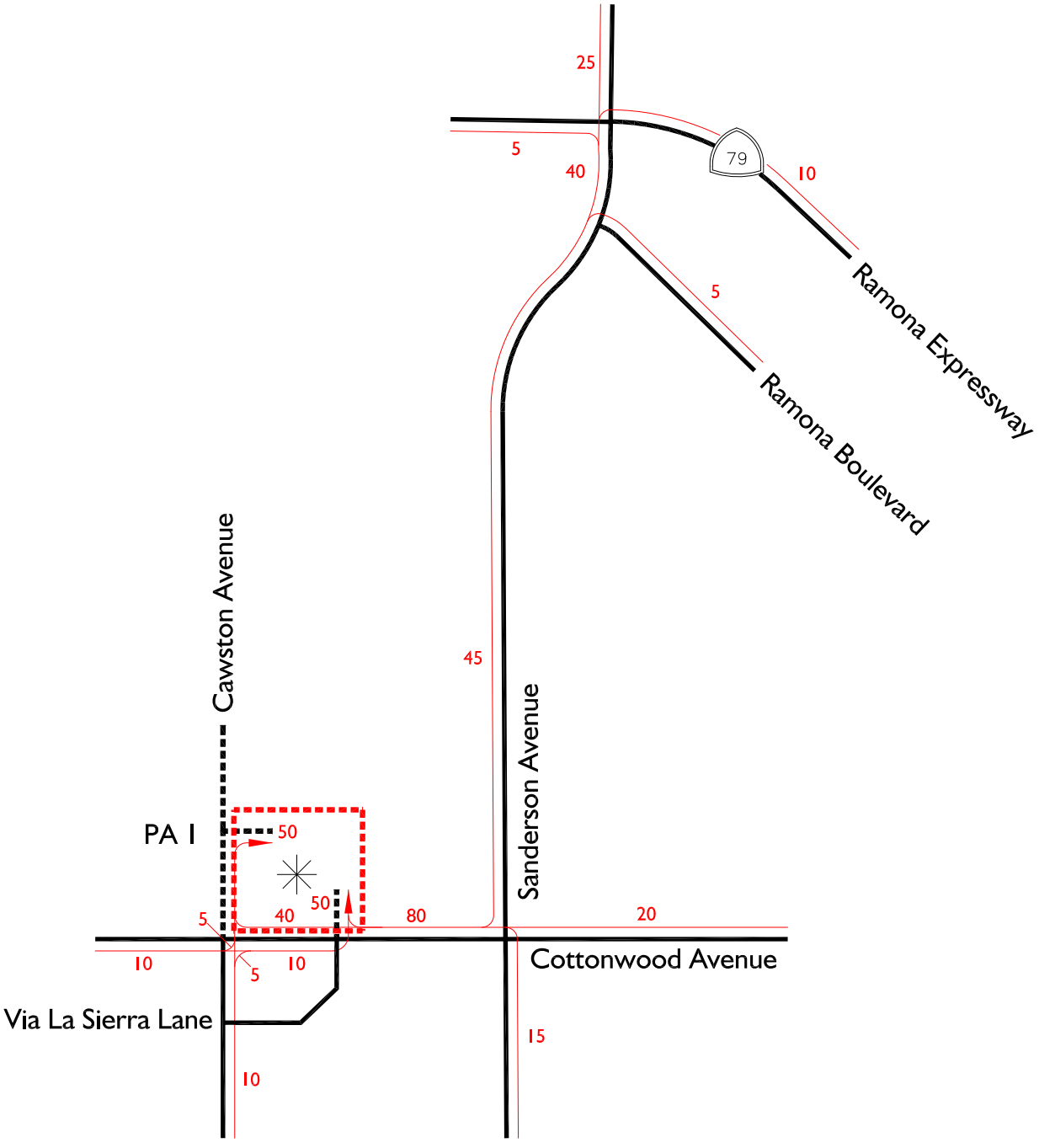
= Project Site Boundary

N

RK engineering group, inc.

Exhibit 4-2

Inbound Project Trip Distribution



Legend:

10 = Percent to Project

= Project Site

= Project Access Driveway/Proposed Roadway

= Project Site Boundary

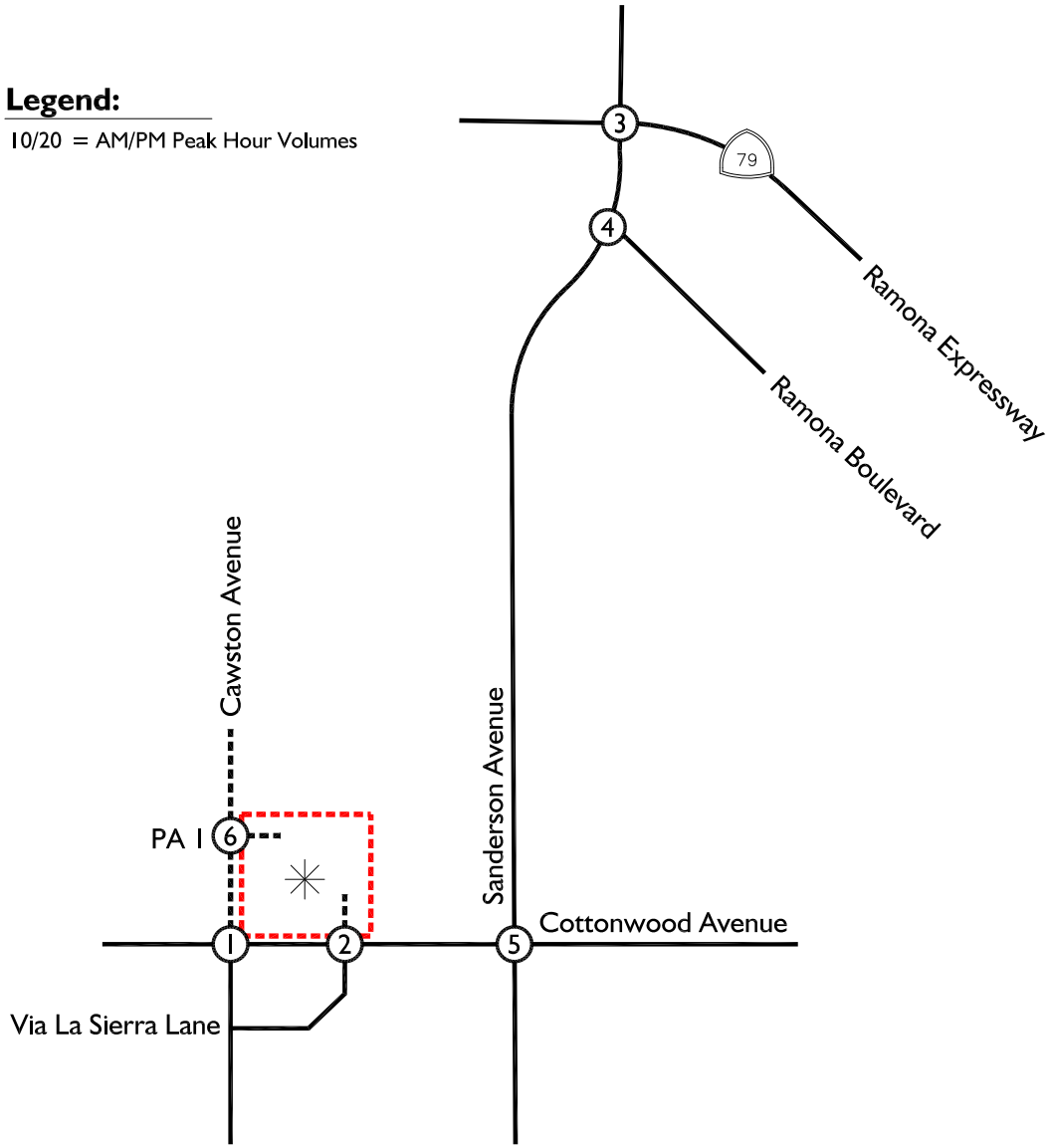
N

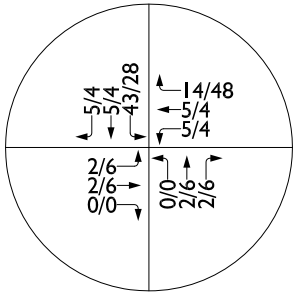
Exhibit 4-3

Project Traffic Volumes

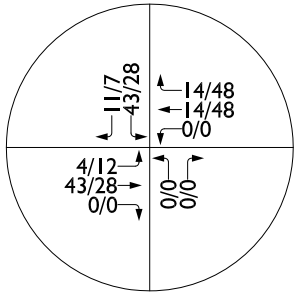
Legend:

10/20 = AM/PM Peak Hour Volumes

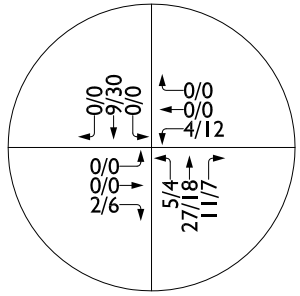




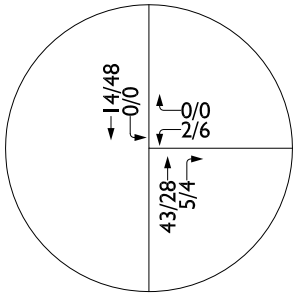
1. Cawston Avenue (NS) & Cottonwood Avenue (EW)



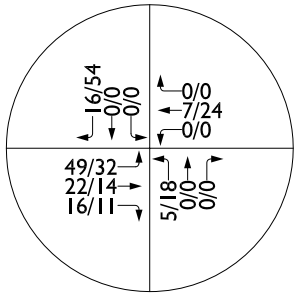
2. Project Access 2 - Via La Sierra Lane (NS) & Cottonwood Avenue (EW)



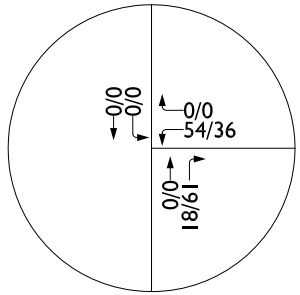
3. Sanderson Avenue (NS) & Ramona Expressway (EW)



4. Sanderson Avenue (NS) & Ramona Boulevard (EW)



5. Sanderson Avenue (NS) & Cottonwood Avenue (EW)



6. Cawston Avenue (NS) & Project Access 1 (EW)

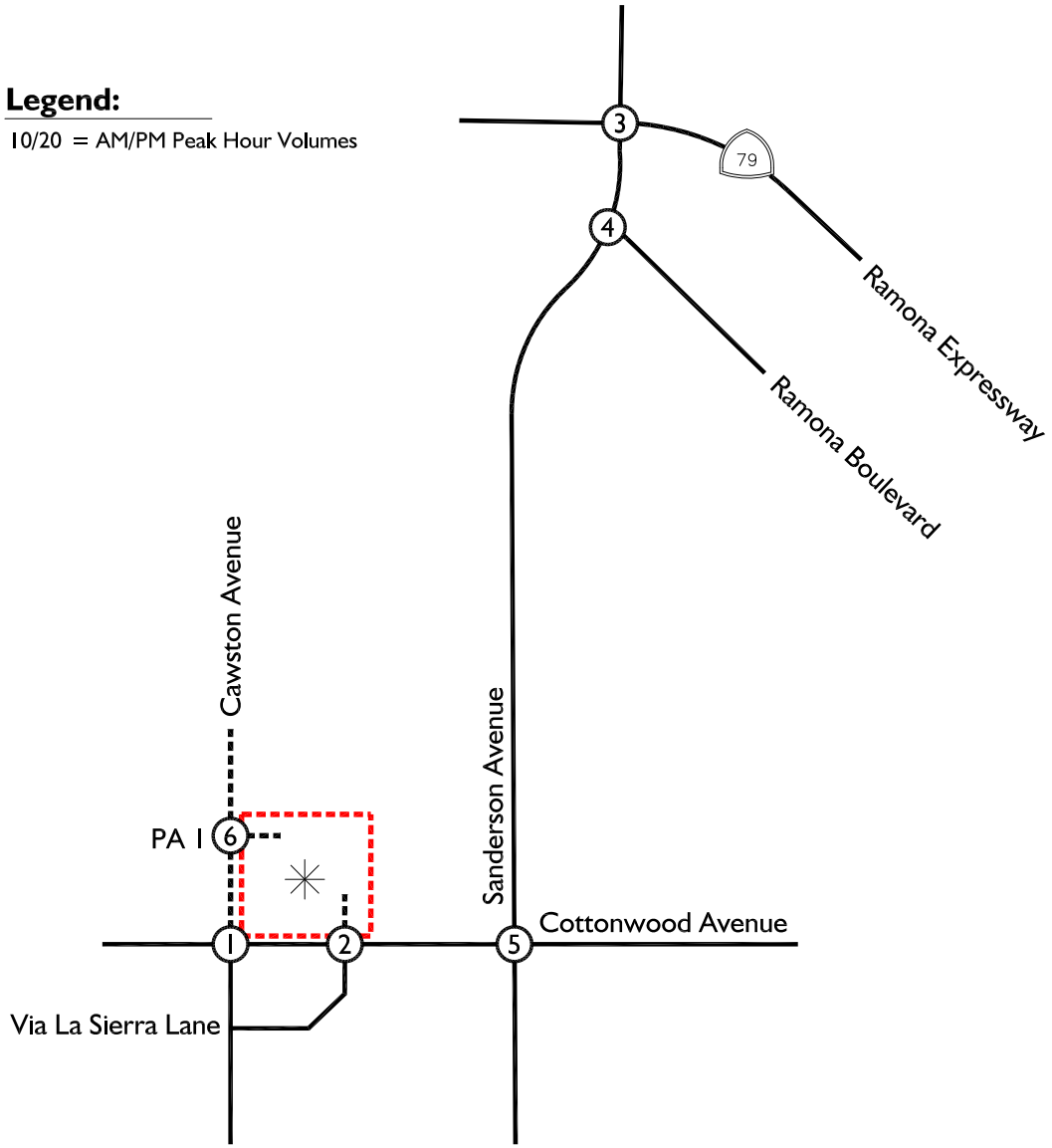
N

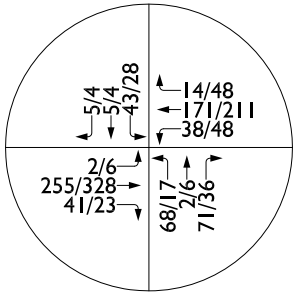
Exhibit 4-4

Existing Plus Project Conditions Traffic Volumes

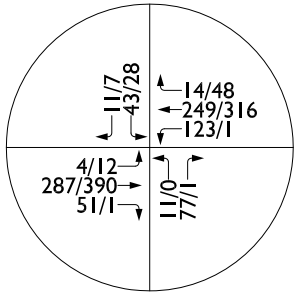
Legend:

10/20 = AM/PM Peak Hour Volumes

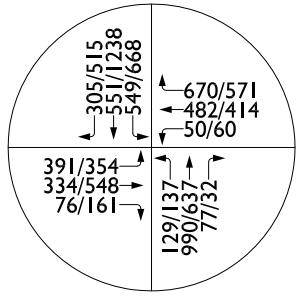




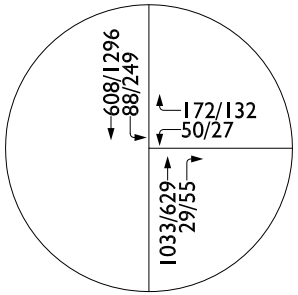
1. Cawston Avenue (NS) & Cottonwood Avenue (EW)



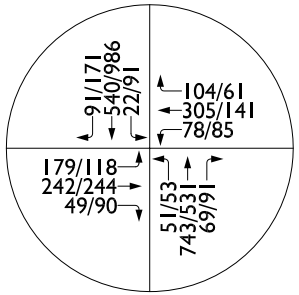
2. Project Access 2 - Via La Sierra Lane (NS) & Cottonwood Avenue (EW)



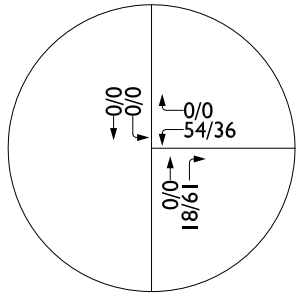
3. Sanderson Avenue (NS) & Ramona Expressway (EW)



4. Sanderson Avenue (NS) & Ramona Boulevard (EW)



5. Sanderson Avenue (NS) & Cottonwood Avenue (EW)

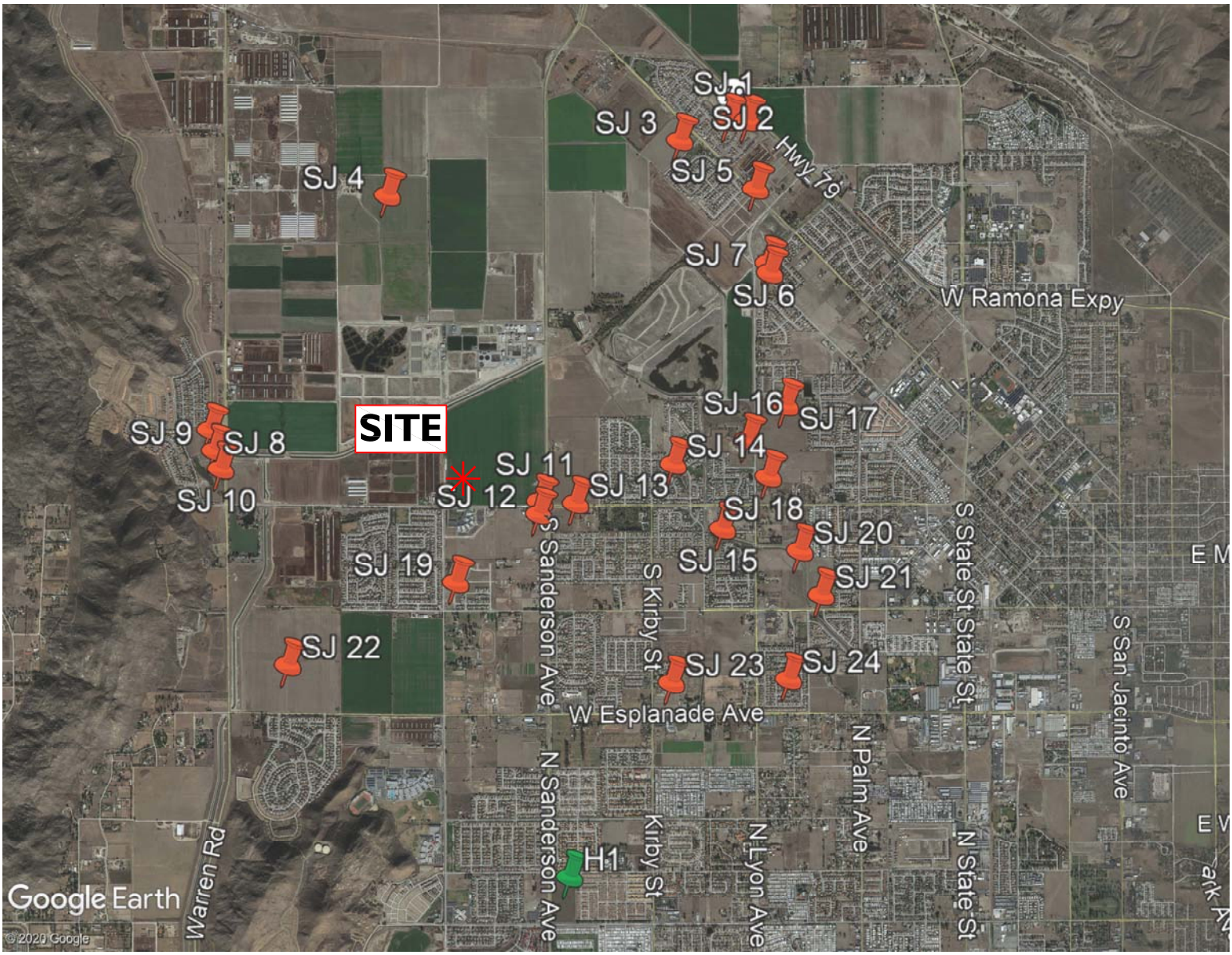


6. Cawston Avenue (NS) & Project Access 1 (EW)

N

Exhibit 4-5

Cumulative Projects Location Map



NOTE: See report for full list of cumulative projects and traffic analysis zones (TAZ).

Legend:

= City of San Jacinto Cumulative Project

= City of Hemet Cumulative Project

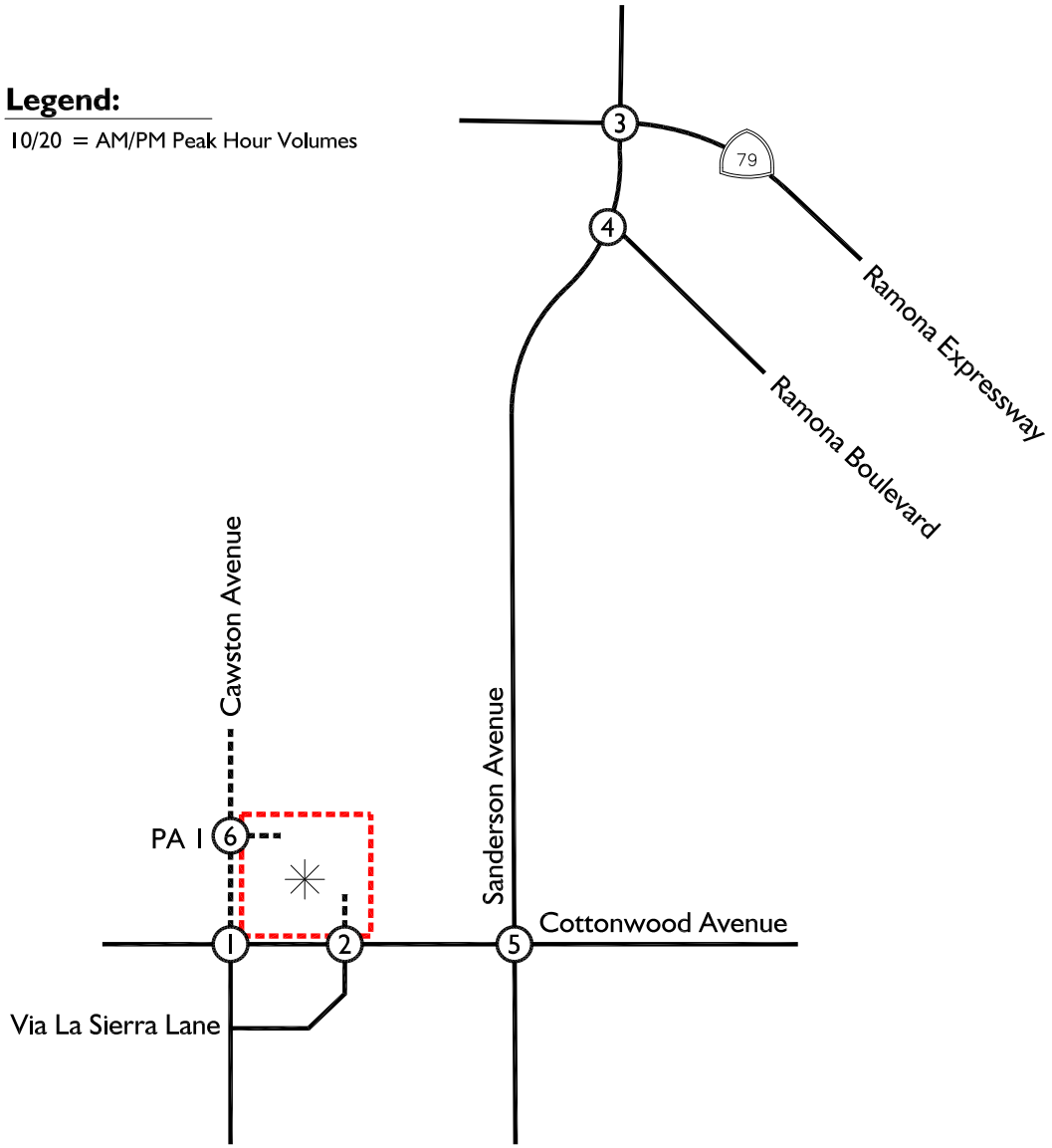
N

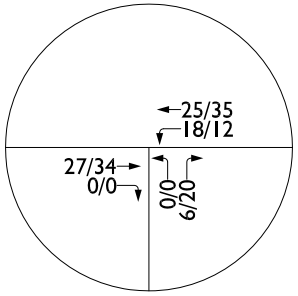
Exhibit 4-6

Cumulative Projects Traffic Volumes

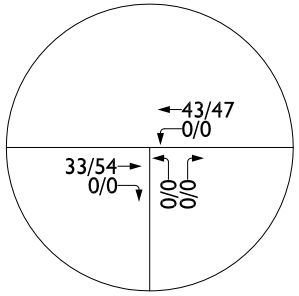
Legend:

10/20 = AM/PM Peak Hour Volumes

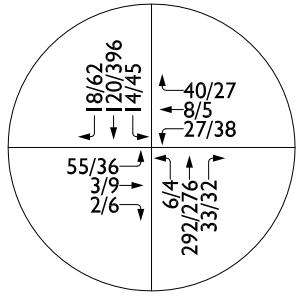




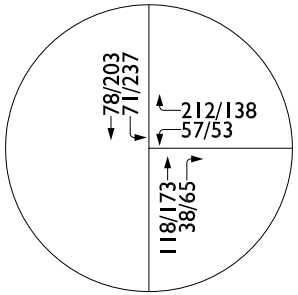
1. Cawston Avenue (NS) & Cottonwood Avenue (EW)



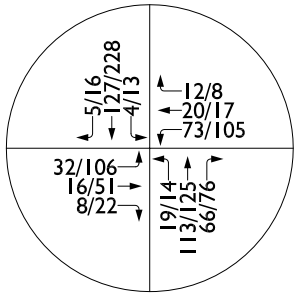
2. Project Access 2 - Via La Sierra Lane (NS) & Cottonwood Avenue (EW)



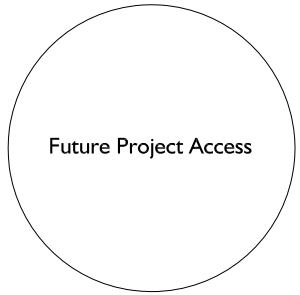
3. Sanderson Avenue (NS) & Ramona Expressway (EW)



4. Sanderson Avenue (NS) & Ramona Boulevard (EW)



5. Sanderson Avenue (NS) & Cottonwood Avenue (EW)



6. Cawston Avenue (NS) & Project Access 1 (EW)

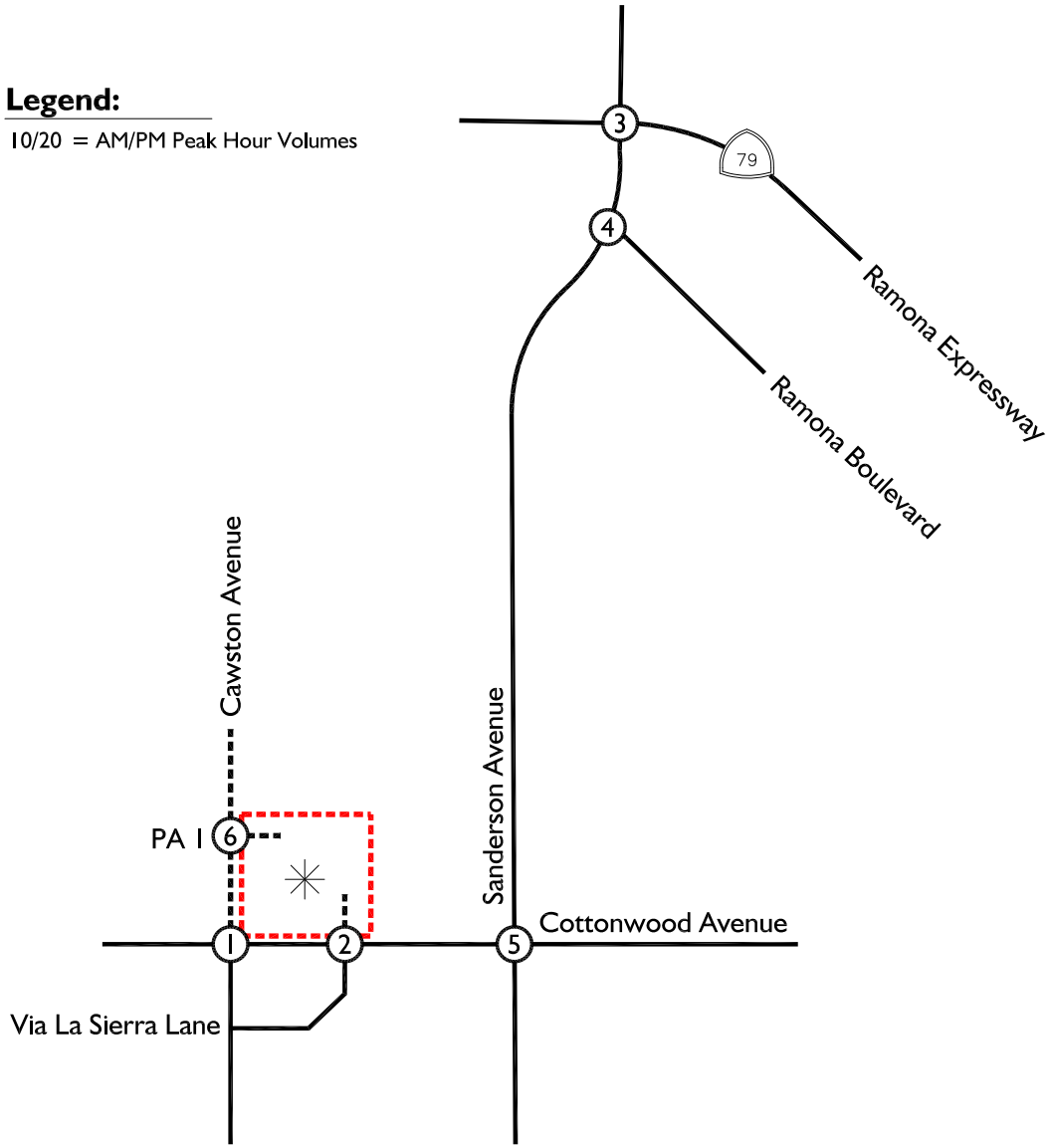
N

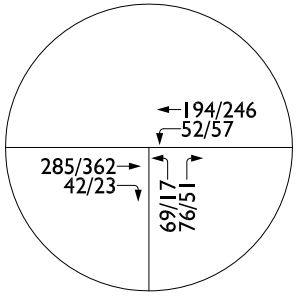
Exhibit 4-7

Project Opening Year (2022) Without Project Conditions Traffic Volumes

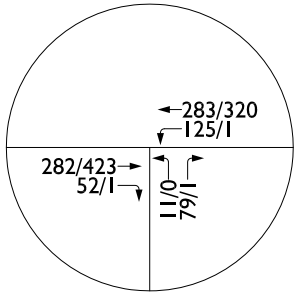
Legend:

10/20 = AM/PM Peak Hour Volumes

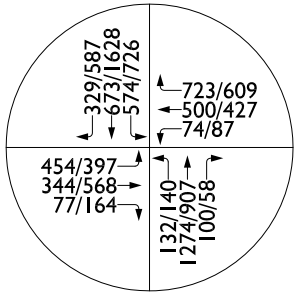




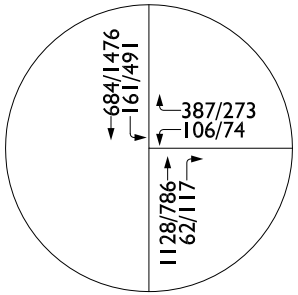
1. Cawston Avenue (NS) & Cottonwood Avenue (EW)



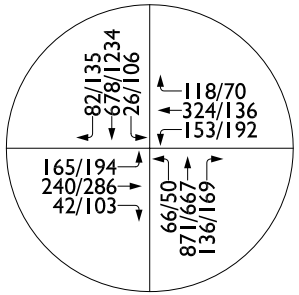
2. Project Access 2 - Via La Sierra Lane (NS) & Cottonwood Avenue (EW)



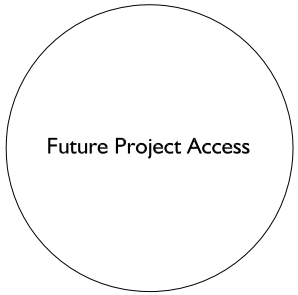
3. Sanderson Avenue (NS) & Ramona Expressway (EW)



4. Sanderson Avenue (NS) & Ramona Boulevard (EW)



5. Sanderson Avenue (NS) & Cottonwood Avenue (EW)



6. Cawston Avenue (NS) & Project Access 1 (EW)

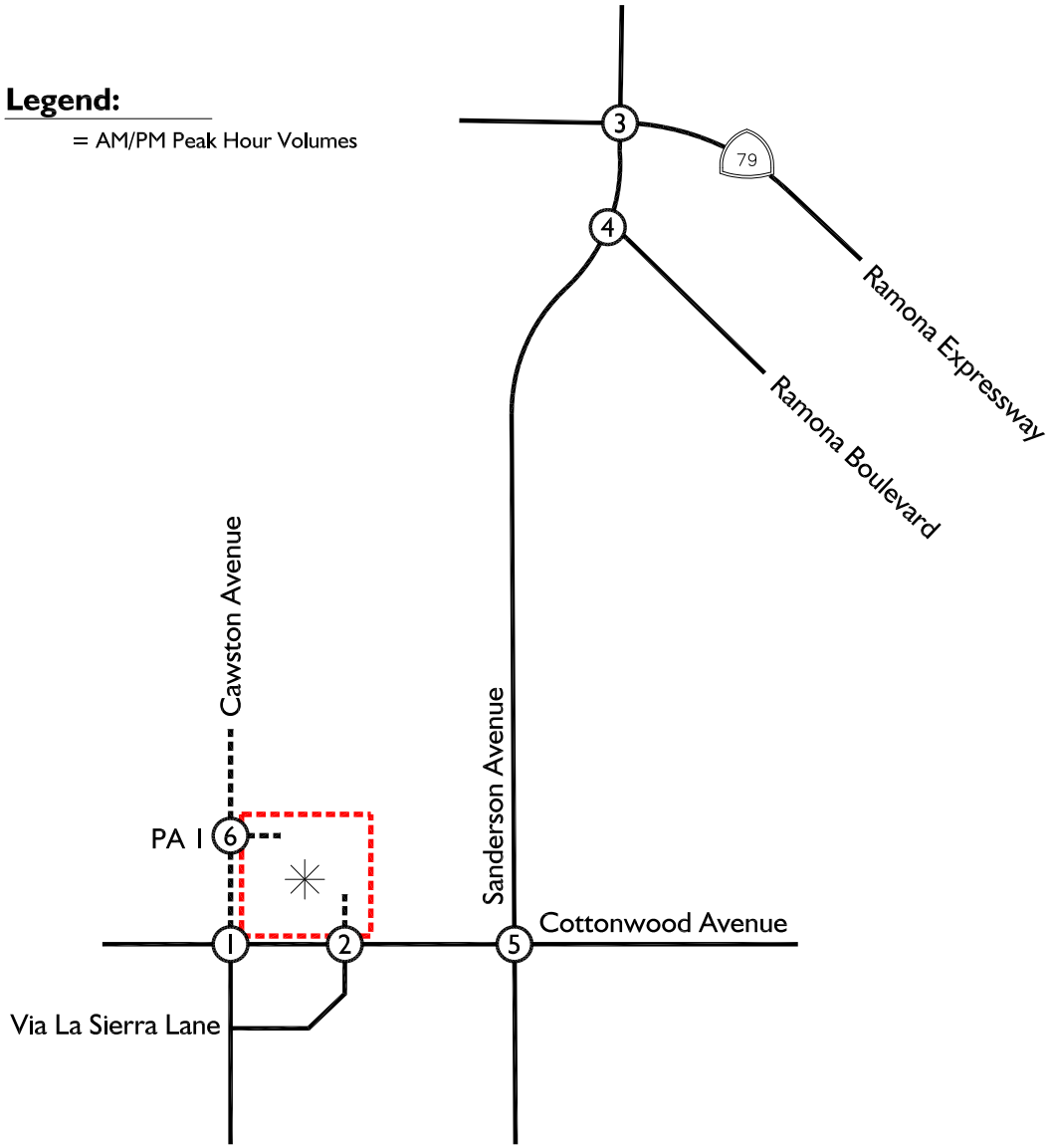
N

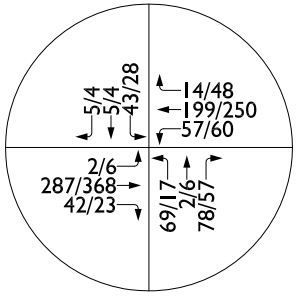
Exhibit 4-8

Project Opening Year (2022) With Project Conditions Traffic Volumes

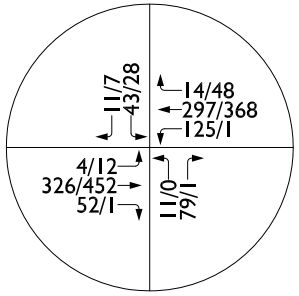
Legend:

= AM/PM Peak Hour Volumes

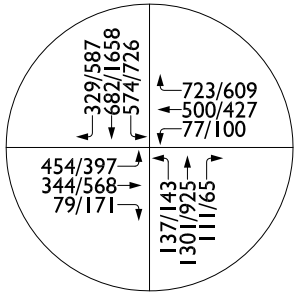




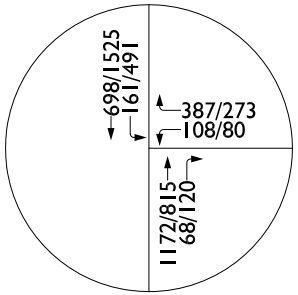
1. Cawston Avenue (NS) & Cottonwood Avenue (EW)



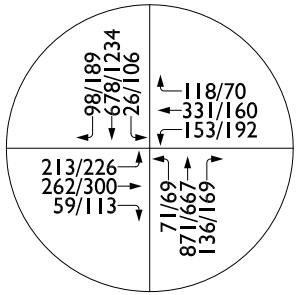
2. Project Access 2 - Via La Sierra Lane (NS) & Cottonwood Avenue (EW)



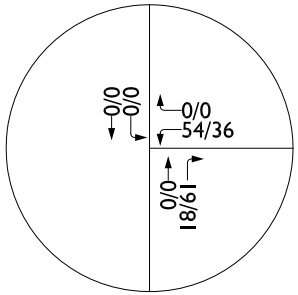
3. Sanderson Avenue (NS) & Ramona Expressway (EW)



4. Sanderson Avenue (NS) & Ramona Boulevard (EW)



5. Sanderson Avenue (NS) & Cottonwood Avenue (EW)



6. Cawston Avenue (NS) & Project Access 1 (EW)

N

Table 4-1
ITE Trip Generation Rates[1]

Land Use	Units[2]	ITE Code	AM			PM			Daily
			In	Out	Total	In	Out	Total	
Single Family Homes	DU	210	0.19	0.56	0.74	0.62	0.37	0.99	9.44

[1] Source: *2017 ITE Trip Generation Manual (10th Edition)*

[2] DU = Dwelling Units

Table 4-2
Project Trip Generation[1]

Proposed Land Uses									
Land Use (ITE Code)	**Quantity**	**Units[2]**	**AM**			**PM**			**Daily**
			In	**Out**	**Total**	**In**	**Out**	**Total**	
Single Family Homes (210)	194	DU	36	108	144	121	71	192	1,831
		Total	**36**	**108**	**144**	**121**	**71**	**192**	**1,831**

[1] Source: *2017 ITE Trip Generation Manual (10th Edition)*

[2] DU = Dwelling Units

Table 4-3
Cumulative Projects Trip Generation[1]

ID No.	Jurisdiction	Project Name / Case Number	Land Use	Quantity	Units[2]	Peak Hour						Daily
						AM			PM			
						In	Out	Total	In	Out	Total	
TAZ 1												
SJ 1	**San Jacinto**	TR 31886	Single Family Homes	1	DU	0	1	1	1	0	1	9
SJ 2	**San Jacinto**	TR 31886	Single Family Homes	64	DU	12	36	48	40	23	63	604
SJ 3	**San Jacinto**	TR 31037	Single Family Homes	129	DU	24	72	96	80	47	127	1,218
SJ 5	**San Jacinto**	TR 31037	Single Family Homes	71	DU	13	39	52	44	26	70	670
SJ 6	**San Jacinto**	TR 31282	Single Family Homes	274	DU	51	152	203	171	100	271	2,587
SJ 7	**San Jacinto**	TR 31154	Single Family Homes	46	DU	9	26	35	29	17	46	434
					TAZ 1 Total	**109**	**326**	**435**	**365**	**213**	**578**	**5,522**
TAZ 2												
SJ 4	**San Jacinto**	TR 37230	Single Family Homes	1,323	DU	245	734	979	825	485	1,310	12,489
					TAZ 2 Total (With Trip Reduction) [3]	**61**	**184**	**245**	**206**	**121**	**328**	**3,122**
TAZ 3												
SJ 8	**San Jacinto**	TR 30035	Single Family Homes	29	DU	5	16	21	18	11	29	274
SJ 9	**San Jacinto**	TR 30036	Single Family Homes	50	DU	9	28	37	31	18	49	472
SJ 10	**San Jacinto**	PM 30090	Single Family Homes	5	DU	1	3	4	3	2	5	47
					TAZ 3 Total	**15**	**47**	**62**	**52**	**31**	**83**	**793**
TAZ 4												
SJ 11	**San Jacinto**	CUP 1-08	Retail	139.000	TSF	81	50	131	254	275	529	5,247
					TAZ 4 Total	**81**	**50**	**131**	**254**	**275**	**529**	**5,247**
TAZ 5												
SJ 12	**San Jacinto**	TR 33420A1	Single Family Homes	161	DU	30	89	119	100	59	159	1,520
					TAZ 5 Total	**30**	**89**	**119**	**100**	**59**	**159**	**1,520**
TAZ 6												
SJ 13	**San Jacinto**	TR 32352	Single Family Homes	47	DU	9	26	35	29	17	46	444
					TAZ 6 Total	**9**	**26**	**35**	**29**	**17**	**46**	**444**
TAZ 7												
SJ 14	**San Jacinto**	TR 30481	Single Family Homes	34	DU	6	19	25	21	12	33	321
SJ 15	**San Jacinto**	TR 30878	Single Family Homes	15	DU	3	8	11	9	5	14	142
SJ 16	**San Jacinto**	TR 30944	Single Family Homes	14	DU	3	8	11	9	5	14	132
SJ 17	**San Jacinto**	TR 31384	Single Family Homes	47	DU	9	26	35	29	17	46	444
SJ 18	**San Jacinto**	TR 30481	Single Family Homes	8	DU	1	4	5	5	3	8	76
					TAZ 7 Total	**22**	**65**	**87**	**73**	**42**	**115**	**1,115**
TAZ 8												
SJ 19	**San Jacinto**	TR 30597	Single Family Homes	83	DU	15	46	61	52	30	82	784
SJ 22	**San Jacinto**	TM 33295	Single Family Homes	613	DU	113	340	453	382	225	607	5,787
					TAZ 8 Total	**128**	**386**	**514**	**434**	**255**	**689**	**6,571**
TAZ 9												
SJ 20	**San Jacinto**	TR 33716	Single Family Homes	49	DU	9	27	36	31	18	49	463
SJ 21	**San Jacinto**	TR 22665	Single Family Homes	79	DU	15	44	59	49	29	78	746
SJ 23	**San Jacinto**	TR 34664	Single Family Homes	35	DU	6	19	25	22	13	35	330
SJ 24	**San Jacinto**	TR 30603	Single Family Homes	10	DU	2	6	8	6	4	10	94
					TAZ 9 Total	**32**	**96**	**128**	**108**	**64**	**172**	**1,633**
TAZ 10												
H 1	**Hemet**	Zanderson Plaza	Shopping Center	40.000	TSF	23	14	37	73	79	152	1,510
			Fast Food with Drive Thru	15.000	TSF	307	295	602	255	235	490	7,064
			Service Station with Convenience Market	20	VFP	127	122	249	143	137	280	4,107
			Automated Car Wash	1	Tunnels	0	0	0	39	39	78	780
					TAZ 10 Total	**457**	**431**	**888**	**510**	**490**	**1,000**	**13,461**
					Total Cumulative Projects Trip Generation	***944***	***1,700***	***2,644***	***2,131***	***1,567***	***3,699***	***39,428***

[1] Cumulative Projects information provided by the City of San Jacinto and the City of Hemet

[2] DU = Dwelling Units
TSF = Thousand Square Feet
VPF = Vehicle Fueling Positions

[3] Since the proposed project is anticipated to be completed by 2022, it is assumed that the TR 37230 project will not completely built out by 2022 and will be approximately 25% developed. Therefore, only 25% of the total trips associated with TR 37230 will be included in the analysis.

5.0 MUTCD Traffic Signal Warrants Analysis

The following study intersections have been evaluated for signalization based on the peak hour signal warrants and procedures contained in the *California Manual on Uniform Traffic Control Devices (CA MUTCD), 2014 Edition:*

- **Int 1** – Cawston Avenue (NS) / Cottonwood Avenue (EW);
- **Int 2** – Project Access 2 – Via La Sierra Lane (NS) / Cottonwood Avenue (EW); and
- **Int 6** – Cawston Avenue (NS) / Project Access 1 (EW).

Table 5-1 summarizes the results of the MUTCD peak hour traffic signal warrant analyses at the study intersections noted above for all analysis scenarios evaluated in this study.

As shown in Table 5-1, **none of the study intersections are expected to satisfy traffic signal warrants for any of the analysis scenarios evaluated in this study.**

Detailed MUTCD signal warrant analysis sheets are included in Appendix B.

Table 5-1
MUTCD Peak Hour Traffic Signal Warrant Analysis Summary

Analysis Scenario	Intersection					
	1. Cawston Avenue (NS) / Cottonwood Avenue (EW)		2. Project Access 2 - Via La Sierra Lane (NS) / Cottonwood Avenue (EW)		6. Cawston Avenue (NS) / Project Access 1 (EW)	
	AM	PM	AM	PM	AM	PM
Existing Conditions	NO	NO	NO	NO	N/A	N/A
Existing Plus Project Conditions	NO	NO	NO	NO	NO	NO
Project Opening Year (2022) Without Project Conditions	NO	NO	NO	NO	N/A	N/A
Project Opening Year (2022) With Project Conditions	NO	NO	NO	NO	NO	NO

6.0 Study Intersection Peak Hour LOS Analysis

This section of the report provides a discussion on the study intersection peak hour level of service analysis and findings.

6.1 Existing Conditions Level of Service

Existing Conditions level of service (LOS) calculations for the study intersections are shown in Table 6-1 and are based upon the baseline existing (2021) volumes shown in Exhibit 3-2, and the existing geometry shown in Exhibit 3-1.

As shown in Table 6-1, all study intersections are currently operating at an acceptable LOS (LOS D or better) during the peak hours for Existing Conditions.

Detailed LOS analysis sheets for Existing Conditions are contained in Appendix C.

6.2 Existing Plus Project Conditions Level of Service

Existing Plus Project Conditions level of service (LOS) calculations for the study intersections are shown in Table 6-2 and are based upon the Existing Plus Project Conditions traffic volumes shown in Exhibit 4-4, and the existing geometry shown in Exhibit 3-1.

As shown in Table 6-2, all study intersections are forecast to continue to operate at an acceptable LOS (LOS D or better) during the peak hours for Existing Plus Project Conditions with exception to the following study intersection:

- Project Access 2 – Via La Sierra Lane (NS) / Cottonwood Avenue (EW)
    - AM Peak Hour – LOS E (41.7 secs)

As also shown in Table 6-2, based on agency-established thresholds, the proposed project is required to contribute to improvements at the following study intersections for Existing Plus Project Conditions:

- Project Access 2 – Via La Sierra Lane (NS) / Cottonwood Avenue (EW).

The following recommended improvements are identified to achieve acceptable level of service (LOS D or better) for Existing Plus Project Conditions:

Intersection Improvement #1	**Int 2: Project Access 2 – Via La Sierra Lane / Cottonwood Avenue:** Install a traffic signal.

As shown in Table 6-2, assuming implementation of the recommended improvements, the all study intersections are forecast to operate at an acceptable level of service (LOS D or better) for Existing Plus Project Conditions.

However, as previously discussed in Section 5.0 of this study, this study intersection does not satisfy the warrants for traffic signalization based on the MUTCD peak hour signal warrants and procedures for any of the analysis scenarios. As a result, RK recommends that signalization at the deficient study intersection be performed once traffic volumes and patterns are observed to satisfy the MUTCD peak hour signal warrants and procedures.

Detailed LOS analysis sheets for Existing Plus Project Conditions are contained in Appendix D.

Detailed LOS analysis sheets for Existing Plus Project Conditions With Improvements are contained in Appendix E.

6.3 Project Opening Year (2022) Without Project Conditions Level of Service

Project Opening Year (2022) Without Project Conditions level of service (LOS) calculations for the study intersections are shown in Table 6-3 and are based upon the Project Opening Year (2022) Without Project Conditions traffic volumes shown in Exhibit 4-7, and the existing geometry shown in Exhibit 3-1.

As shown in Table 6-3, all study intersections are forecast to continue to operate at an acceptable LOS (LOS D or better) during the peak hours for Project Opening Year (2022) Without Project Conditions with exception to the following study intersections:

- Sanderson Avenue (NS) / Cottonwood Avenue (EW)
    - AM Peak Hour – LOS E (78.0 secs)

Detailed LOS analysis sheets for Project Opening Year (2022) Without Project Conditions are contained in Appendix F.

6.4 Project Opening Year (2022) With Project Conditions Level of Service

Project Opening Year (2022) With Project Conditions level of service (LOS) calculations for the study intersections are shown in Table 6-4 and are based upon the Project Opening Year (2022) With Project Conditions traffic volumes shown in Exhibit 4-8, and the existing geometry shown in Exhibit 3-1.

As shown in Table 5-4, all study intersections are forecast to continue to operate at an acceptable LOS (LOS D or better) during the peak hours for Project Opening Year (2022) With Project Conditions with exception to the following study intersections:

- Project Access 2 – Via La Sierra Lane (NS) / Cottonwood Avenue (EW)
    - AM Peak Hour – LOS F (57.4 secs)
- Sanderson Avenue (NS) / Cottonwood Avenue (EW)
    - AM Peak Hour – LOF E (80.0 secs)

As also shown in Table 6-4, based on agency-established thresholds, the proposed project is required to contribute to improvements at the following study intersection for Project Opening Year (2022) With Project Conditions:

- Project Access 2 – Via La Sierra Lane (NS) / Cottonwood Avenue (EW).

The following recommended improvements are identified to achieve acceptable level of service (LOS D or better) for Opening Year (2022) With Project Conditions:

Intersection Improvement #2	**Int 2: Project Access 2 – Via La Sierra Lane / Cottonwood Avenue (Same as Improvement #1):** Install a traffic signal.

As shown in Table 6-4, assuming implementation of the recommended improvements, the all study intersections are forecast to operate at an acceptable level of service (LOS D or better) for Opening Year (2022) With Project Conditions.

However, as previously discussed in Section 5.0 of this study, this study intersection does not satisfy the warrants for traffic signalization based on the MUTCD peak hour signal warrants and procedures for any of the analysis scenarios. As a result, RK recommends that signalization at the deficient study intersection be performed once traffic volumes and patterns are observed to satisfy the MUTCD peak hour signal warrants and procedures.

Detailed LOS analysis sheets for Project Opening Year (2022) With Project Conditions are contained in Appendix G.

Detailed LOS analysis sheets for Project Opening Year (2022) With Project Conditions With Improvements are contained in Appendix H.

Table 6-1
Study Intersection LOS Analysis Summary
Existing Conditions

	Intersection	Traffic Control[3]	Delay (Secs)[1,2]		Level of Service	
			AM	PM	AM	PM
1.	Cawston Avenue (NS) / Cottonwood Avenue (EW)	CSS	14.5	14.2	B	B
2.	Project Access 2 - Via La Sierra Lane (NS) / Cottonwood Avenue (EW)	CSS	20.1	10.6	C	B
3.	Sanderson Avenue (NS) / Ramona Expressway (EW)	TS	53.0	36.3	D	D
4.	Sanderson Avenue (NS) / Ramona Boulevard (EW)	TS	10.3	10.2	B	B
5.	Sanderson Avenue (NS) / Cottonwood Avenue (EW)	TS	18.9	17.0	B	B
6.	Cawston Avenue (NS) / Project Access 1 (EW)	CSS	- -	- -	- -	- -

[1] Deficient operation shown in **Bold**.

[2] HCM Analysis Software: Synchro, Version 10.0. Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control. For intersections with cross-street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal
CSS = Cross-Street Stop

Table 6-2
Study Intersection LOS Analysis Summary
Existing Plus Project Conditions

	Intersection	Traffic Control[3]	Existing Conditions				Existing Plus Project Conditions							
			Delay (Secs)[1,2]		Level of Service		Delay (Secs)[1,2]		Increase in Delay (Secs)		Level of Service		Requires Improvement?	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1.	Cawston Avenue (NS) / Cottonwood Avenue (EW)	CSS	14.5	14.2	B	B	18.3	18.2	3.8	4.0	C	C	No	No
2.	Project Access 2 - Via La Sierra Lane (NS) / Cottonwood Avenue (EW)	CSS	20.1	10.6	C	B	**41.7**	17.9	**21.6**	7.3	**E**	C	**Yes**	No
	With Improvements	*TS*	- -	- -	- -	- -	*5.9*	*6.1*	*-14.2*	*-4.5*	*A*	*A*	*No*	*No*
3.	Sanderson Avenue (NS) / Ramona Expressway (EW)	TS	53.0	36.3	D	D	53.8	36.5	0.8	0.2	D	D	No	No
4.	Sanderson Avenue (NS) / Ramona Boulevard (EW)	TS	10.3	10.2	B	B	10.4	10.3	0.1	0.1	B	B	No	No
5.	Sanderson Avenue (NS) / Cottonwood Avenue (EW)	TS	18.9	17.0	B	B	19.6	17.9	0.7	0.9	B	B	No	No
6.	Cawston Avenue (NS) / Project Access 1 (EW)	CSS	- -	- -	- -	- -	8.8	8.8	- -	- -	A	A	No	No

[1] Deficient operation shown in **Bold**.

[2] HCM Analysis Software: Synchro, Version 10.0. Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control. For intersections with cross-street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal

CSS = Cross-Street Stop

Table 6-3
Study Intersection LOS Analysis Summary
Project Opening Year (2022) Without Project Conditions

	Intersection	Traffic Control[3]	Delay (Secs)[1,2]		Level of Service	
			AM	PM	AM	PM
1.	Cawston Avenue (NS) / Cottonwood Avenue (EW)	CSS	17.0	16.0	C	C
2.	Project Access 2 - Via La Sierra Lane (NS) / Cottonwood Avenue (EW)	CSS	23.1	11.1	C	B
3.	Sanderson Avenue (NS) / Ramona Expressway (EW)	TS	**78.0**	45.7	**E**	D
4.	Sanderson Avenue (NS) / Ramona Boulevard (EW)	TS	23.1	23.6	C	C
5.	Sanderson Avenue (NS) / Cottonwood Avenue (EW)	TS	21.6	21.0	C	C
6.	Cawston Avenue (NS) / Project Access 1 (EW)	CSS	- -	- -	- -	- -

[1] Deficient operation shown in **Bold**.

[2] HCM Analysis Software: Synchro, Version 10.0. Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control. For intersections with cross-street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal
CSS = Cross-Street Stop

Table 6-4

Study Intersection LOS Analysis Summary

Project Opening Year (2022) With Project Conditions

	Intersection	Traffic Control[3]	Project Opening Year (2022) Without Project Conditions				Project Openingt Year (2022) With Project Conditions							
			Delay (Secs)[1,2]		Level of Service		Delay (Secs)[1,2]		Increase in Delay (Secs)		Level of Service		Requires Improvement?[4]	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1.	Cawston Avenue (NS) / Cottonwood Avenue (EW)	CSS	17.0	16.0	C	C	22.3	22.1	5.3	6.1	C	C	No	No
2.	Project Access 2 - Via La Sierra Lane (NS) / Cottonwood Avenue (EW)	CSS	23.1	11.1	C	B	**57.4**	21.0	34.3	9.9	**F**	C	**Yes**	No
	With Improvements	*TS*	- -	- -	- -	- -	*6.0*	*6.2*	*-17.1*	*-4.9*	*A*	*A*	*No*	*No*
3.	Sanderson Avenue (NS) / Ramona Expressway (EW)	TS	**78.0**	45.7	**E**	D	**80.0**	47.2	2.0	1.5	**E**	D	No	No
4.	Sanderson Avenue (NS) / Ramona Boulevard (EW)	TS	23.1	23.6	C	C	23.9	23.8	0.8	0.2	C	C	No	No
5.	Sanderson Avenue (NS) / Cottonwood Avenue (EW)	TS	21.6	21.0	C	C	22.8	22.0	- -	- -	C	C	No	No
6.	Cawston Avenue (NS) / Project Access 1 (EW)	CSS	- -	- -	- -	- -	8.8	8.8	- -	- -	A	A	No	No

[1] Deficient operation shown in **Bold**.

[2] HCM Analysis Software: Synchro, Version 10.0. Per the Highway Capacity Manual, overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control. For intersections with cross-street stop control, the delay and level of service for the worst individual movement (or movements sharing a single lane) are shown.

[3] TS = Traffic Signal

CSS = Cross-Street Stop

7.0 Vehicle Miles Traveled (VMT) Analysis

An analysis of the Vehicle Miles Traveled (VMT) has been prepared for the proposed project.

Per Senate Bill (SB) 743, transportation impacts will transition from using vehicle level of service (LOS) to VMT as the primary measure of a transportation facility's operation success under CEQA. Currently, the City of San Jacinto does not have any established and adopted thresholds of significance for VMT. Hence, the VMT analysis provided is intended for informational purposes.

VMT analysis was performed using a web-based VMT screening tool developed by the Western Riverside Council of Governments (WRCOG).

Based on the WRCOG VMT Screening Tool, projects may be presumed to have a less significant impact on the transportation network if any of the following screening tests are valid:

1. Project is located within a Transit Priority Area (TPA); or

2. The Project's traffic analysis zone (TAZ) total daily VMT per service population performs at or below the jurisdictional average of total VMT per service population under base year (2012) conditions.

Based on review of the WRCOG data for the project, site, WRCOG does not have specific VMT data listed and published for this specific parcel. However, based on a recent traffic study prepared for a nearby residential project located approximately 2,700 feet to the east of the proposed project site on Cottonwood Avenue, and as shown in Table 7-1, based on WRCOG data, the nearby site has a 2012 daily total VMT of 27.70 per service station which is lower than the jurisdictional average 2012 daily VMT of 28.88 per service station.

Due to the very close proximity, the proposed project can be expected to have the same VMT metrics as this nearby site. Hence, similar to the nearby site, the proposed project is screened out from requiring a full VMT analysis and the project is expected to have a less than significant VMT impact.

Output of the WRCOG VMT Screening Tool for the nearby site is provided in Appendix I.

Table 7-1
Vehicle Miles Traveled (VMT) Analaysis Summary based on Nearby Site

Screen Test #1				
Neaby Site TAZ Number	**Within a Transit Priority Area (TPA)**			**Pass / Fail**
TAZ 4,210	No			Fail
Screen Test #2				
Condition	**Total Daily VMT / Service Population**		**TAZ VMT less than Jurisidiction**	**Pass / Fail**
	San Jacinto	**TAZ 4,210**		
Base Year 2012	28.88	27.70	Yes	**Pass**

8.0 Findings, Conclusions & Recommendations

The purpose of this traffic impact analysis is to evaluate the proposed Rancho de Alamo Tentative Tract Map (TTM) 37881 (hereinafter referred to as project) from a traffic and circulation standpoint and determine whether the proposed project will have a significant impact on the environment.

The proposed project is to be located at the northeast corner of Cawston Avenue and Cottonwood Avenue in the City of San Jacinto. This study has been conducted pursuant to the City of San Jacinto *Traffic Impact Analysis Guidelines for Vehicle Miles Traveled and Level of Service Assessment (June 2020)*, the City of San Jacinto General Plan (October 2012), and the California Environmental Quality Act (CEQA) requirements.

This traffic study has been prepared in accordance with the scope of work reviewed and approved by the City of San Jacinto staff.

The proposed project is to be located at the northeast corner of Cawston Avenue and Cottonwood Avenue in the City of San Jacinto. The project site is currently undeveloped.

The proposed project consists of the construction of 194 single family residential dwelling units.

Access for the proposed project is planned as follows:

- One unsignalized full access intersection to be constructed at the north leg of the Via La Sierra Lane / Cottonwood Avenue intersection; and
- One unsignalized full access along Cawston Avenue, north of Cottonwood Avenue.

The project is planned to open in 2022 and will be evaluated in one (1) single phase.

8.1 Intersection Level of Service Study Area

The study area included in this analysis has been determined based upon existing and future transportation facilities within the vicinity of the site where the project may contribute a significant amount of traffic. Based on preliminary discussion with the City's traffic consultant, review of the project's preliminary trip generation, geographical area, and circulation system, the traffic study evaluates the following study intersections:

1. Cawston Avenue (NS) / Cottonwood Avenue (EW);
2. Project Access 2 – Via La Sierra Lane (NS) / Cottonwood Avenue (EW);
3. Sanderson Avenue (NS) / Ramona Expressway (EW);
4. Sanderson Avenue (NS) / Ramona Boulevard (EW);
5. Sanderson Avenue (NS) / Cottonwood Avenue (EW); and
6. Cawston Avenue (NS) / Project Access 1 (EW).

The study intersections level of service performance is evaluated for the following study scenarios for AM and PM peak hour conditions:

- Existing Conditions;
- Existing Plus Project Conditions;
- Project Opening Year (2022) Without Project Conditions; and
- Project Opening Year (2022) With Project Conditions.

8.2 MUTCD Traffic Signal Warrants Analysis Summary

The following study intersections have been evaluated for signalization based on the peak hour signal warrants and procedures contained in the *California Manual on Uniform Traffic Control Devices (CA MUTCD), 2014 Edition:*

- **Int 1** – Cawston Avenue (NS) / Cottonwood Avenue (EW);
- **Int 2** – Project Access 2 – Via La Sierra Lane (NS) / Cottonwood Avenue (EW); and
- **Int 6** – Cawston Avenue (NS) / Project Access 1 (EW).

Based on the results of the CA MUTCD traffic signal warrants, **none of the study intersections are expected to satisfy traffic signal warrants for any of the analysis scenarios evaluated in this study.**

8.3 Study Intersection Level of Service Analysis Summary

Existing Conditions

All study intersections are currently operating at an acceptable LOS (LOS D or better) during the peak hours for Existing Conditions.

Existing Plus Project Conditions

All study intersections are forecast to continue to operate at an acceptable LOS (LOS D or better) during the peak hours for Existing Plus Project Conditions with exception to the following study intersection:

- Project Access 2 – Via La Sierra Lane (NS) / Cottonwood Avenue (EW)
    - AM Peak Hour – LOS E (41.7 secs)

Based on agency-established thresholds, the proposed project is required to contribute to improvements at the following study intersections for Existing Plus Project Conditions:

- Project Access 2 – Via La Sierra Lane (NS) / Cottonwood Avenue (EW).

The following recommended improvements are identified to achieve acceptable level of service (LOS D or better) for Existing Plus Project Conditions:

Intersection Improvement #1	**Int 2: Project Access 2 – Via La Sierra Lane / Cottonwood Avenue:** Install a traffic signal.

Assuming implementation of the recommended improvements, the all study intersections are forecast to operate at an acceptable level of service (LOS D or better) for Existing Plus Project Conditions.

However, as previously discussed in Section 5.0 of this study, this study intersection does not satisfy the warrants for traffic signalization based on the MUTCD peak hour signal warrants and procedures for any of the analysis scenarios. As a result, RK recommends that signalization at the deficient study intersection be performed once traffic volumes and patterns are observed to satisfy the MUTCD peak hour signal warrants and procedures.

Project Opening Year (2022) Without Project Conditions Level of Service

All study intersections are forecast to continue to operate at an acceptable LOS (LOS D or better) during the peak hours for Project Opening Year (2022) Without Project Conditions with exception to the following study intersections:

- Sanderson Avenue (NS) / Cottonwood Avenue (EW)
    - AM Peak Hour – LOS E (78.0 secs)

Project Opening Year (2022 With Project Conditions Level of Service

All study intersections are forecast to continue to operate at an acceptable LOS (LOS D or better) during the peak hours for Project Opening Year (2022) With Project Conditions with exception to the following study intersections:

- Project Access 2 – Via La Sierra Lane (NS) / Cottonwood Avenue (EW)
    - AM Peak Hour – LOS F (57.4 secs)
- Sanderson Avenue (NS) / Cottonwood Avenue (EW)
    - AM Peak Hour – LOF E (80.0 secs)

Based on agency-established thresholds, the proposed project is required to contribute to improvements at the following study intersection for Project Opening Year (2022) With Project Conditions:

- Project Access 2 – Via La Sierra Lane (NS) / Cottonwood Avenue (EW).

The following recommended improvements are identified to achieve acceptable level of service (LOS D or better) for Opening Year (2022) With Project Conditions:

Intersection Improvement #2	**Int 2: Project Access 2 – Via La Sierra Lane / Cottonwood Avenue (Same as Improvement #1):** Install a traffic signal.

Assuming implementation of the recommended improvements, the all study intersections are forecast to operate at an acceptable level of service (LOS D or better) for Opening Year (2022) With Project Conditions.

However, as previously discussed in Section 5.0 of this study, this study intersection does not satisfy the warrants for traffic signalization based on the MUTCD peak hour signal warrants and procedures for any of the analysis scenarios. As a result, RK recommends that signalization at the deficient study intersection be performed once traffic volumes and patterns are observed to satisfy the MUTCD peak hour signal warrants and procedures.

8.4 Vehicles Miles Traveled (VMT) Summary

An analysis of the Vehicle Miles Traveled (VMT) has been prepared for the proposed project.

Per Senate Bill (SB) 743, transportation impacts will transition from using vehicle level of service (LOS) to VMT as the primary measure of a transportation facility's operation success under CEQA. Currently, the City of San Jacinto does not have any established and adopted thresholds of significance for VMT. Hence, the VMT analysis provided is intended for informational purposes.

VMT analysis was performed using a web-based VMT screening tool developed by the Western Riverside Council of Governments (WRCOG).

Based on the WRCOG VMT Screening Tool, projects may be presumed to have a less significant impact on the transportation network if any of the following screening tests are valid:

1. Project is located within a Transit Priority Area (TPA); or

2. The Project's traffic analysis zone (TAZ) total daily VMT per service population performs at or below the jurisdictional average of total VMT per service population under base year (2012) conditions.

Based on review of the WRCOG data for the project, site, WRCOG does not have specific VMT data listed and published for this specific parcel. However, based on a recent traffic study prepared for a nearby residential project located approximately 2,700 feet to the east of the proposed project site on Cottonwood Avenue, and as shown in Table 6-1, based on WRCOG data, the nearby site has a 2012 daily total VMT of 27.70 per service station which is lower than the jurisdictional average 2012 daily VMT of 28.88 per service station.

Due to the very close proximity, the proposed project can be expected to have the same VMT metrics as this nearby site. Hence, similar to the nearby site, the proposed project is screened out from requiring a full VMT analysis and the project is expected to have a less than significant VMT impact.

Appendices

Appendix A

Traffic Count Worksheets

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of San Jacinto
N/S: Cawston Avenue
E/W: Cottonwood Avenue
Weather: Clear

File Name : SJCCACOAM
Site Code : 10515682
Start Date : 12/10/2015
Page No : 1

Groups Printed- Total Volume

	Cottonwood Avenue Westbound			Cawston Avenue Northbound			Cottonwood Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	6	37	43	8	14	22	71	4	75	140
07:15 AM	2	55	57	6	9	15	51	2	53	125
07:30 AM	7	50	57	0	13	13	52	3	55	125
07:45 AM	8	44	52	4	5	9	51	3	54	115
Total	23	186	209	18	41	59	225	12	237	505
08:00 AM	6	38	44	12	6	18	63	5	68	130
08:15 AM	6	39	45	22	20	42	52	11	63	150
08:30 AM	9	26	35	22	30	52	59	17	76	163
08:45 AM	2	31	33	8	5	13	28	3	31	77
Total	23	134	157	64	61	125	202	36	238	520
Grand Total	46	320	366	82	102	184	427	48	475	1025
Apprch %	12.6	87.4		44.6	55.4		89.9	10.1		
Total %	4.5	31.2	35.7	8	10	18	41.7	4.7	46.3	

	Cottonwood Avenue Westbound			Cawston Avenue Northbound			Cottonwood Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	8	**44**	**52**	4	5	9	51	3	54	115
08:00 AM	6	38	44	12	6	18	**63**	5	68	130
08:15 AM	6	39	45	**22**	20	42	52	11	63	150
08:30 AM	**9**	26	35	22	**30**	**52**	59	**17**	**76**	**163**
Total Volume	29	147	176	60	61	121	225	36	261	558
% App. Total	16.5	83.5		49.6	50.4		86.2	13.8		
PHF	.806	.835	.846	.682	.508	.582	.893	.529	.859	.856

Counts Unlimited
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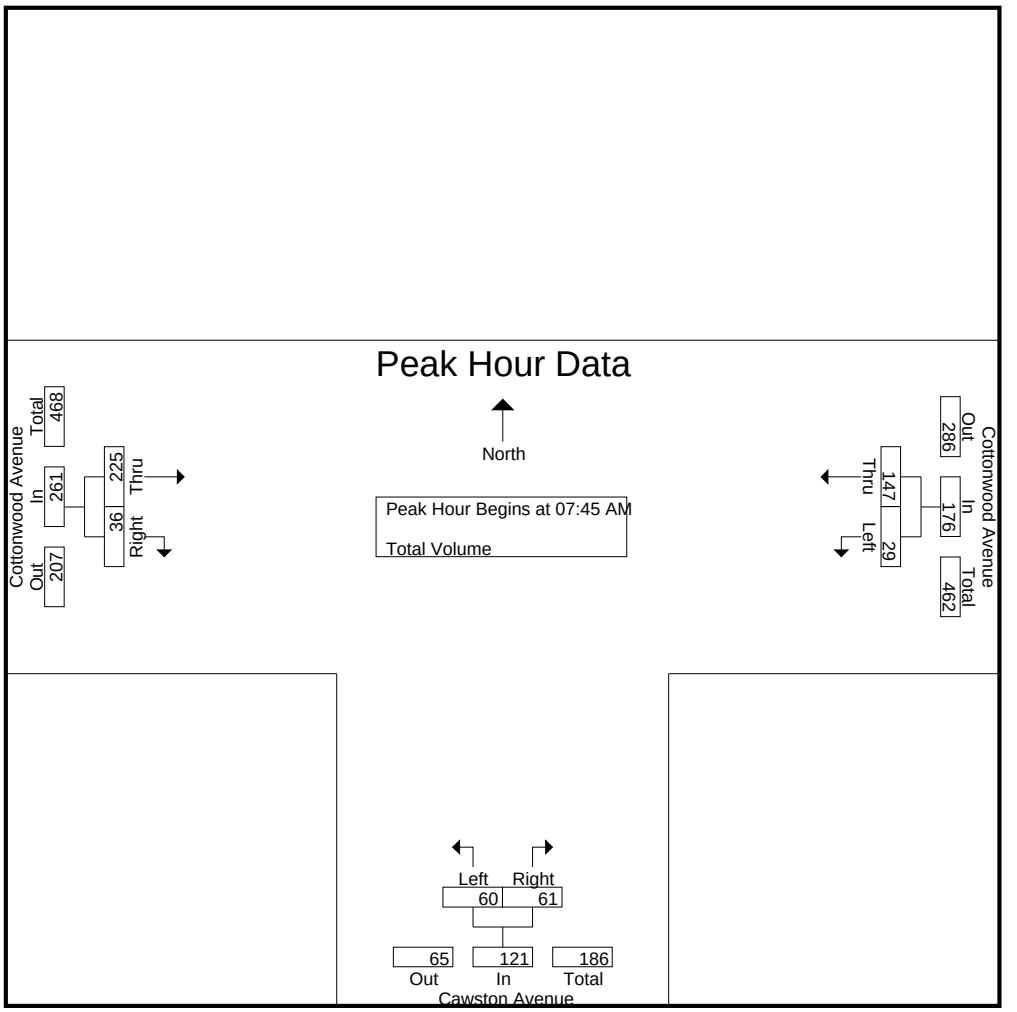
City of San Jacinto
N/S: Cawston Avenue
E/W: Cottonwood Avenue
Weather: Clear

File Name : SJCCACOAM
Site Code : 10515682
Start Date : 12/10/2015
Page No : 2



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

	07:15 AM			08:00 AM			07:45 AM		
+0 mins.	2	**55**	**57**	12	6	18	51	3	54
+15 mins.	7	50	57	**22**	20	42	**63**	5	68
+30 mins.	**8**	44	52	22	**30**	**52**	52	11	63
+45 mins.	6	38	44	8	5	13	59	**17**	**76**
Total Volume	23	187	210	64	61	125	225	36	261
% App. Total	11	89		51.2	48.8		86.2	13.8	
PHF	.719	.850	.921	.727	.508	.601	.893	.529	.859

Counts Unlimited
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City of San Jacinto
N/S: Cawston Avenue
E/W: Cottonwood Avenue
Weather: Clear

File Name : SJCCACOPM
Site Code : 10515682
Start Date : 12/10/2015
Page No : 1

Groups Printed- Total Volume

	Cottonwood Avenue Westbound			Cawston Avenue Northbound			Cottonwood Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	8	47	55	4	6	10	58	1	59	124
04:15 PM	6	60	66	4	5	9	69	4	73	148
04:30 PM	9	42	51	6	8	14	64	6	70	135
04:45 PM	10	47	57	2	6	8	75	6	81	146
Total	33	196	229	16	25	41	266	17	283	553
05:00 PM	14	35	49	3	8	11	78	4	82	142
05:15 PM	7	45	52	5	3	8	68	4	72	132
05:30 PM	2	55	57	4	4	8	70	1	71	136
05:45 PM	13	41	54	5	9	14	51	4	55	123
Total	36	176	212	17	24	41	267	13	280	533
Grand Total	69	372	441	33	49	82	533	30	563	1086
Apprch %	15.6	84.4		40.2	59.8		94.7	5.3		
Total %	6.4	34.3	40.6	3	4.5	7.6	49.1	2.8	51.8	

	Cottonwood Avenue Westbound			Cawston Avenue Northbound			Cottonwood Avenue Eastbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	6	**60**	**66**	4	5	9	69	4	73	**148**
04:30 PM	9	42	51	**6**	**8**	**14**	64	**6**	70	135
04:45 PM	10	47	57	2	6	8	75	6	81	146
05:00 PM	**14**	35	49	3	8	11	**78**	4	**82**	142
Total Volume	39	184	223	15	27	42	286	20	306	571
% App. Total	17.5	82.5		35.7	64.3		93.5	6.5		
PHF	.696	.767	.845	.625	.844	.750	.917	.833	.933	.965

Counts Unlimited
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City of San Jacinto
N/S: Cawston Avenue
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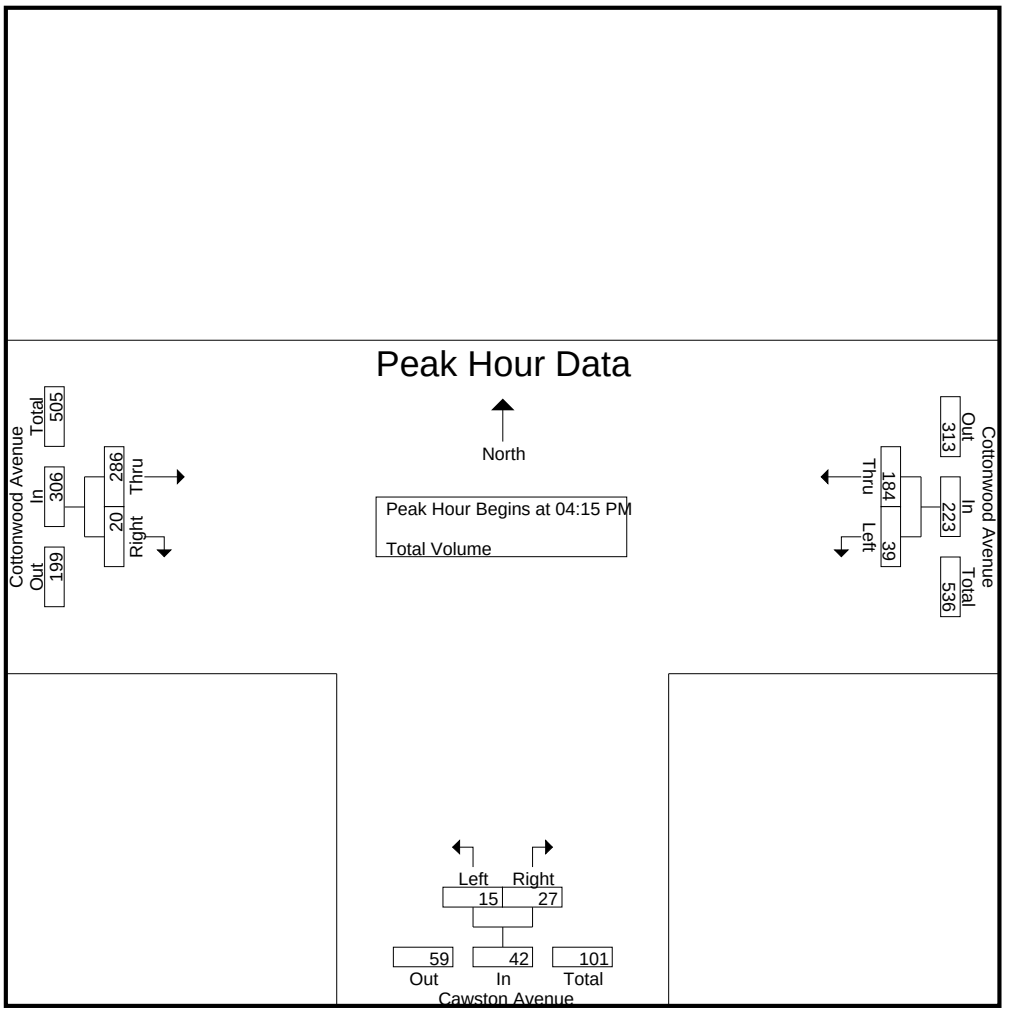
File Name : SJCCACOPM
Site Code : 10515682
Start Date : 12/10/2015



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:15 PM			04:15 PM		
+0 mins.	8	47	55	4	5	9	69	4	73
+15 mins.	6	**60**	**66**	**6**	**8**	**14**	64	**6**	70
+30 mins.	9	42	51	2	6	8	75	6	81
+45 mins.	**10**	47	57	3	8	11	**78**	4	**82**
Total Volume	33	196	229	15	27	42	286	20	306
% App. Total	14.4	85.6		35.7	64.3		93.5	6.5	
PHF	.825	.817	.867	.625	.844	.750	.917	.833	.933

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City of San Jacinto
N/S: Sanderson Avenue
E/W: Ramona Expressway
Weather: Clear

File Name : 01_SJC_Sanderson_Ramona Expy AM
Site Code : 10519810
Start Date : 11/21/2019
Page No : 1

Groups Printed- Total Volume

	Sanderson Avenue Southbound				Ramona Expressway Westbound				Sanderson Avenue Northbound				Ramona Expressway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	118	115	68	301	8	123	161	292	33	242	19	294	102	63	17	182	1069
07:15 AM	135	135	72	342	13	121	157	291	30	250	10	290	63	61	16	140	1063
07:30 AM	131	130	83	344	12	127	162	301	36	229	14	279	106	89	20	215	1139
07:45 AM	144	141	70	355	11	92	164	267	20	205	20	245	105	108	18	231	1098
Total	528	521	293	1342	44	463	644	1151	119	926	63	1108	376	321	71	768	4369
08:00 AM	123	138	69	330	4	103	121	228	28	184	21	233	88	81	15	184	975
08:15 AM	132	125	60	317	8	48	160	216	20	204	7	231	79	74	12	165	929
08:30 AM	113	105	64	282	13	63	113	189	19	157	7	183	101	73	13	187	841
08:45 AM	136	114	48	298	6	56	137	199	19	166	6	191	74	65	11	150	838
Total	504	482	241	1227	31	270	531	832	86	711	41	838	342	293	51	686	3583
Grand Total	1032	1003	534	2569	75	733	1175	1983	205	1637	104	1946	718	614	122	1454	7952
Apprch %	40.2	39	20.8		3.8	37	59.3		10.5	84.1	5.3		49.4	42.2	8.4		
Total %	13	12.6	6.7	32.3	0.9	9.2	14.8	24.9	2.6	20.6	1.3	24.5	9	7.7	1.5	18.3	

	Sanderson Avenue Southbound				Ramona Expressway Westbound				Sanderson Avenue Northbound				Ramona Expressway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	118	115	68	301	8	123	161	292	33	242	19	**294**	102	63	17	182	1069
07:15 AM	135	135	72	342	**13**	121	157	291	30	**250**	10	290	63	61	16	140	1063
07:30 AM	131	130	**83**	344	12	**127**	162	**301**	**36**	229	14	279	**106**	89	**20**	215	**1139**
07:45 AM	**144**	**141**	70	**355**	11	92	**164**	267	20	205	**20**	245	105	**108**	18	**231**	1098
Total Volume	528	521	293	1342	44	463	644	1151	119	926	63	1108	376	321	71	768	4369
% App. Total	39.3	38.8	21.8		3.8	40.2	56		10.7	83.6	5.7		49	41.8	9.2		
PHF	.917	.924	.883	.945	.846	.911	.982	.956	.826	.926	.788	.942	.887	.743	.888	.831	.959

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City of San Jacinto
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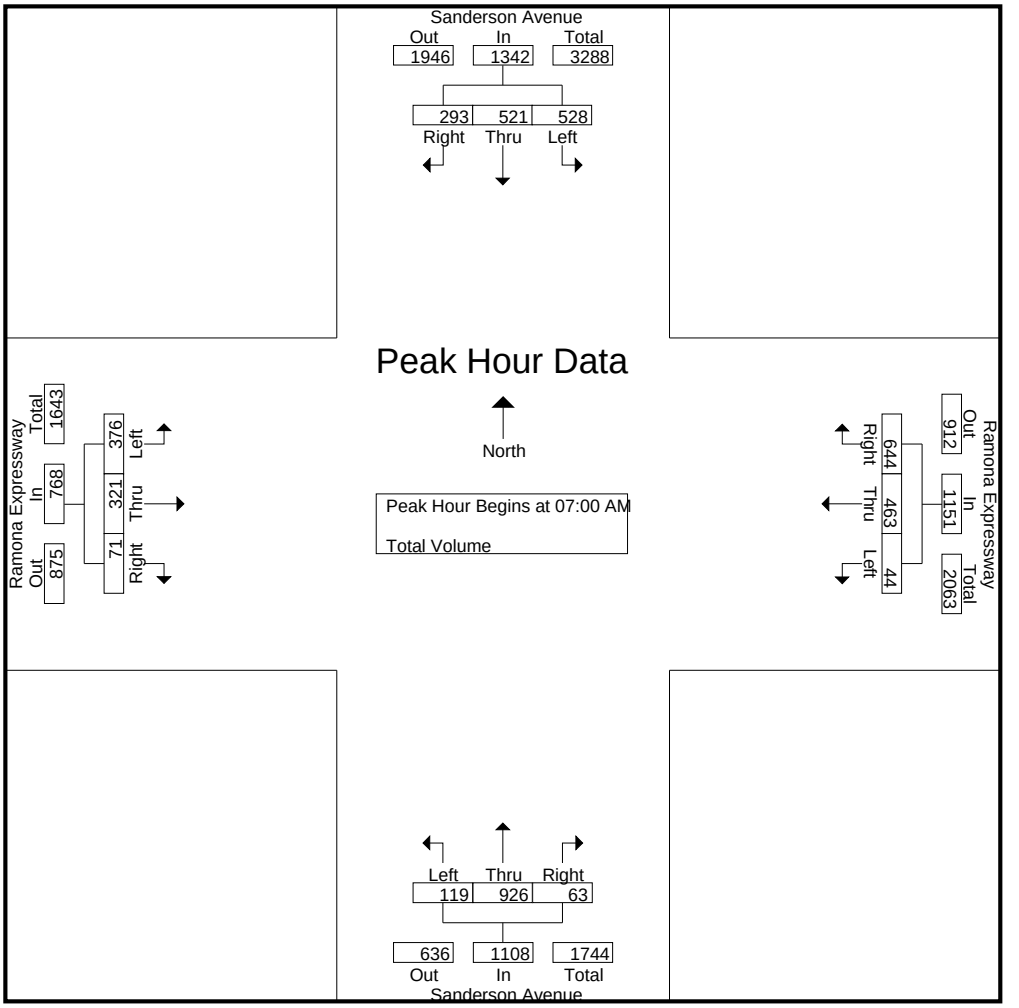
E/W: Ramona Expressway
Weather: Clear

File Name : 01_SJC_Sanderson_Ramona Expy AM
Site Code : 10519810
Start Date : 11/21/2019



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

	07:15 AM				07:00 AM				07:00 AM				07:30 AM			
+0 mins.	135	135	72	342	8	123	161	292	33	242	19	**294**	**106**	89	**20**	215
+15 mins.	131	130	**83**	344	**13**	121	157	291	30	**250**	10	290	105	**108**	18	**231**
+30 mins.	**144**	**141**	70	**355**	12	**127**	162	**301**	**36**	229	14	279	88	81	15	184
+45 mins.	123	138	69	330	11	92	**164**	267	20	205	**20**	245	79	74	12	165
Total Volume	533	544	294	1371	44	463	644	1151	119	926	63	1108	378	352	65	795
% App. Total	38.9	39.7	21.4		3.8	40.2	56		10.7	83.6	5.7		47.5	44.3	8.2	
PHF	.925	.965	.886	.965	.846	.911	.982	.956	.826	.926	.788	.942	.892	.815	.813	.860

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City of San Jacinto
N/S: Sanderson Avenue
E/W: Ramona Expressway
Weather: Clear

File Name : 01_SJC_Sanderson_Ramona Expy PM
Site Code : 10519810
Start Date : 11/21/2019
Page No : 1

Groups Printed- Total Volume

	Sanderson Avenue Southbound				Ramona Expressway Westbound				Sanderson Avenue Northbound				Ramona Expressway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	166	239	104	509	9	102	132	243	26	130	5	161	84	150	41	275	1188
04:15 PM	182	269	128	579	12	102	128	242	34	145	10	189	81	122	42	245	1255
04:30 PM	166	298	147	611	14	90	123	227	22	151	7	180	89	117	25	231	1249
04:45 PM	145	266	141	552	5	100	133	238	35	156	3	194	102	146	46	294	1278
Total	659	1072	520	2251	40	394	516	950	117	582	25	724	356	535	154	1045	4970
05:00 PM	167	322	102	591	17	100	155	272	33	136	8	177	58	130	33	221	1261
05:15 PM	164	275	105	544	10	108	138	256	38	152	6	196	91	134	45	270	1266
05:30 PM	175	316	108	599	9	73	107	189	25	140	9	174	71	135	36	242	1204
05:45 PM	157	315	126	598	6	80	104	190	17	129	8	154	58	161	39	258	1200
Total	663	1228	441	2332	42	361	504	907	113	557	31	701	278	560	153	991	4931
Grand Total	1322	2300	961	4583	82	755	1020	1857	230	1139	56	1425	634	1095	307	2036	9901
Apprch %	28.8	50.2	21		4.4	40.7	54.9		16.1	79.9	3.9		31.1	53.8	15.1		
Total %	13.4	23.2	9.7	46.3	0.8	7.6	10.3	18.8	2.3	11.5	0.6	14.4	6.4	11.1	3.1	20.6	

	Sanderson Avenue Southbound				Ramona Expressway Westbound				Sanderson Avenue Northbound				Ramona Expressway Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	166	298	**147**	**611**	14	90	123	227	22	151	7	180	89	117	25	231	1249
04:45 PM	145	266	141	552	5	100	133	238	35	**156**	3	194	**102**	**146**	**46**	**294**	**1278**
05:00 PM	**167**	**322**	102	591	**17**	100	**155**	**272**	33	136	**8**	177	58	130	33	221	1261
05:15 PM	164	275	105	544	10	**108**	138	256	**38**	152	6	**196**	91	134	45	270	1266
Total Volume	642	1161	495	2298	46	398	549	993	128	595	24	747	340	527	149	1016	5054
% App. Total	27.9	50.5	21.5		4.6	40.1	55.3		17.1	79.7	3.2		33.5	51.9	14.7		
PHF	.961	.901	.842	.940	.676	.921	.885	.913	.842	.954	.750	.953	.833	.902	.810	.864	.989

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Weather: Clear

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Site Code : 10519810
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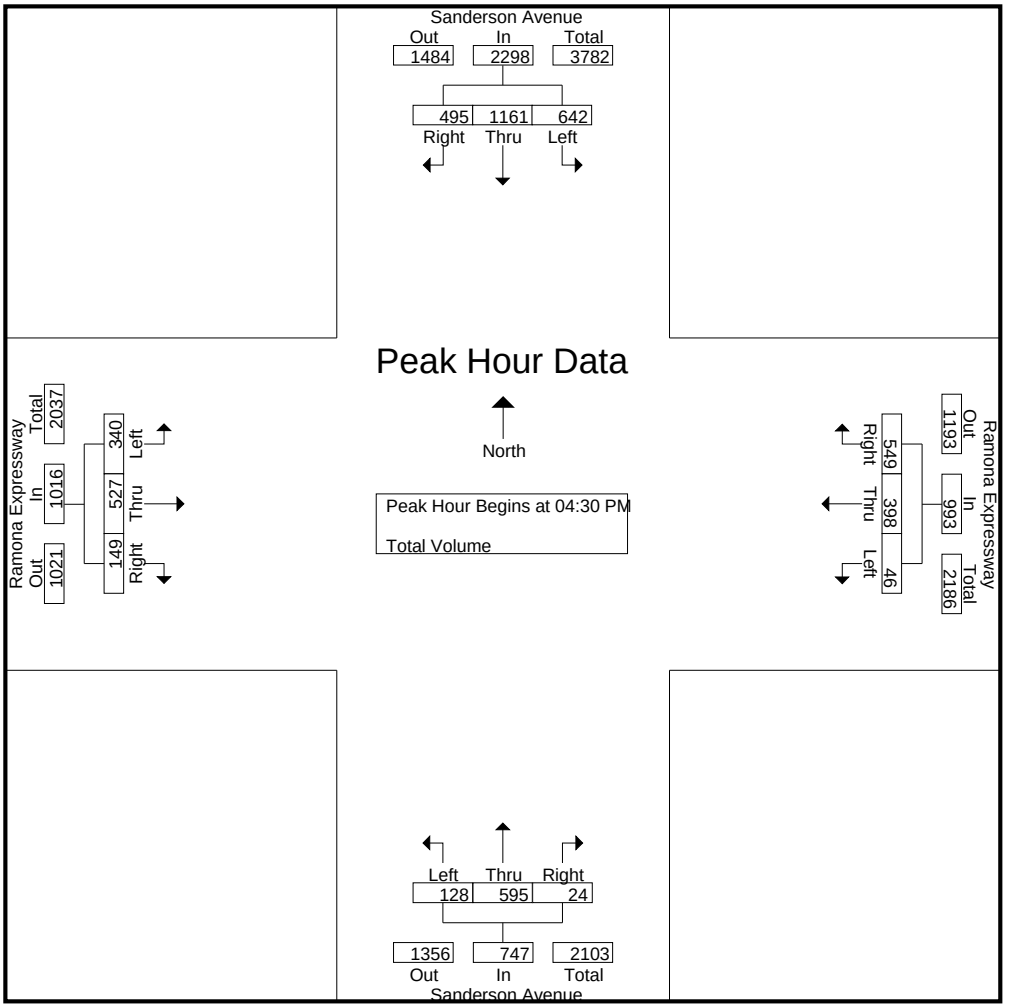

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:15 PM				04:30 PM				04:30 PM				04:00 PM			
+0 mins.	**182**	269	128	579	14	90	123	227	22	151	7	180	84	**150**	41	275
+15 mins.	166	298	**147**	**611**	5	100	133	238	35	**156**	3	194	81	122	42	245
+30 mins.	145	266	141	552	**17**	100	**155**	**272**	33	136	**8**	177	89	117	25	231
+45 mins.	167	**322**	102	591	10	**108**	138	256	**38**	152	6	**196**	**102**	146	**46**	**294**
Total Volume	660	1155	518	2333	46	398	549	993	128	595	24	747	356	535	154	1045
% App. Total	28.3	49.5	22.2		4.6	40.1	55.3		17.1	79.7	3.2		34.1	51.2	14.7	
PHF	.907	.897	.881	.955	.676	.921	.885	.913	.842	.954	.750	.953	.873	.892	.837	.889

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City of San Jacinto
N/S: Sanderson Avenue
E/W: Ramona Boulevard
Weather: Clear

File Name : 02_SJC_Sanderson_Ramona Blvd AM
Site Code : 10519810
Start Date : 11/21/2019
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Groups Printed- Total Volume

	Sanderson Avenue Southbound			Ramona Boulevard Westbound			Sanderson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
07:00 AM	27	119	146	12	51	63	245	5	250	459
07:15 AM	18	149	167	12	32	44	241	8	249	460
07:30 AM	17	149	166	14	42	56	248	5	253	475
07:45 AM	23	154	177	8	40	48	218	5	223	448
Total	85	571	656	46	165	211	952	23	975	1842
08:00 AM	26	130	156	10	42	52	206	7	213	421
08:15 AM	23	123	146	10	35	45	189	7	196	387
08:30 AM	14	122	136	11	29	40	169	5	174	350
08:45 AM	12	121	133	8	34	42	149	6	155	330
Total	75	496	571	39	140	179	713	25	738	1488
Grand Total	160	1067	1227	85	305	390	1665	48	1713	3330
Apprch %	13	87		21.8	78.2		97.2	2.8		
Total %	4.8	32	36.8	2.6	9.2	11.7	50	1.4	51.4	

	Sanderson Avenue Southbound			Ramona Boulevard Westbound			Sanderson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	**27**	119	146	12	**51**	**63**	245	5	250	459
07:15 AM	18	149	167	12	32	44	241	**8**	249	460
07:30 AM	17	149	166	**14**	42	56	**248**	5	**253**	**475**
07:45 AM	23	**154**	**177**	8	40	48	218	5	223	448
Total Volume	85	571	656	46	165	211	952	23	975	1842
% App. Total	13	87		21.8	78.2		97.6	2.4		
PHF	.787	.927	.927	.821	.809	.837	.960	.719	.963	.969

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City of San Jacinto
N/S: Sanderson Avenue
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File Name : 02_SJC_Sanderson_Ramona Blvd AM
Site Code : 10519810
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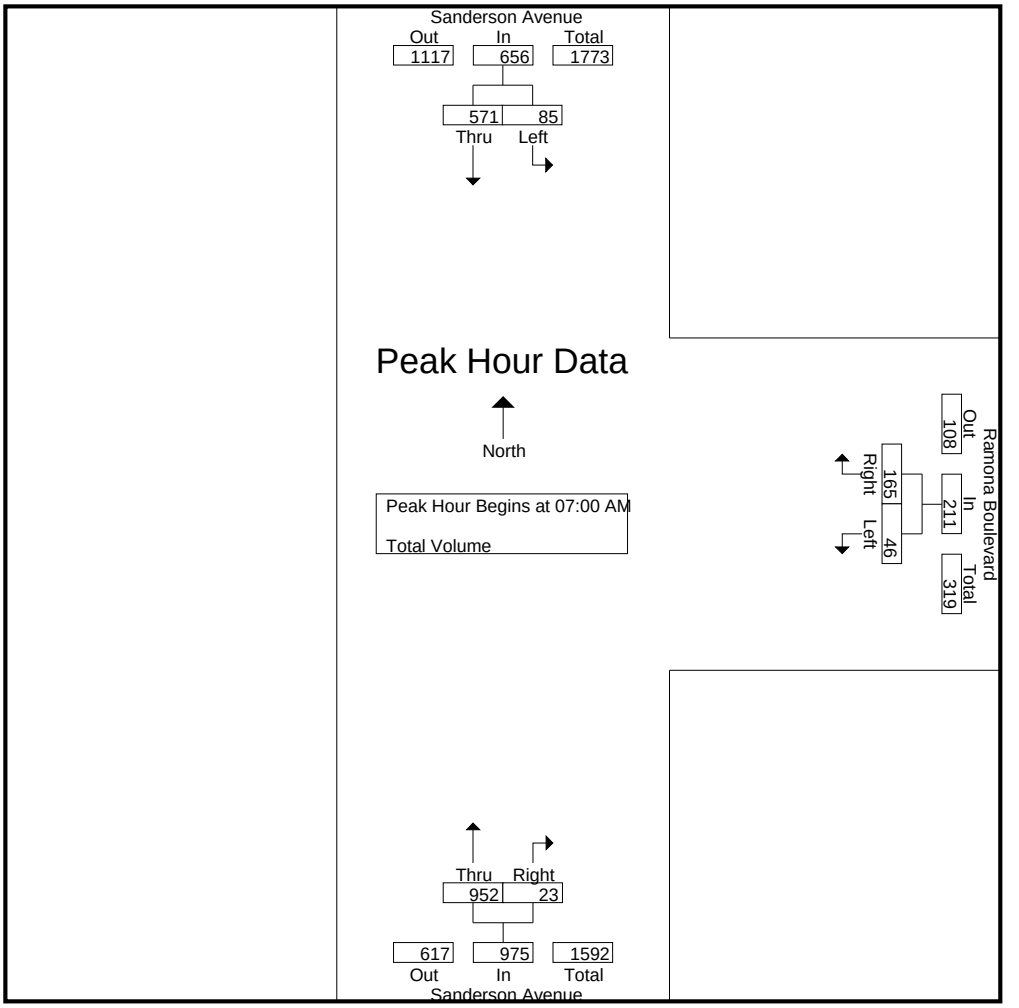

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM			07:00 AM			07:00 AM		
+0 mins.	18	149	167	12	**51**	**63**	245	5	250
+15 mins.	17	149	166	12	32	44	241	**8**	249
+30 mins.	23	**154**	**177**	**14**	42	56	**248**	5	**253**
+45 mins.	**26**	130	156	8	40	48	218	5	223
Total Volume	84	582	666	46	165	211	952	23	975
% App. Total	12.6	87.4		21.8	78.2		97.6	2.4	
PHF	.808	.945	.941	.821	.809	.837	.960	.719	.963

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City of San Jacinto
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Weather: Clear

File Name : 02_SJC_Sanderson_Ramona Blvd PM
Site Code : 10519810
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Groups Printed- Total Volume

	Sanderson Avenue Southbound			Ramona Boulevard Westbound			Sanderson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
04:00 PM	44	249	293	4	32	36	140	6	146	475
04:15 PM	67	262	329	5	33	38	151	12	163	530
04:30 PM	44	298	342	7	21	28	157	8	165	535
04:45 PM	55	262	317	4	26	30	165	5	170	517
Total	210	1071	1281	20	112	132	613	31	644	2057
05:00 PM	66	315	381	4	38	42	152	10	162	585
05:15 PM	62	281	343	5	34	39	163	12	175	557
05:30 PM	58	298	356	5	33	38	132	11	143	537
05:45 PM	53	306	359	6	22	28	131	16	147	534
Total	239	1200	1439	20	127	147	578	49	627	2213
Grand Total	449	2271	2720	40	239	279	1191	80	1271	4270
Apprch %	16.5	83.5		14.3	85.7		93.7	6.3		
Total %	10.5	53.2	63.7	0.9	5.6	6.5	27.9	1.9	29.8	

	Sanderson Avenue Southbound			Ramona Boulevard Westbound			Sanderson Avenue Northbound			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	**66**	**315**	**381**	4	**38**	**42**	152	10	162	**585**
05:15 PM	62	281	343	5	34	39	**163**	12	**175**	557
05:30 PM	58	298	356	5	33	38	132	11	143	537
05:45 PM	53	306	359	**6**	22	28	131	**16**	147	534
Total Volume	239	1200	1439	20	127	147	578	49	627	2213
% App. Total	16.6	83.4		13.6	86.4		92.2	7.8		
PHF	.905	.952	.944	.833	.836	.875	.887	.766	.896	.946

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City of San Jacinto
N/S: Sanderson Avenue
E/W: Ramona Boulevard
Weather: Clear

File Name : 02_SJC_Sanderson_Ramona Blvd PM
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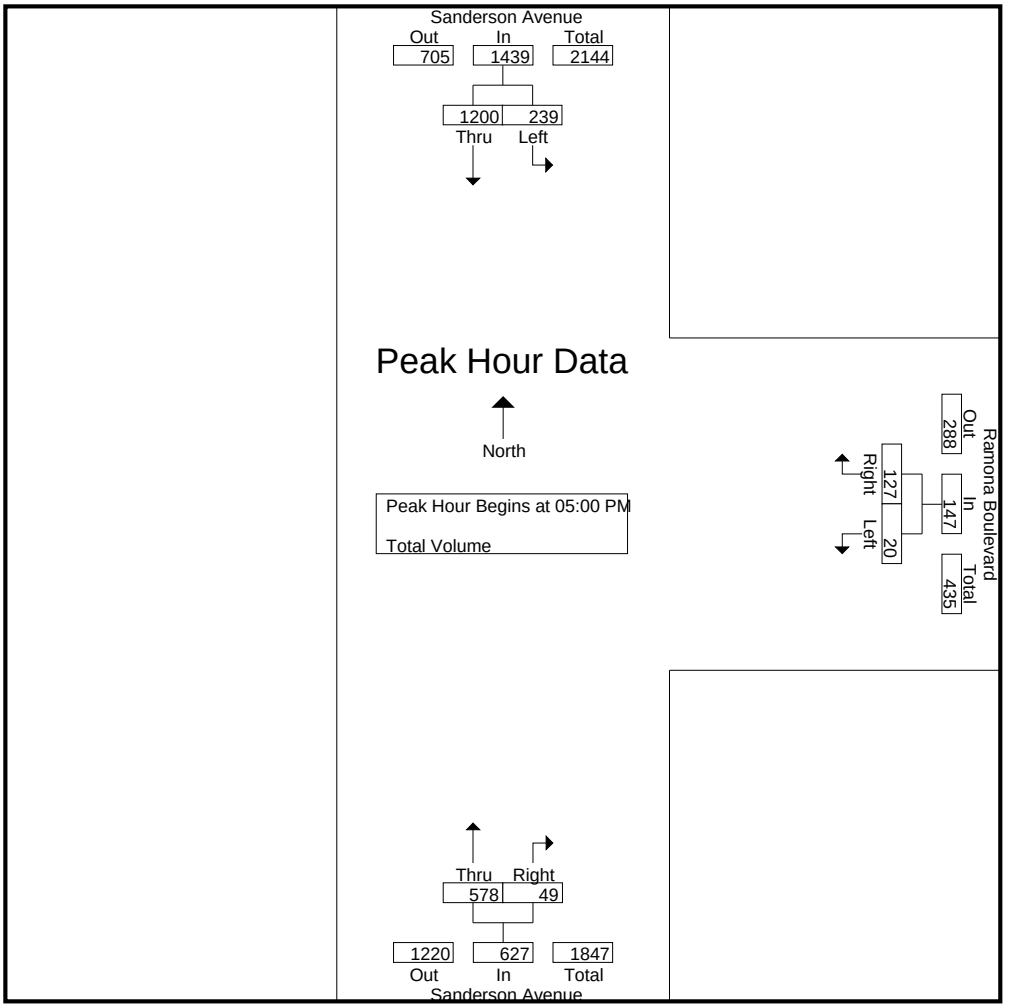

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM			04:45 PM			04:30 PM		
+0 mins.	**66**	**315**	**381**	4	26	30	157	8	165
+15 mins.	62	281	343	4	**38**	**42**	**165**	5	170
+30 mins.	58	298	356	**5**	34	39	152	10	162
+45 mins.	53	306	359	5	33	38	163	**12**	**175**
Total Volume	239	1200	1439	18	131	149	637	35	672
% App. Total	16.6	83.4		12.1	87.9		94.8	5.2	
PHF	.905	.952	.944	.900	.862	.887	.965	.729	.960

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City of San Jacinto
N/S: Sanderson Avenue
E/W: Cottonwood Avenue
Weather: Clear

File Name : 03_SJC_Sanderson_Cottonwood AM
Site Code : 10519810
Start Date : 11/21/2019
Page No : 1

Groups Printed- Total Volume

	Sanderson Avenue Southbound				Cottonwood Avenue Westbound				Sanderson Avenue Northbound				Cottonwood Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	4	113	19	136	21	43	26	90	6	171	17	194	39	58	6	103	523
07:15 AM	8	130	16	154	26	64	31	121	15	204	17	236	34	52	4	90	601
07:30 AM	4	114	20	138	19	72	30	121	9	184	22	215	34	60	6	100	574
07:45 AM	5	158	19	182	11	73	22	106	8	158	16	182	24	44	5	73	543
Total	21	515	74	610	77	252	109	438	38	717	72	827	131	214	21	366	2241
08:00 AM	4	117	17	138	19	77	17	113	12	168	11	191	33	55	17	105	547
08:15 AM	5	105	13	123	30	87	28	145	12	139	12	163	25	66	21	112	543
08:30 AM	11	119	12	142	11	104	25	140	11	120	12	143	17	69	26	112	537
08:45 AM	6	106	15	127	21	42	12	75	7	155	9	171	13	49	14	76	449
Total	26	447	57	530	81	310	82	473	42	582	44	668	88	239	78	405	2076
Grand Total	47	962	131	1140	158	562	191	911	80	1299	116	1495	219	453	99	771	4317
Apprch %	4.1	84.4	11.5		17.3	61.7	21		5.4	86.9	7.8		28.4	58.8	12.8		
Total %	1.1	22.3	3	26.4	3.7	13	4.4	21.1	1.9	30.1	2.7	34.6	5.1	10.5	2.3	17.9	

	Sanderson Avenue Southbound				Cottonwood Avenue Westbound				Sanderson Avenue Northbound				Cottonwood Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	**8**	130	16	154	**26**	64	**31**	**121**	**15**	**204**	17	**236**	**34**	52	4	90	**601**
07:30 AM	4	114	**20**	138	19	72	30	121	9	184	**22**	215	34	**60**	6	100	574
07:45 AM	5	**158**	19	**182**	11	73	22	106	8	158	16	182	24	44	5	73	543
08:00 AM	4	117	17	138	19	**77**	17	113	12	168	11	191	33	55	**17**	**105**	547
Total Volume	21	519	72	612	75	286	100	461	44	714	66	824	125	211	32	368	2265
% App. Total	3.4	84.8	11.8		16.3	62	21.7		5.3	86.7	8		34	57.3	8.7		
PHF	.656	.821	.900	.841	.721	.929	.806	.952	.733	.875	.750	.873	.919	.879	.471	.876	.942

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City of San Jacinto
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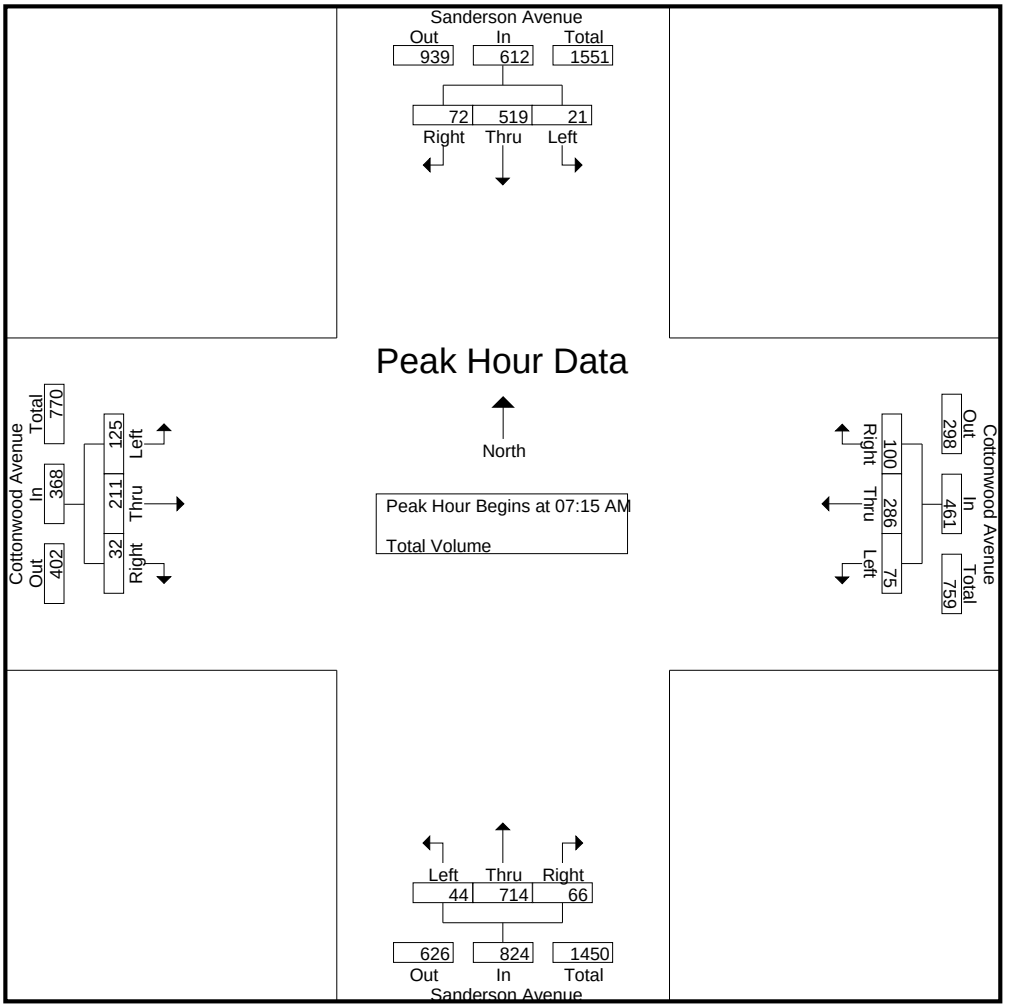
E/W: Cottonwood Avenue
Weather: Clear

File Name : 03_SJC_Sanderson_Cottonwood AM
Site Code : 10519810
Start Date : 11/21/2019



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

	07:15 AM				07:45 AM				07:00 AM				08:00 AM			
+0 mins.	**8**	130	16	154	11	73	22	106	6	171	17	194	**33**	55	17	105
+15 mins.	4	114	**20**	138	19	77	17	113	**15**	**204**	17	**236**	25	66	21	**112**
+30 mins.	5	**158**	19	**182**	**30**	87	**28**	**145**	9	184	**22**	215	17	**69**	**26**	112
+45 mins.	4	117	17	138	11	**104**	25	140	8	158	16	182	13	49	14	76
Total Volume	21	519	72	612	71	341	92	504	38	717	72	827	88	239	78	405
% App. Total	3.4	84.8	11.8		14.1	67.7	18.3		4.6	86.7	8.7		21.7	59	19.3	
PHF	.656	.821	.900	.841	.592	.820	.821	.869	.633	.879	.818	.876	.667	.866	.750	.904

Counts Unlimited
PO Box 1178
Corona, CA 92878
(951) 268-6268

City of San Jacinto
N/S: Sanderson Avenue
E/W: Cottonwood Avenue
Weather: Clear

File Name : 03_SJC_Sanderson_Cottonwood PM
Site Code : 10519810
Start Date : 11/21/2019
Page No : 1

Groups Printed- Total Volume

	Sanderson Avenue Southbound				Cottonwood Avenue Westbound				Sanderson Avenue Northbound				Cottonwood Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
04:00 PM	18	219	22	259	24	45	16	85	10	125	23	158	19	60	8	87	589
04:15 PM	30	204	28	262	21	42	15	78	12	130	19	161	21	42	16	79	580
04:30 PM	17	238	34	289	23	33	11	67	7	133	14	154	15	61	21	97	607
04:45 PM	19	225	21	265	21	26	14	61	7	131	27	165	23	58	15	96	587
Total	84	886	105	1075	89	146	56	291	36	519	83	638	78	221	60	359	2363
05:00 PM	21	247	27	295	23	30	21	74	9	110	24	143	20	50	19	89	601
05:15 PM	30	238	30	298	15	23	13	51	11	136	22	169	25	52	21	98	616
05:30 PM	22	232	27	281	28	28	7	63	11	132	25	168	17	38	12	67	579
05:45 PM	22	235	38	295	23	25	17	65	7	117	33	157	13	57	15	85	602
Total	95	952	122	1169	89	106	58	253	38	495	104	637	75	197	67	339	2398
Grand Total	179	1838	227	2244	178	252	114	544	74	1014	187	1275	153	418	127	698	4761
Apprch %	8	81.9	10.1		32.7	46.3	21		5.8	79.5	14.7		21.9	59.9	18.2		
Total %	3.8	38.6	4.8	47.1	3.7	5.3	2.4	11.4	1.6	21.3	3.9	26.8	3.2	8.8	2.7	14.7	

	Sanderson Avenue Southbound				Cottonwood Avenue Westbound				Sanderson Avenue Northbound				Cottonwood Avenue Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	17	238	**34**	289	**23**	**33**	11	67	7	133	14	154	15	**61**	**21**	97	607
04:45 PM	19	225	21	265	21	26	14	61	7	131	**27**	165	23	58	15	96	587
05:00 PM	21	**247**	27	295	23	30	**21**	**74**	9	110	24	143	20	50	19	89	601
05:15 PM	**30**	238	30	**298**	15	23	13	51	**11**	**136**	22	**169**	**25**	52	21	**98**	**616**
Total Volume	87	948	112	1147	82	112	59	253	34	510	87	631	83	221	76	380	2411
% App. Total	7.6	82.7	9.8		32.4	44.3	23.3		5.4	80.8	13.8		21.8	58.2	20		
PHF	.725	.960	.824	.962	.891	.848	.702	.855	.773	.938	.806	.933	.830	.906	.905	.969	.978

Counts Unlimited
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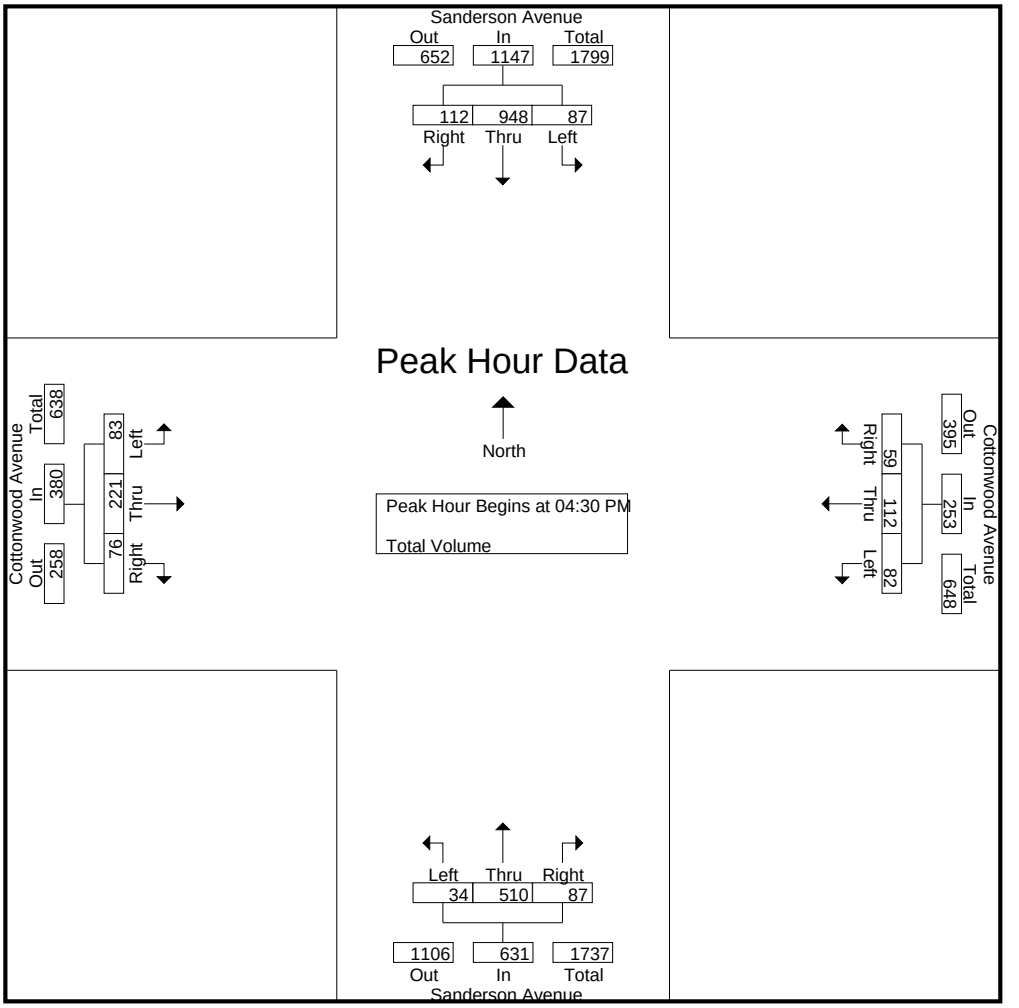
City of San Jacinto
N/S: Sanderson Avenue
E/W: Cottonwood Avenue
Weather: Clear

File Name : 03_SJC_Sanderson_Cottonwood PM
Site Code : 10519810
Start Date : 11/21/2019



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM				04:00 PM				04:45 PM				04:30 PM			
+0 mins.	21	**247**	27	295	**24**	**45**	**16**	**85**	7	131	**27**	165	15	**61**	**21**	97
+15 mins.	**30**	238	30	**298**	21	42	15	78	9	110	24	143	23	58	15	96
+30 mins.	22	232	27	281	23	33	11	67	**11**	**136**	22	**169**	20	50	19	89
+45 mins.	22	235	**38**	295	21	26	14	61	11	132	25	168	**25**	52	21	**98**
Total Volume	95	952	122	1169	89	146	56	291	38	509	98	645	83	221	76	380
% App. Total	8.1	81.4	10.4		30.6	50.2	19.2		5.9	78.9	15.2		21.8	58.2	20	
PHF	.792	.964	.803	.981	.927	.811	.875	.856	.864	.936	.907	.954	.830	.906	.905	.969

Appendix B

MUTCD Signal Warrant Analysis Sheets

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Conditions - AM Peak Hour**

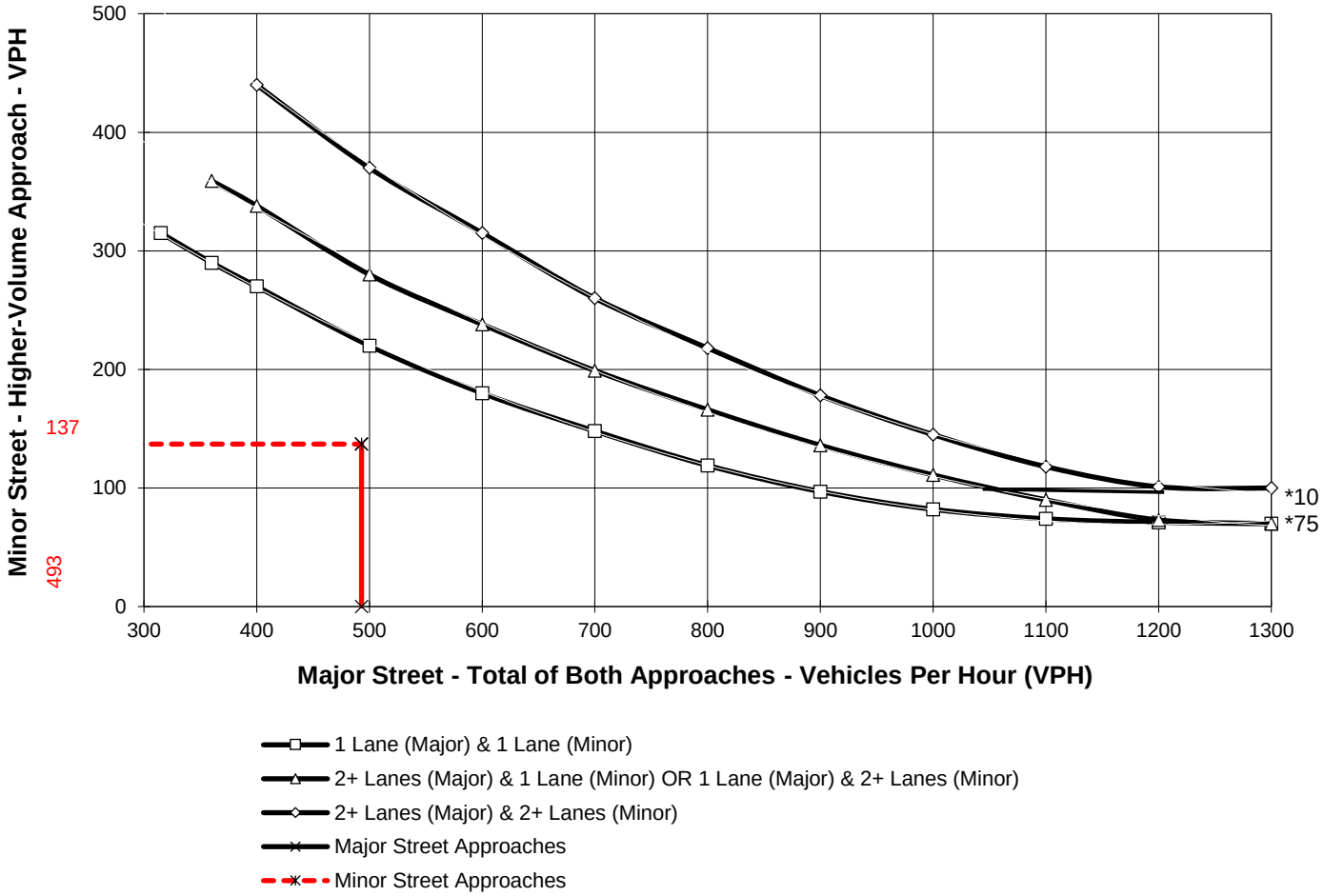
Major Street Name = **Cottonwood Avenue**

Total of Both Approaches (VPH) = **493**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Cawston Avenue**

High Volume Approach (VPH) = **137**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Conditions - PM Peak Hour**

Major Street Name = **Cottonwood Avenue**

Total of Both Approaches (VPH) = **596**

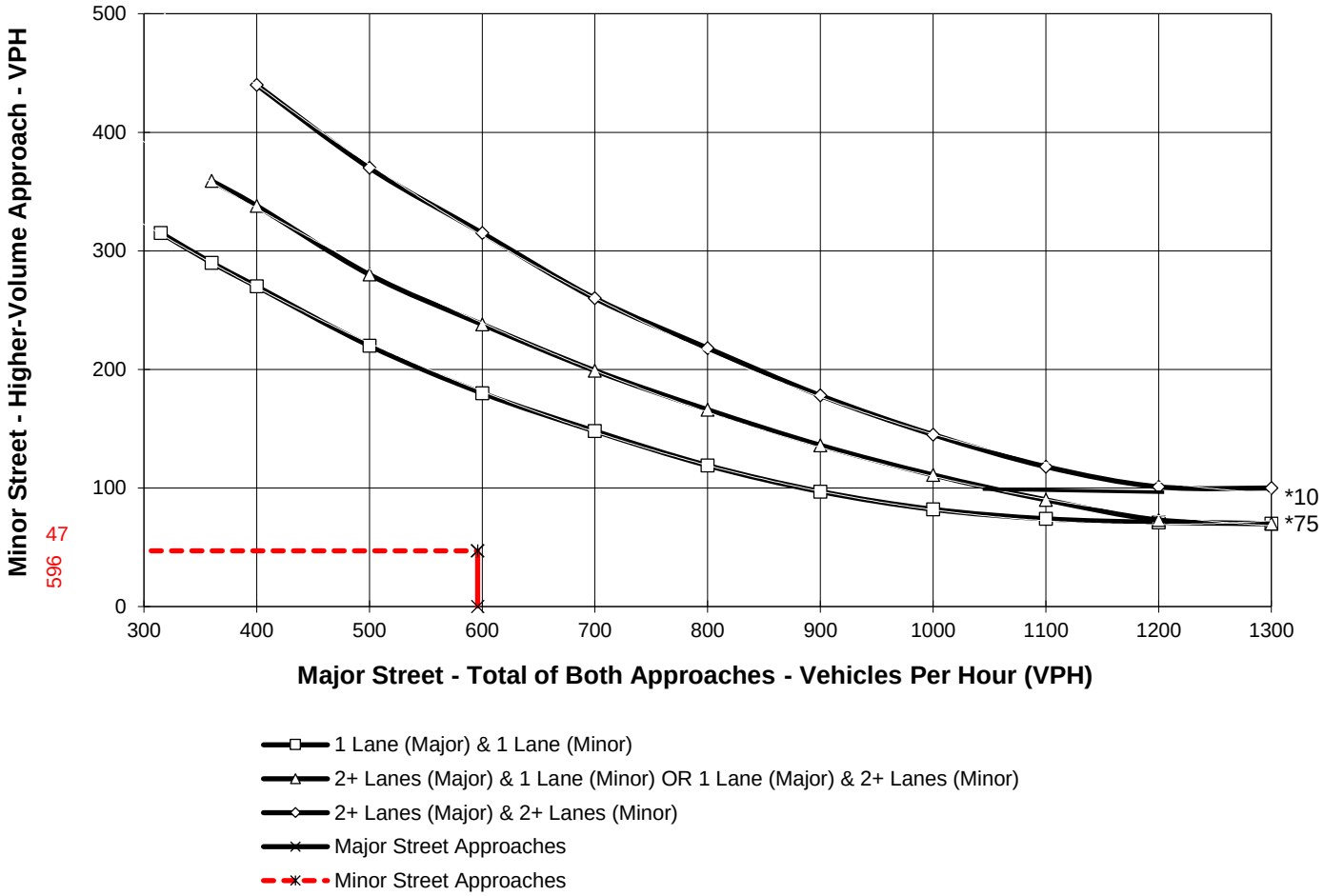
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Cawston Avenue**

High Volume Approach (VPH) = **47**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Plus Project Conditions - AM Peak Hour**

Major Street Name = **Cottonwood Avenue**

Total of Both Approaches (VPH) = **521**

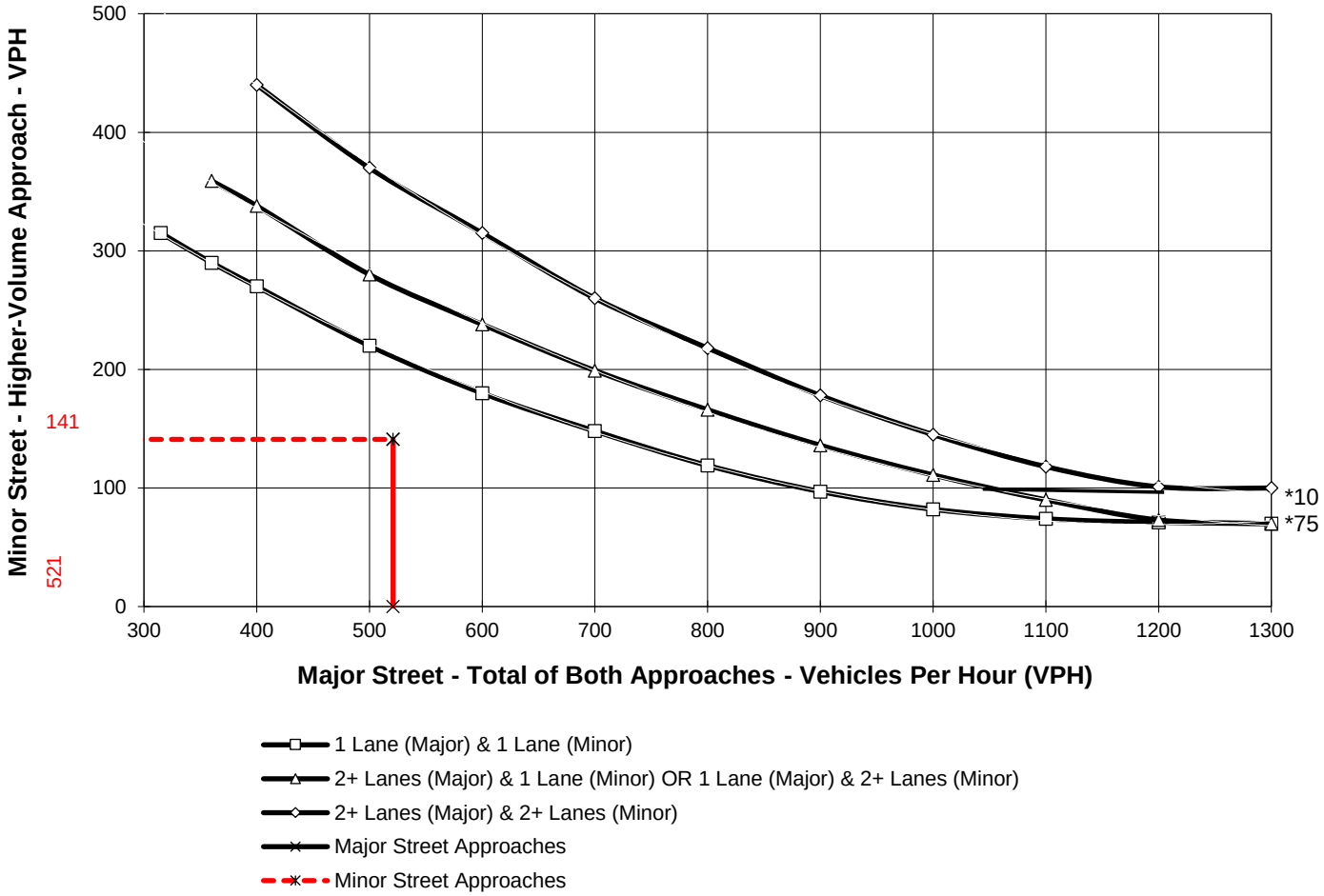
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Cawston Avenue**

High Volume Approach (VPH) = **141**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Plus Project Conditions - PM Peak Hour**

Major Street Name = **Cottonwood Avenue**

Total of Both Approaches (VPH) = **664**

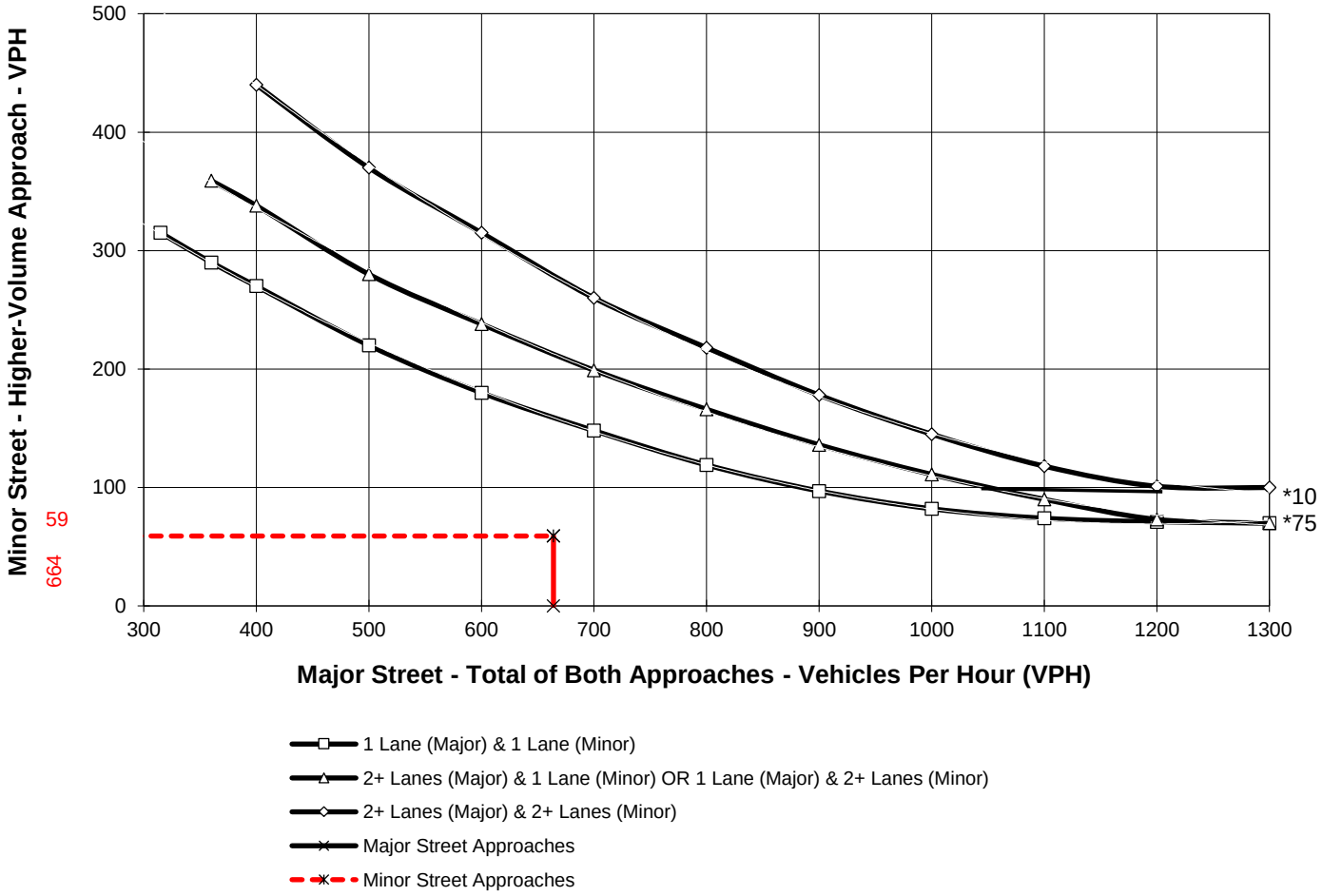
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Cawston Avenue**

High Volume Approach (VPH) = **59**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Without Project Conditions - AM Peak**

Major Street Name = **Cottonwood Avenue**

Total of Both Approaches (VPH) = **573**

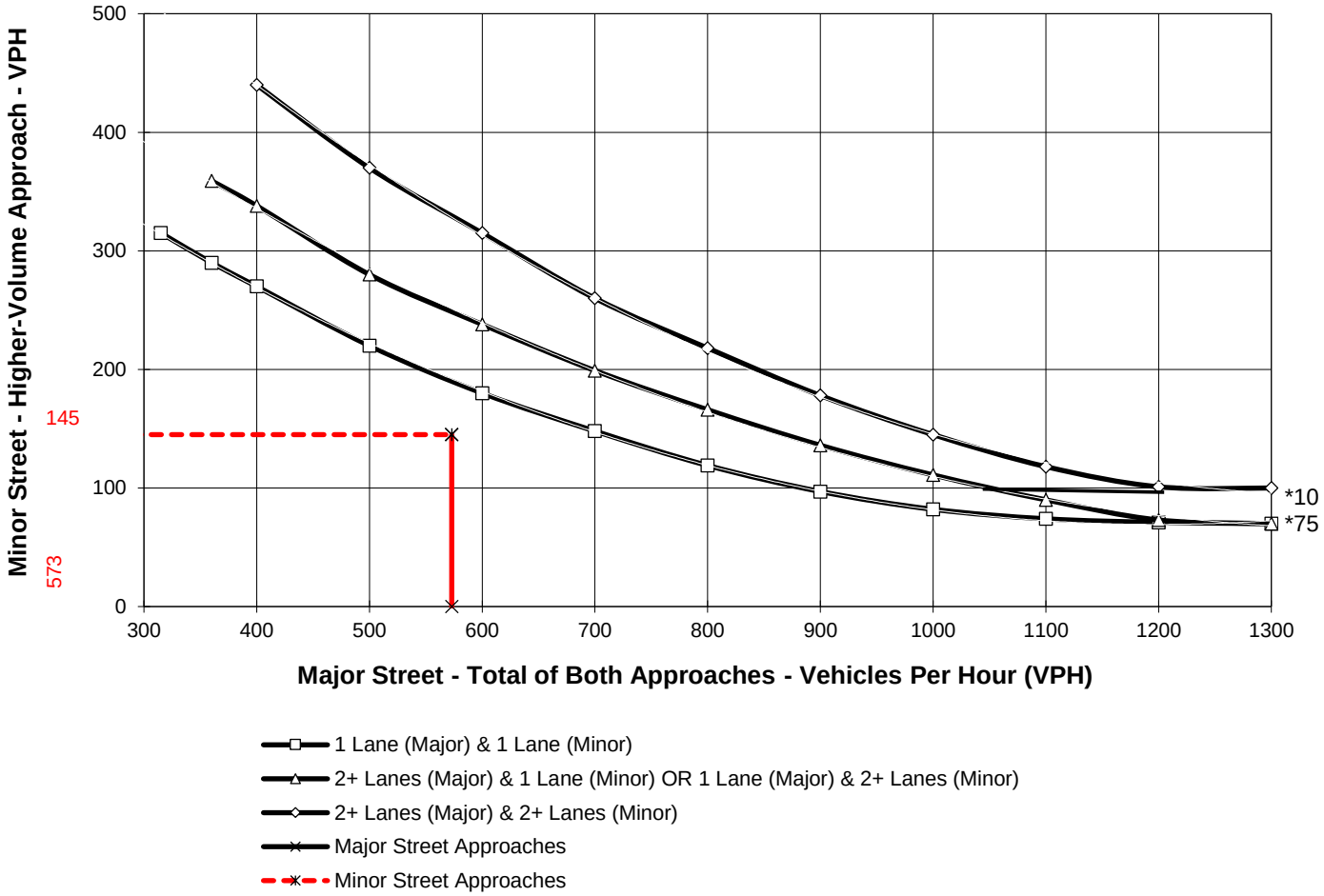
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Cawston Avenue**

High Volume Approach (VPH) = **145**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Without Project Conditions - PM Peak**

Major Street Name = **Cottonwood Avenue**

Total of Both Approaches (VPH) = **688**

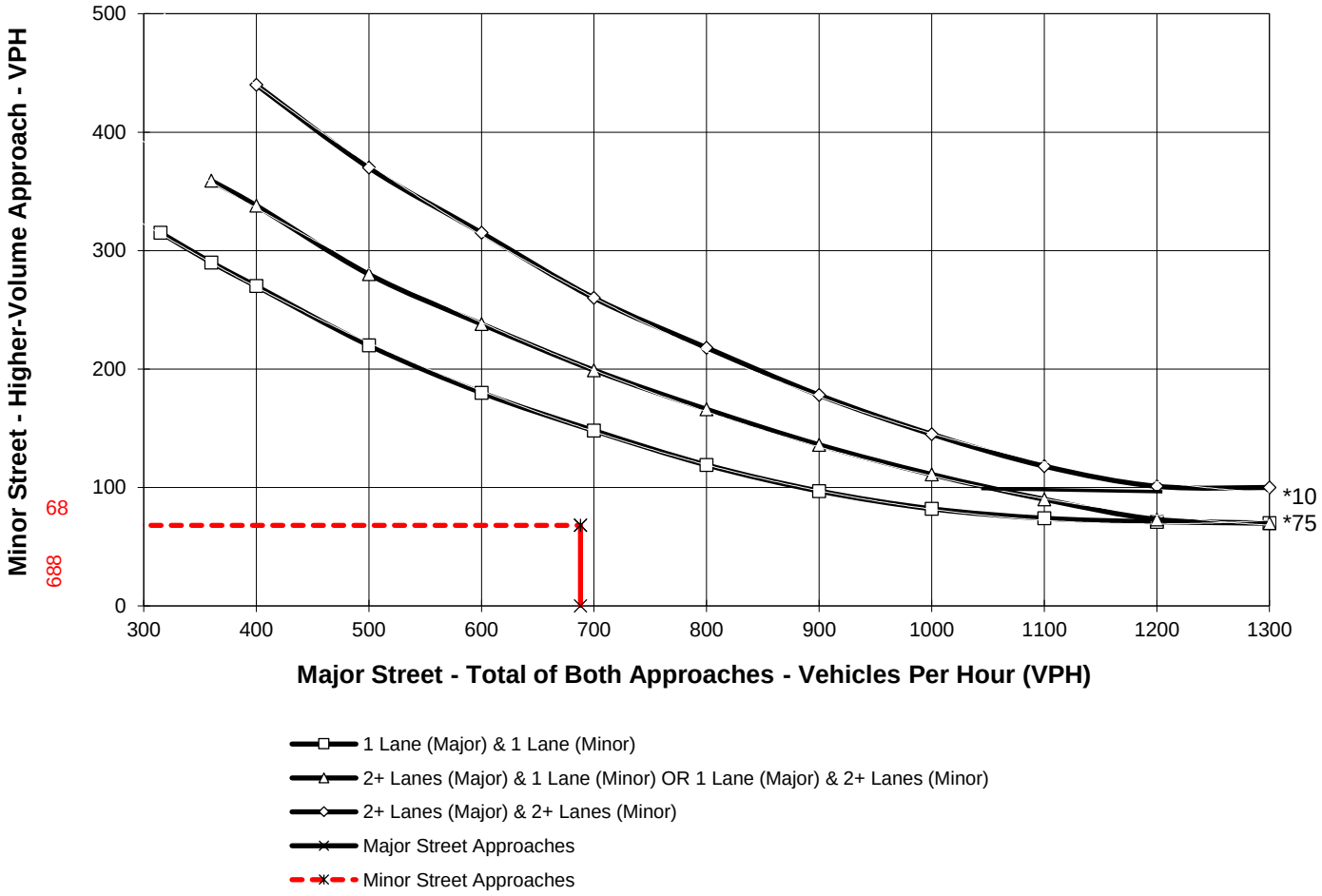
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Cawston Avenue**

High Volume Approach (VPH) = **68**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year With Project Conditions - AM Peak Hour**

Major Street Name = **Cottonwood Avenue**

Total of Both Approaches (VPH) = **601**

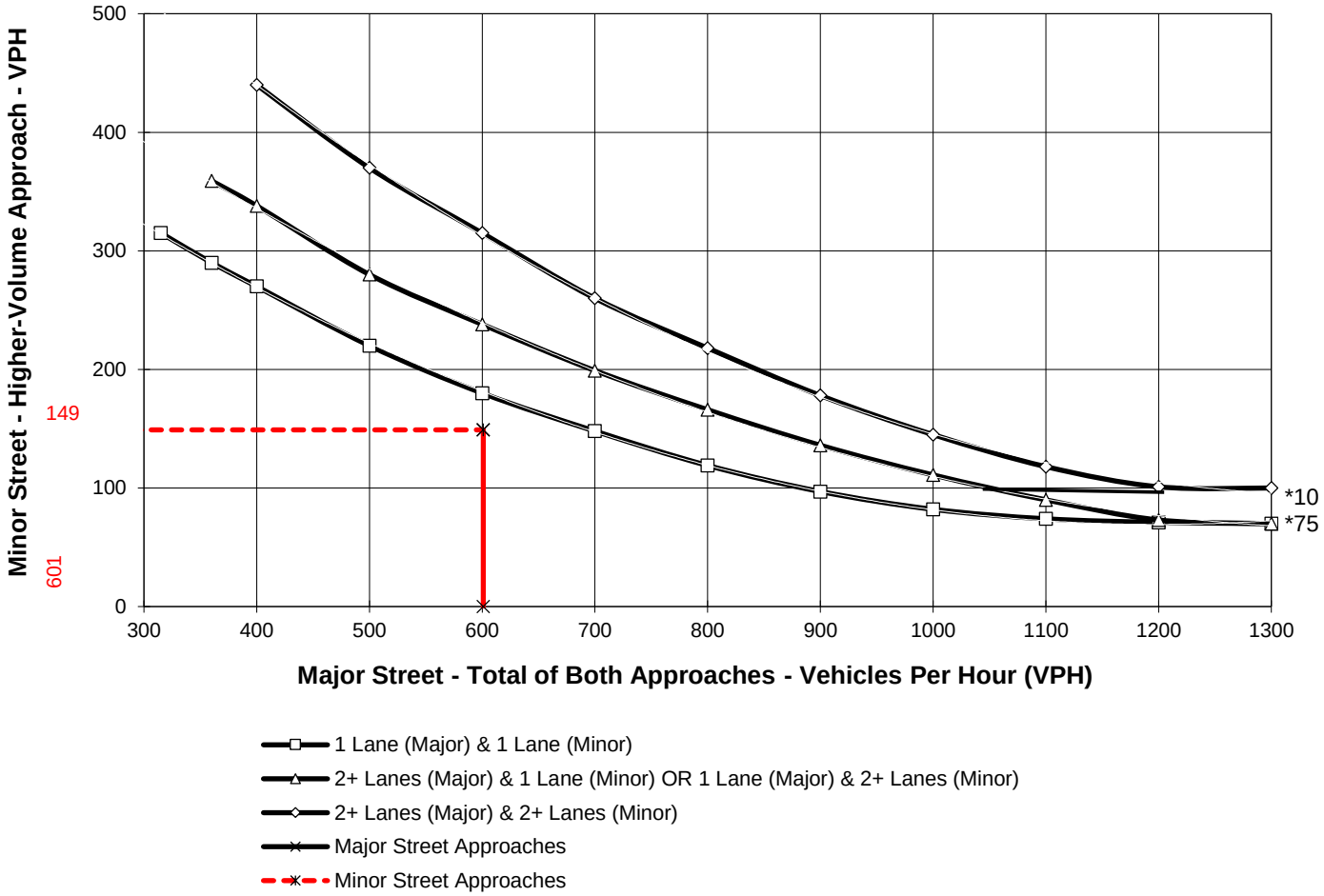
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Cawston Avenue**

High Volume Approach (VPH) = **149**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year With Project Conditions - PM Peak Hour**

Major Street Name = **Cottonwood Avenue**

Total of Both Approaches (VPH) = **755**

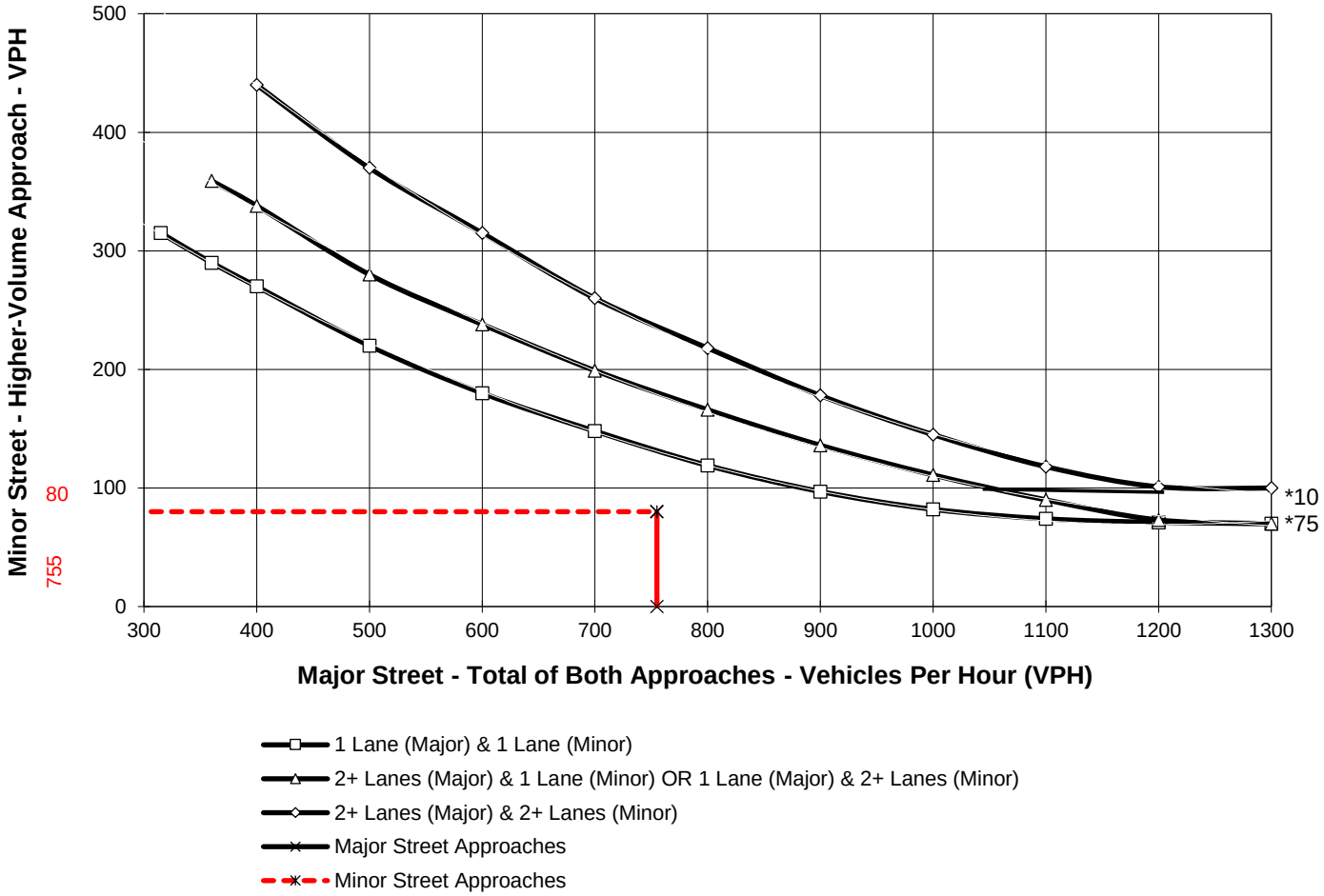
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Cawston Avenue**

High Volume Approach (VPH) = **80**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Conditions - AM Peak Hour**

Major Street Name = **Cottonwood Avenue**

Total of Both Approaches (VPH) = **653**

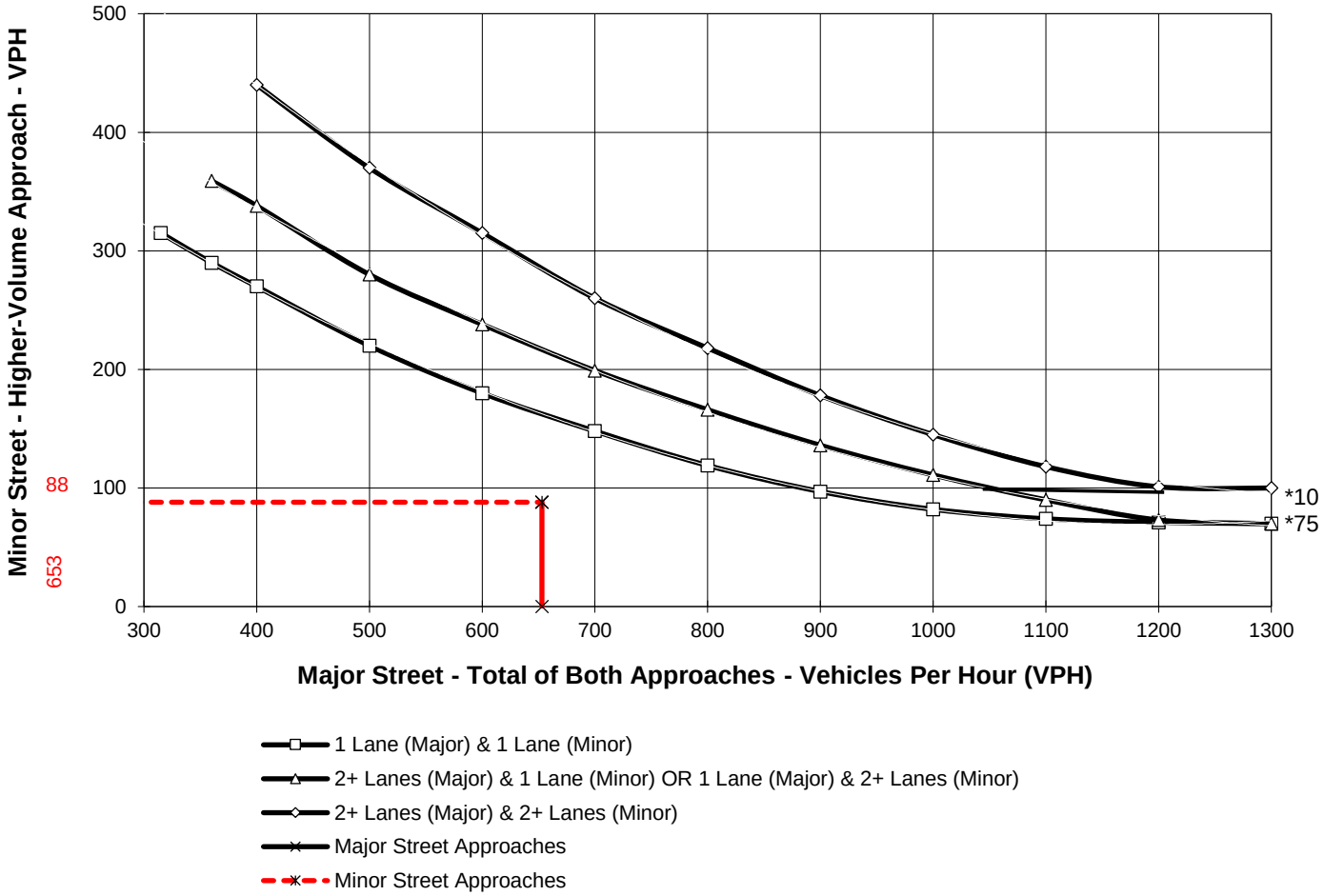
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Via Sierra Lane**

High Volume Approach (VPH) = **88**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Conditions - PM Peak Hour**

Major Street Name = **Cottonwood Avenue**

Total of Both Approaches (VPH) = **632**

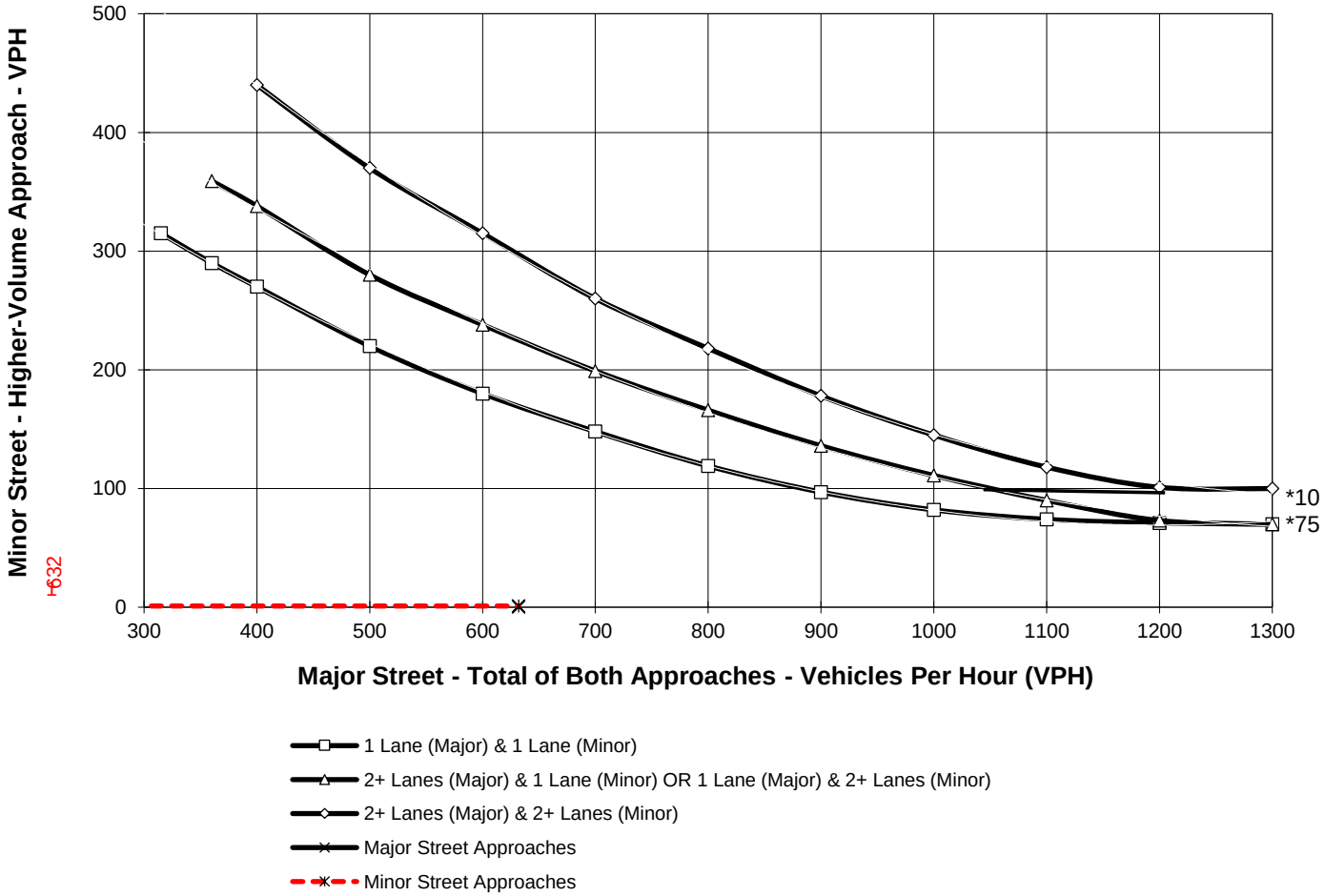
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Via Sierra Lane**

High Volume Approach (VPH) = **1**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

2014 Edition

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Plus Project Conditions - AM Peak Hour**

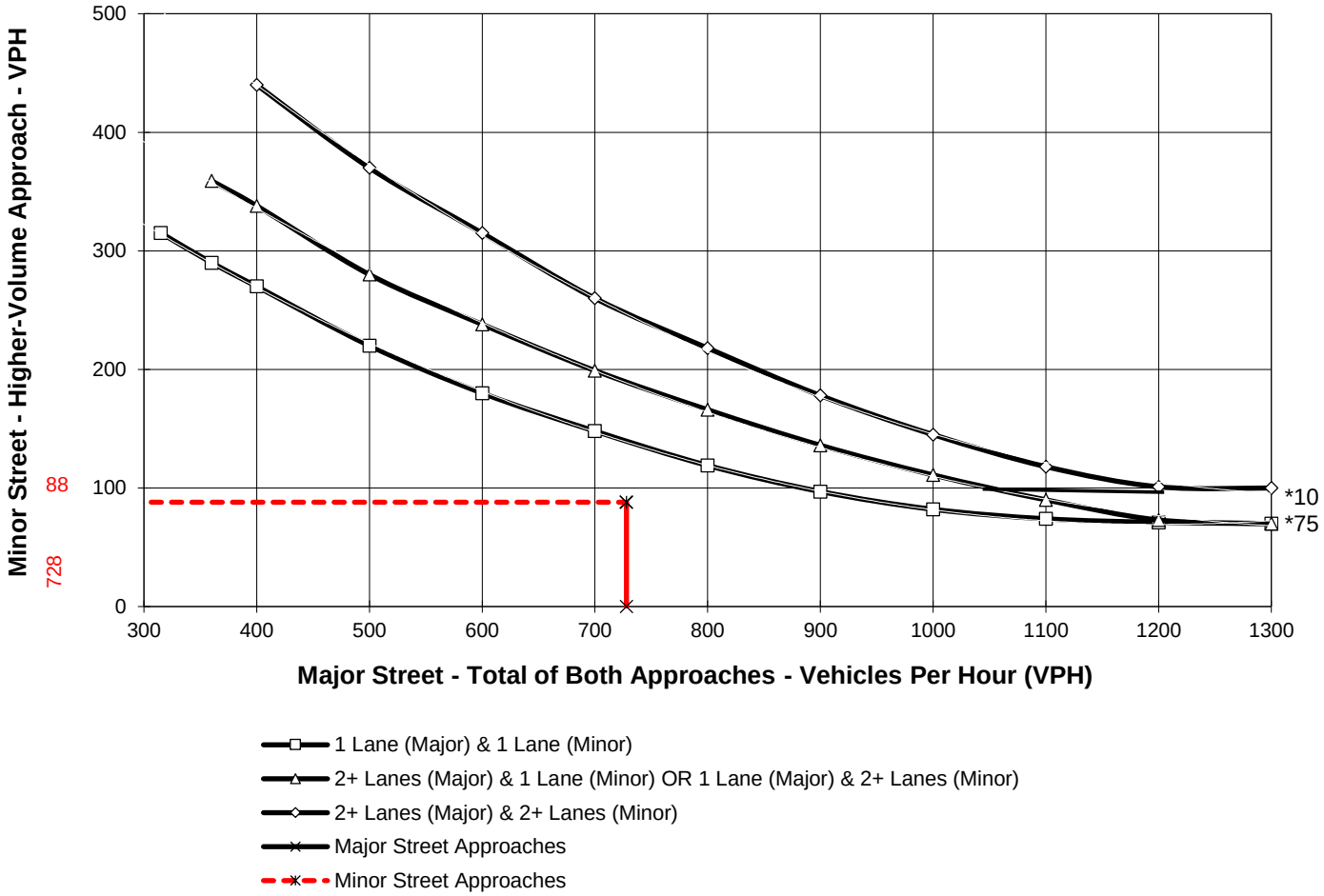
Major Street Name = **Cottonwood Avenue**

Total of Both Approaches (VPH) = **728**
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Via Sierra Lane**

High Volume Approach (VPH) = **88**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

November 2014

2014 Edition

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Plus Project Conditions - PM Peak Hour**

Major Street Name = **Cottonwood Avenue**

Total of Both Approaches (VPH) = **768**

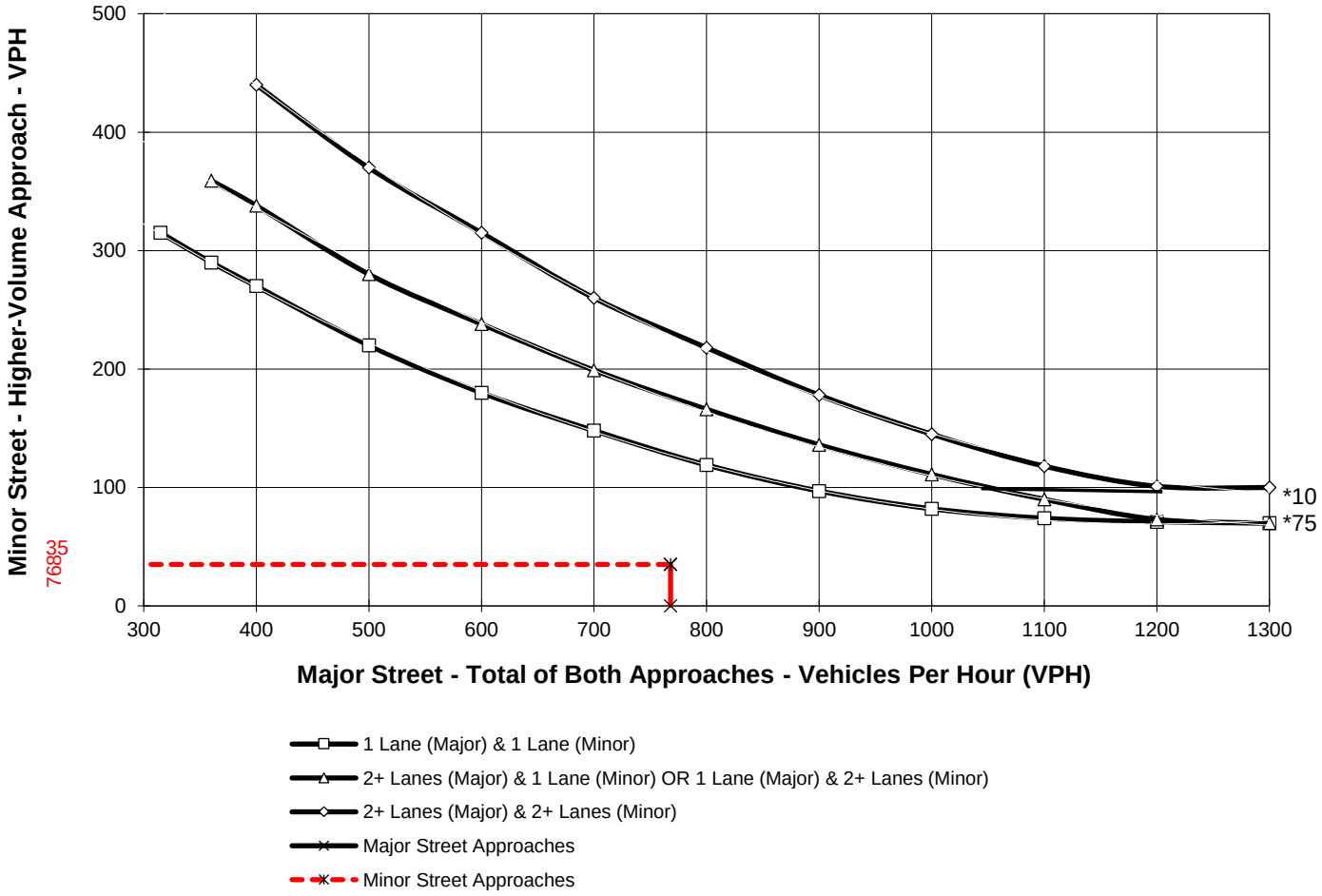
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Via Sierra Lane**

High Volume Approach (VPH) = **35**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

November 2014

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Without Project Conditions - AM Peak**

Major Street Name = **Cottonwood Avenue**

Total of Both Approaches (VPH) = **742**

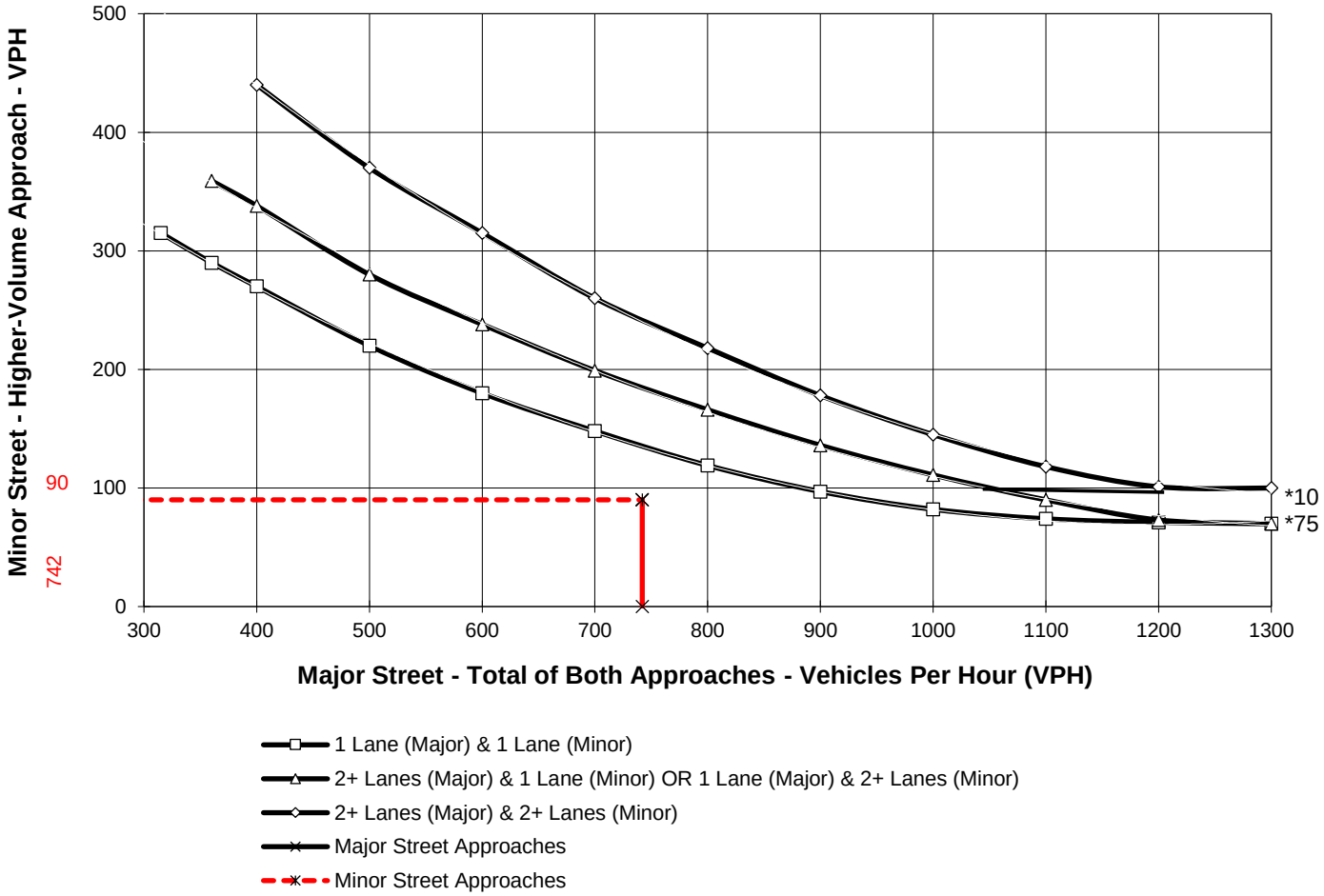
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Via La Sierra Lane**

High Volume Approach (VPH) = **90**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year Without Project Conditions - PM Peak**

Major Street Name = **Cottonwood Avenue**

Total of Both Approaches (VPH) = **745**

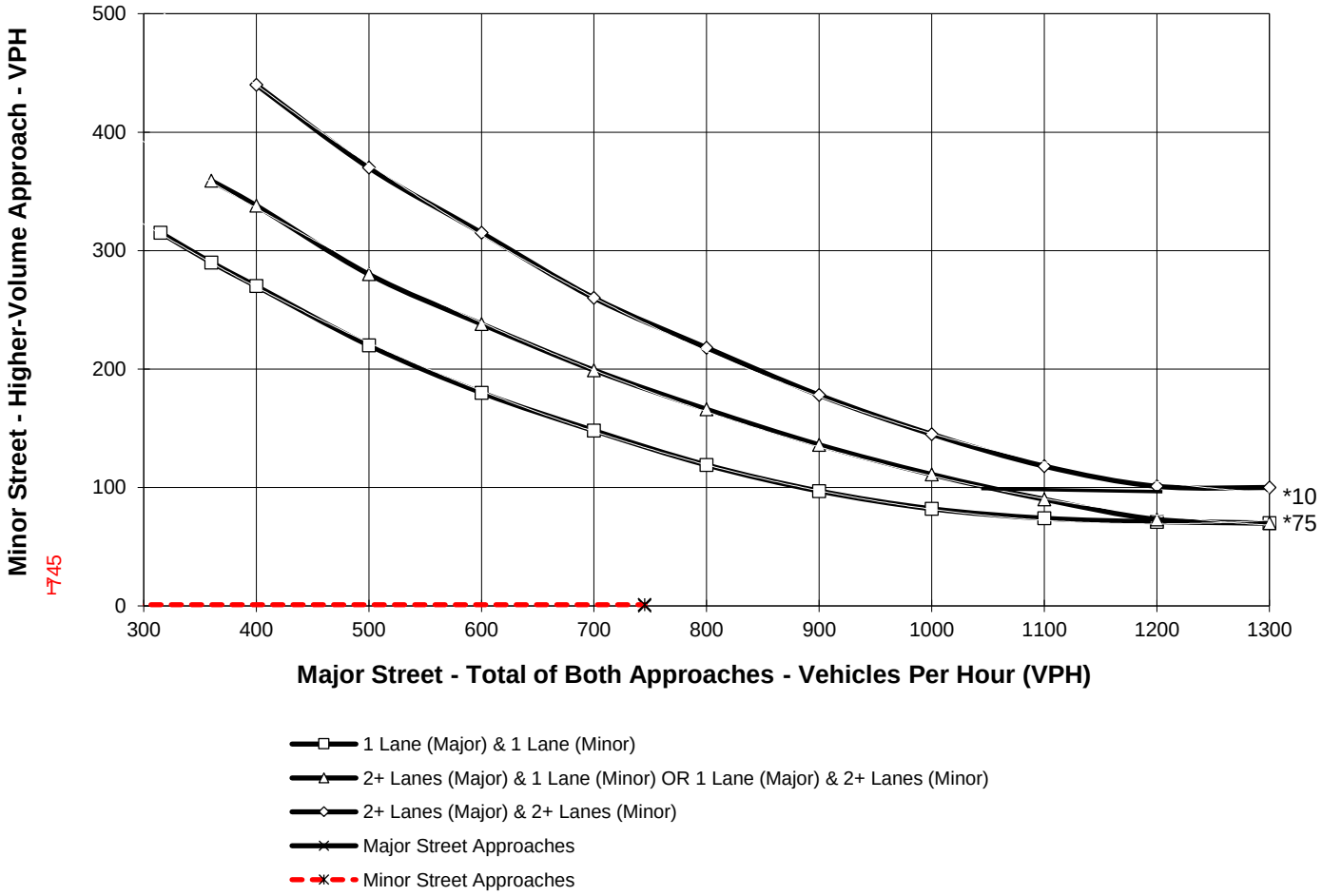
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Via La Sierra Lane**

High Volume Approach (VPH) = **1**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year With Project Conditions - AM Peak Hour**

Major Street Name = **Cottonwood Avenue**

Total of Both Approaches (VPH) = **818**

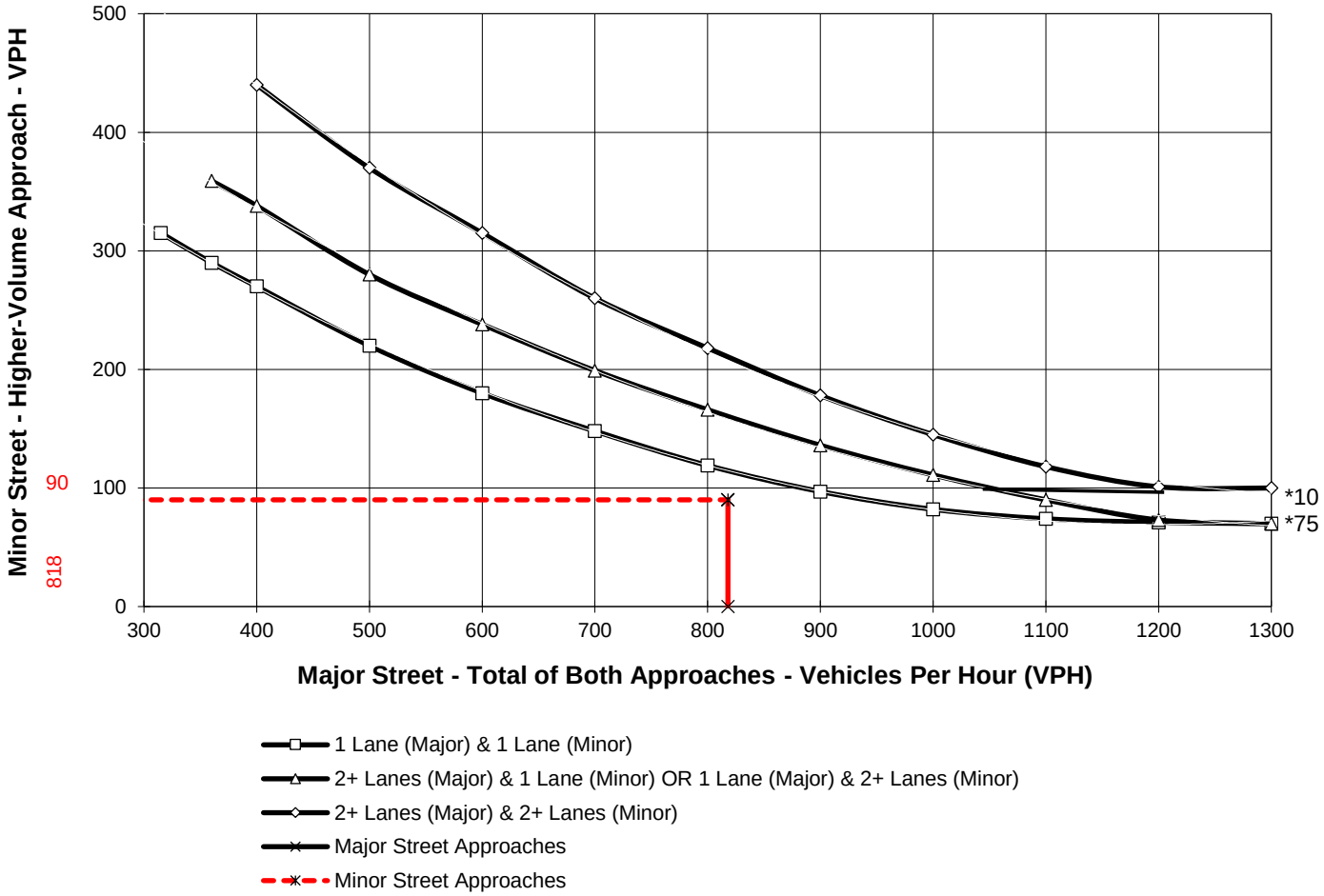
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Via La Sierra Lane**

High Volume Approach (VPH) = **90**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year With Project Conditions - PM Peak Hour**

Major Street Name = **Cottonwood Avenue**

Total of Both Approaches (VPH) = **882**

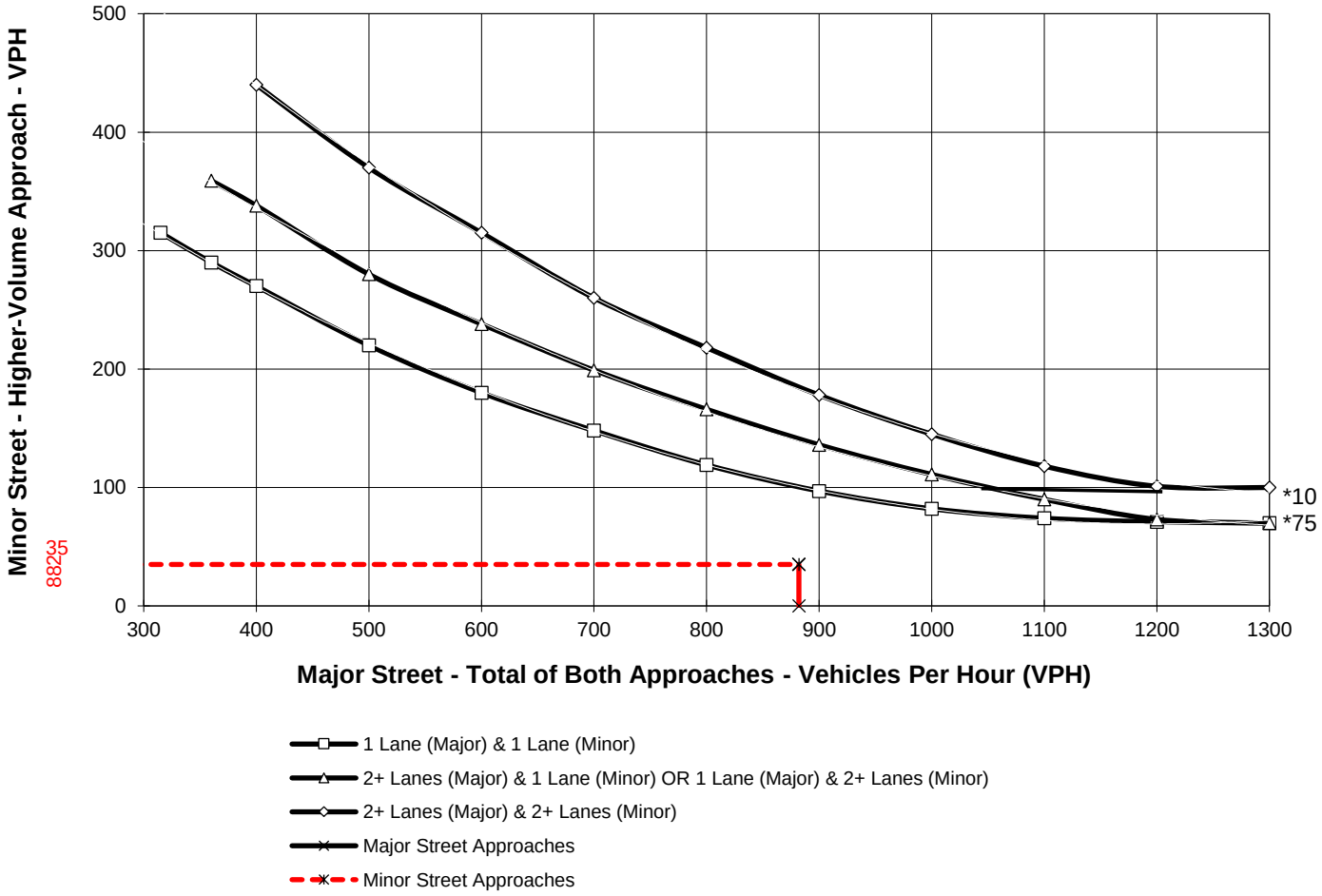
Number of Approach Lanes Major Street = **2**

Minor Street Name = **Via La Sierra Lane**

High Volume Approach (VPH) = **35**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Plus Project Conditions - AM Peak Hour**

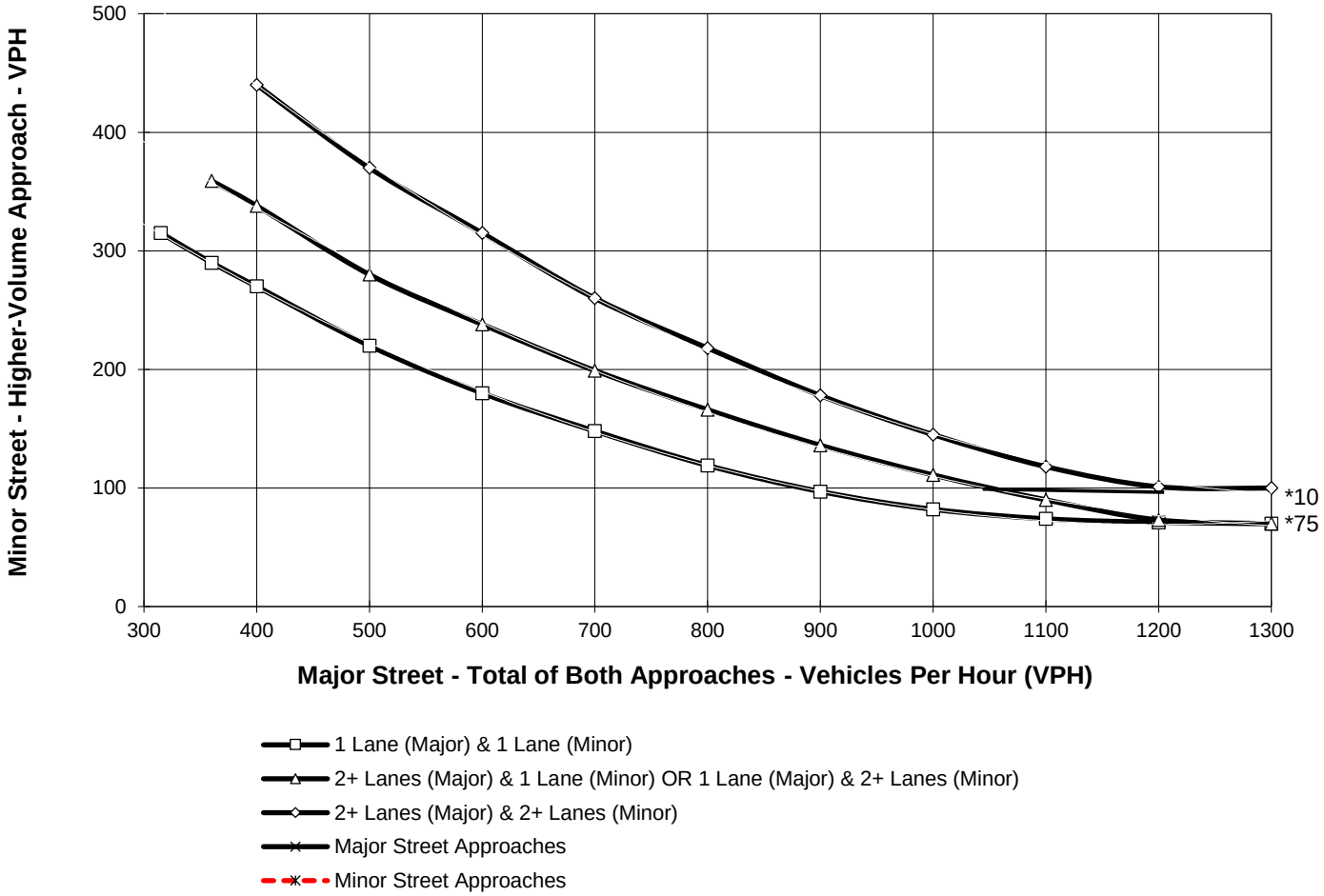
Major Street Name = **Project Access 1**

Total of Both Approaches (VPH) = **54**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Cawston Avenue**

High Volume Approach (VPH) = **18**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Existing Plus Project Conditions - PM Peak Hour**

Major Street Name = **Cawston Avenue**

Total of Both Approaches (VPH) = **61**

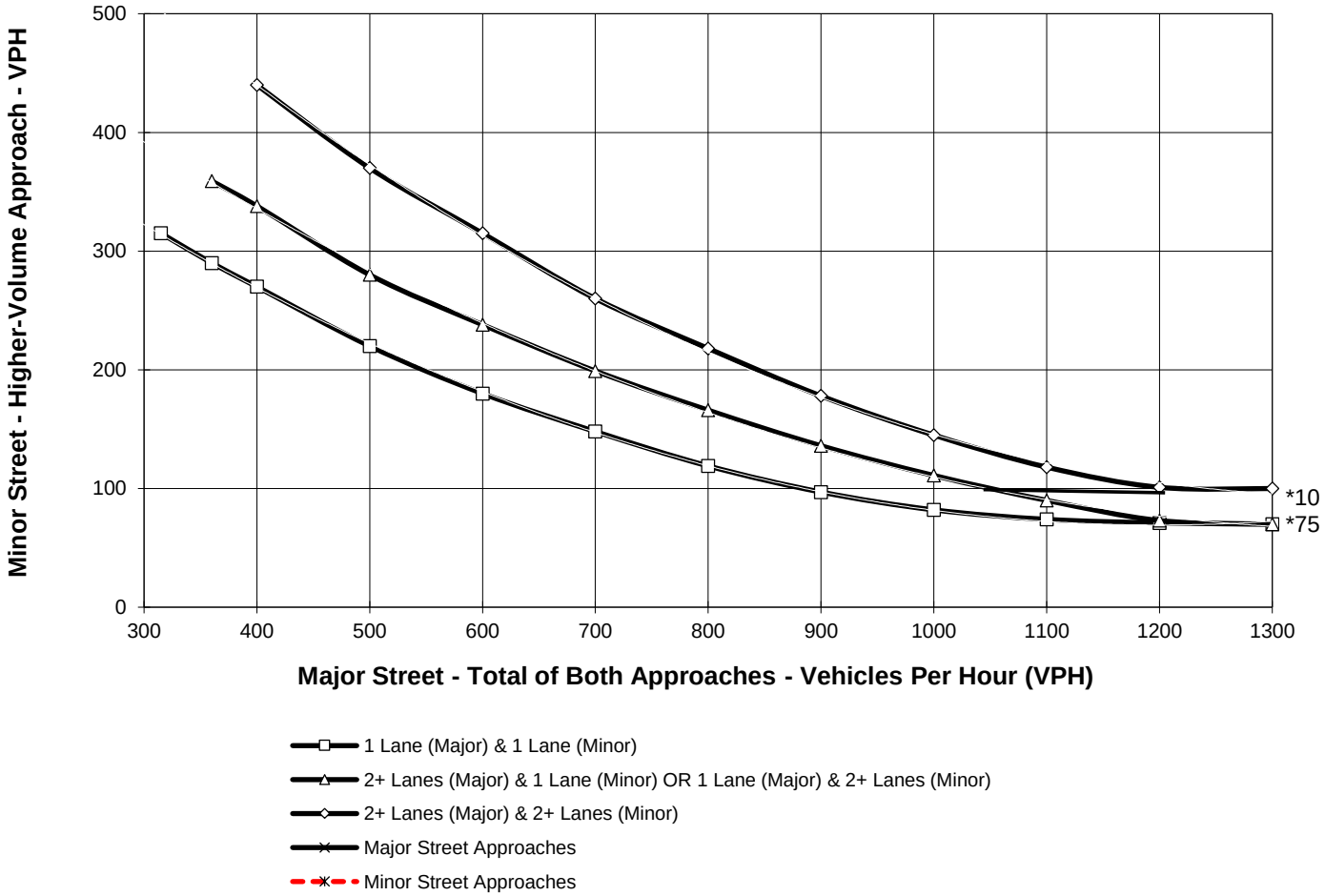
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Project Access 1**

High Volume Approach (VPH) = **36**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year With Project Conditions - AM Peak Hour**

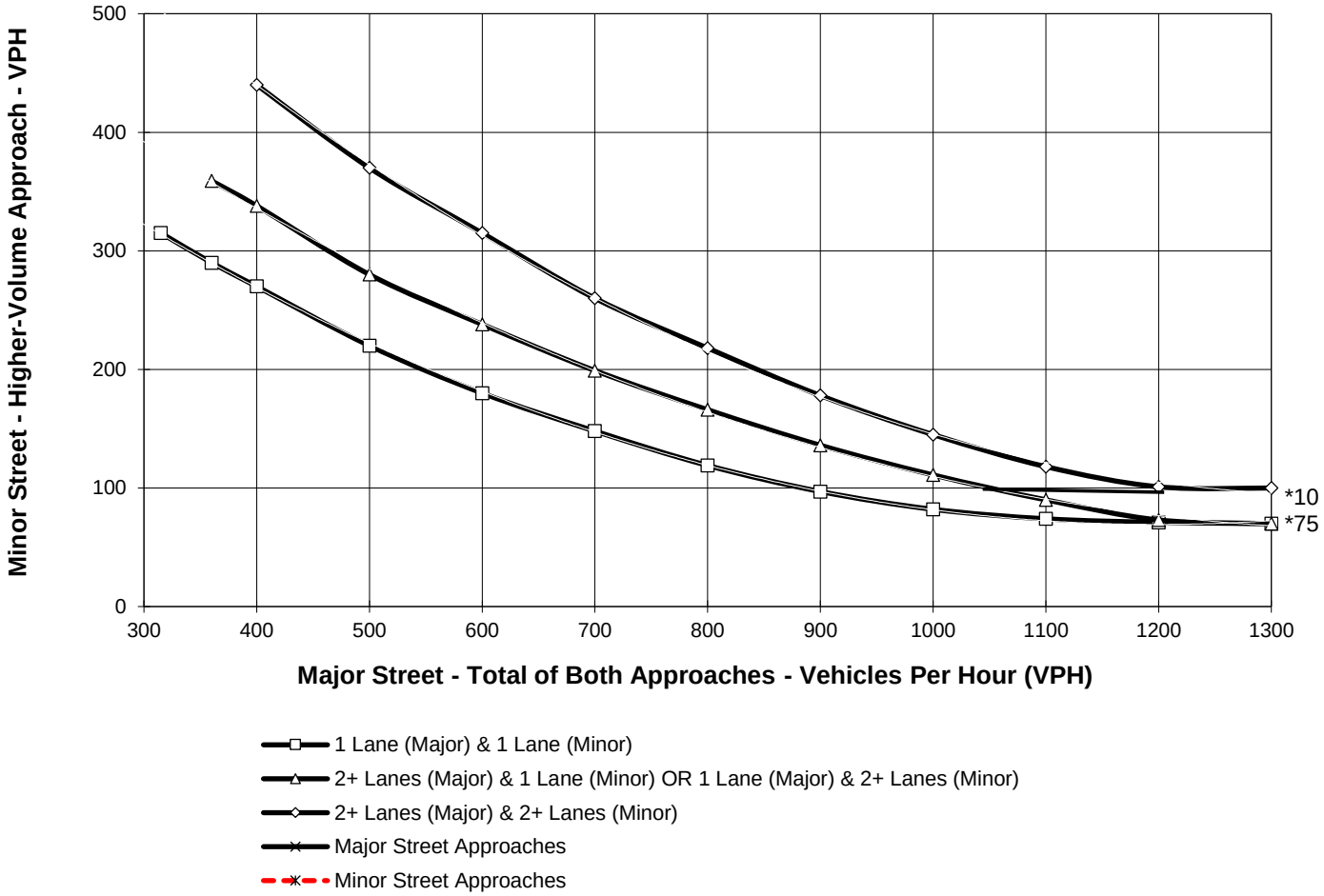
Major Street Name = **Project Access 1**

Total of Both Approaches (VPH) = **54**
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Cawston Avenue**

High Volume Approach (VPH) = **18**
Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

WARRANT 3, PEAK HOUR (70% FACTOR)
(Rural Areas)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h OR ABOVE 40 mph ON MAJOR STREET)

Traffic Conditions = **Opening Year With Project Conditions - PM Peak Hour**

Major Street Name = **Cawston Avenue**

Total of Both Approaches (VPH) = **61**

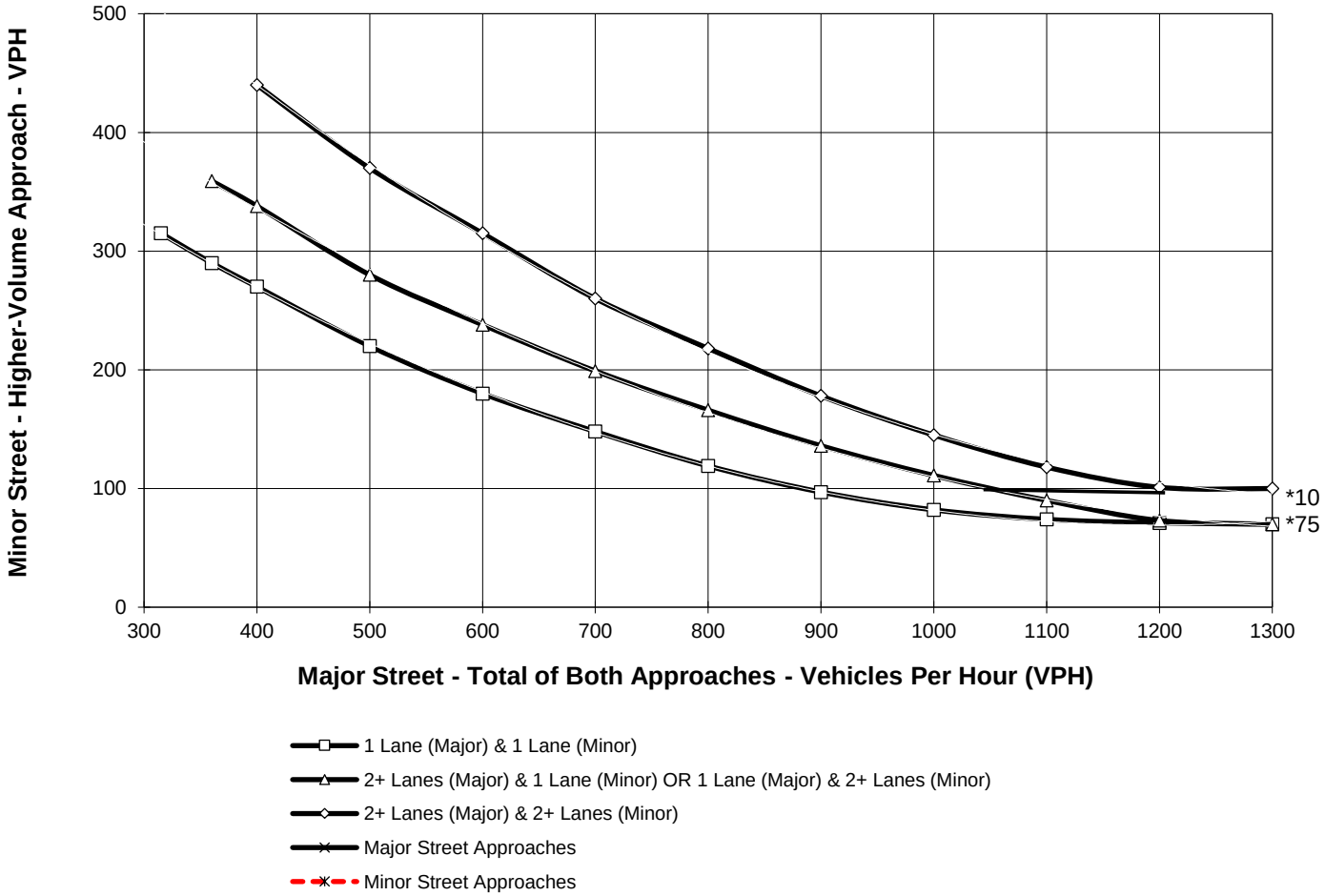
Number of Approach Lanes Major Street = **1**

Minor Street Name = **Project Access 1**

High Volume Approach (VPH) = **36**

Number of Approach Lanes Minor Street = **1**

SIGNAL WARRANT NOT SATISFIED



* 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.

Appendix C

Existing Conditions
LOS Analysis Worksheets

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		100	195		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3539	1583	1770	1863	1770	1583
Link Speed (mph)	30			30	30	
Link Distance (ft)	664			1050	754	
Travel Time (s)	15.1			23.9	17.1	

Intersection Summary	
Area Type:	Other

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Volume (vph)	253	41	33	166	68	69
Future Volume (vph)	253	41	33	166	68	69
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	294	48	38	193	79	80
Shared Lane Traffic (%)						
Lane Group Flow (vph)	294	48	38	193	79	80

Intersection Summary

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	253	41	33	166	68	69
Future Vol, veh/h	253	41	33	166	68	69
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	195	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	294	48	38	193	79	80

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	342	0	563	147
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	269	-
Critical Hdwy	-	-	4.13	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1215	-	472	874
Stage 1	-	-	-	-	731	-
Stage 2	-	-	-	-	775	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1215	-	457	874
Mov Cap-2 Maneuver	-	-	-	-	457	-
Stage 1	-	-	-	-	731	-
Stage 2	-	-	-	-	751	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	457	874	-	-	1215	-
HCM Lane V/C Ratio	0.173	0.092	-	-	0.032	-
HCM Control Delay (s)	14.5	9.5	-	-	8.1	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.6	0.3	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	200		100	0
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Link Speed (mph)	30			30	30	
Link Distance (ft)	1050			1580	423	
Travel Time (s)	23.9			35.9	9.6	

Intersection Summary	
Area Type:	Other

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Volume (vph)	244	51	123	235	11	77
Future Volume (vph)	244	51	123	235	11	77
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	317	66	160	305	14	100
Shared Lane Traffic (%)						
Lane Group Flow (vph)	317	66	160	305	14	100

Intersection Summary

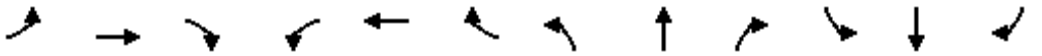
Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	244	51	123	235	11	77
Future Vol, veh/h	244	51	123	235	11	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	200	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	317	66	160	305	14	100

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	383	0	942	317
Stage 1	-	-	-	-	317	-
Stage 2	-	-	-	-	625	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1175	-	292	724
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	534	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1175	-	252	724
Mov Cap-2 Maneuver	-	-	-	-	252	-
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	461	-

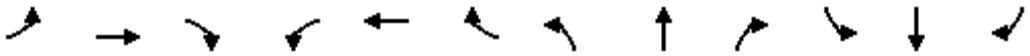
Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	12
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	252	724	-	-	1175	-
HCM Lane V/C Ratio	0.057	0.138	-	-	0.136	-
HCM Control Delay (s)	20.1	10.8	-	-	8.5	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.5	-	-	0.5	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	400		180	375		140	400		150	400		250
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2322			1174			975			1795	
Travel Time (s)		52.8			26.7			22.2			40.8	

Intersection Summary	
Area Type:	Other



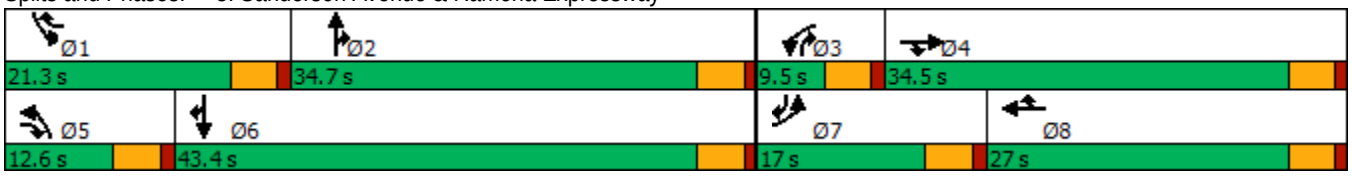
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	391	334	74	46	482	670	124	963	66	549	542	305
Future Volume (vph)	391	334	74	46	482	670	124	963	66	549	542	305
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	407	348	77	48	502	698	129	1003	69	572	565	318
Shared Lane Traffic (%)												
Lane Group Flow (vph)	407	348	77	48	502	698	129	1003	69	572	565	318

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	391	334	74	46	482	670	124	963	66	549	542	305
Future Volume (vph)	391	334	74	46	482	670	124	963	66	549	542	305
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Permitted Phases												
Detector Phase	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	17.0	34.5		9.5	27.0		12.6	34.7		21.3	43.4	
Total Split (%)	17.0%	34.5%		9.5%	27.0%		12.6%	34.7%		21.3%	43.4%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	12.5	31.9	44.2	5.0	22.5	43.8	7.8	30.2	39.7	16.8	39.2	56.2
Actuated g/C Ratio	0.12	0.32	0.44	0.05	0.22	0.44	0.08	0.30	0.40	0.17	0.39	0.56
v/c Ratio	0.95	0.31	0.11	0.28	0.63	1.01	0.48	0.94	0.11	0.99	0.41	0.36
Control Delay	76.9	27.3	17.8	50.2	39.1	65.5	50.4	51.1	19.7	78.5	23.2	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.9	27.3	17.8	50.2	39.1	65.5	50.4	51.1	19.7	78.5	23.2	13.5
LOS	E	C	B	D	D	E	D	D	B	E	C	B
Approach Delay		50.7			54.3			49.2			42.8	
Approach LOS		D			D			D			D	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 48.8	Intersection LOS: D
Intersection Capacity Utilization 90.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Sanderson Avenue & Ramona Expressway



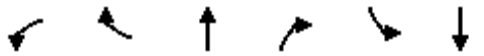
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	391	334	74	46	482	670	124	963	66	549	542	305
Future Volume (veh/h)	391	334	74	46	482	670	124	963	66	549	542	305
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	407	348	77	48	502	698	129	1003	69	572	565	318
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	432	1113	585	127	800	623	193	1073	537	581	1472	855
Arrive On Green	0.13	0.31	0.31	0.04	0.22	0.22	0.06	0.30	0.30	0.17	0.41	0.41
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	407	348	77	48	502	698	129	1003	69	572	565	318
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	11.7	7.5	3.2	1.4	12.7	22.5	3.7	27.4	3.0	16.5	11.1	11.6
Cycle Q Clear(g_c), s	11.7	7.5	3.2	1.4	12.7	22.5	3.7	27.4	3.0	16.5	11.1	11.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	432	1113	585	127	800	623	193	1073	537	581	1472	855
V/C Ratio(X)	0.94	0.31	0.13	0.38	0.63	1.12	0.67	0.93	0.13	0.99	0.38	0.37
Avail Cap(c_a), veh/h	432	1113	585	173	800	623	280	1073	537	581	1472	855
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	26.1	20.9	47.0	35.0	30.4	46.3	33.9	22.9	41.5	20.4	13.3
Incr Delay (d2), s/veh	29.1	0.2	0.1	1.8	1.6	73.9	4.0	15.6	0.5	33.5	0.8	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	3.1	1.2	0.6	5.6	27.1	1.7	13.9	1.2	9.6	4.7	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.5	26.3	21.0	48.9	36.5	104.3	50.3	49.6	23.3	75.0	21.2	14.5
LnGrp LOS	E	C	C	D	D	F	D	D	C	E	C	B
Approach Vol, veh/h		832			1248			1201			1455	
Approach Delay, s/veh		48.4			74.9			48.2			40.9	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.3	34.7	8.2	35.8	10.1	45.9	17.0	27.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.8	30.2	5.0	30.0	8.1	38.9	12.5	22.5
Max Q Clear Time (g_c+I1), s	18.5	29.4	3.4	9.5	5.7	13.6	13.7	24.5
Green Ext Time (p_c), s	0.0	0.5	0.0	2.4	0.1	5.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	53.0
HCM 6th LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	50	0		120	155	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		177		25		
Link Speed (mph)	30		30			30
Link Distance (ft)	1246		1018			975
Travel Time (s)	28.3		23.1			22.2

Intersection Summary	
Area Type:	Other



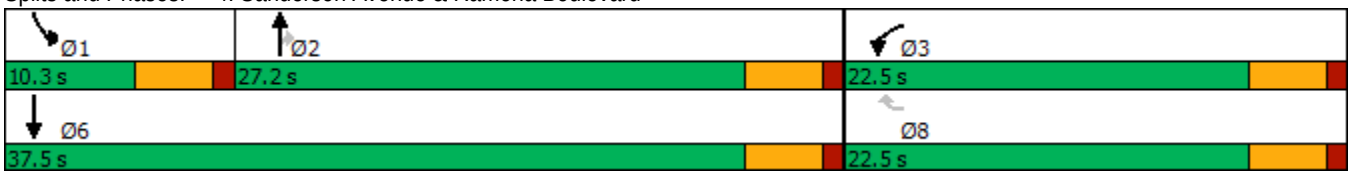
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	48	172	990	24	88	594
Future Volume (vph)	48	172	990	24	88	594
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	49	177	1021	25	91	612
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	177	1021	25	91	612

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	172	990	24	88	594
Future Volume (vph)	48	172	990	24	88	594
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5
Total Split (s)	22.5	22.5	27.2	27.2	10.3	37.5
Total Split (%)	37.5%	37.5%	45.3%	45.3%	17.2%	62.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	7.2	6.8	30.8	30.8	5.8	37.0
Actuated g/C Ratio	0.14	0.14	0.61	0.61	0.12	0.74
v/c Ratio	0.19	0.48	0.47	0.03	0.45	0.23
Control Delay	20.0	8.7	9.1	4.1	28.2	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.0	8.7	9.1	4.1	28.2	3.3
LOS	C	A	A	A	C	A
Approach Delay	11.2		9.0			6.5
Approach LOS	B		A			A

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 50.1	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.48	
Intersection Signal Delay: 8.4	Intersection LOS: A
Intersection Capacity Utilization 47.7%	ICU Level of Service A
Analysis Period (min) 15	

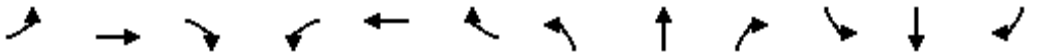
Splits and Phases: 4: Sanderson Avenue & Ramona Boulevard



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	48	172	990	24	88	594
Future Volume (veh/h)	48	172	990	24	88	594
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	49	177	1021	25	91	612
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	268	238	1792	799	129	2372
Arrive On Green	0.15	0.15	0.50	0.50	0.07	0.67
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	49	177	1021	25	91	612
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	1.2	5.3	9.9	0.4	2.5	3.4
Cycle Q Clear(g_c), s	1.2	5.3	9.9	0.4	2.5	3.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	268	238	1792	799	129	2372
V/C Ratio(X)	0.18	0.74	0.57	0.03	0.71	0.26
Avail Cap(c_a), veh/h	649	577	1792	799	209	2372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	20.1	8.5	6.2	22.4	3.3
Incr Delay (d2), s/veh	0.3	4.5	1.3	0.1	7.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.0	3.2	0.1	1.2	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.7	24.6	9.8	6.2	29.4	3.6
LnGrp LOS	B	C	A	A	C	A
Approach Vol, veh/h	226		1046			703
Approach Delay, s/veh	23.3		9.8			6.9
Approach LOS	C		A			A

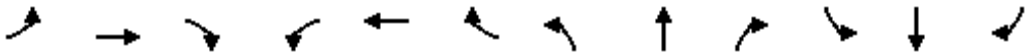
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.1	29.4			37.5	11.9
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.8	22.7			33.0	18.0
Max Q Clear Time (g_c+I1), s	4.5	11.9			5.4	7.3
Green Ext Time (p_c), s	0.0	5.3			4.5	0.5

Intersection Summary	
HCM 6th Ctrl Delay	10.3
HCM 6th LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		205	315		315	300		205	290		200
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	1.00	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	1863	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	1863	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176			176			176			176
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1580			1322			1146			1419	
Travel Time (s)		35.9			30.0			26.0			32.3	

Intersection Summary	
Area Type:	Other



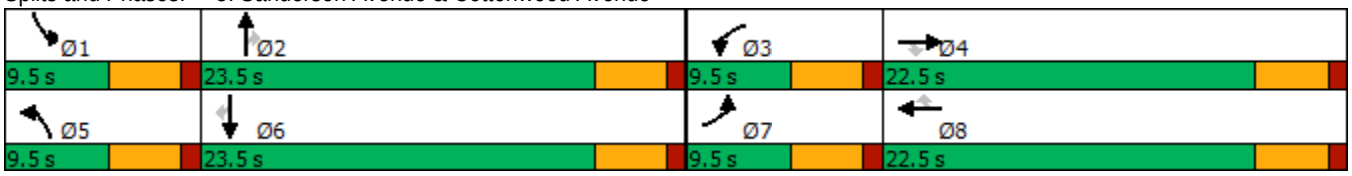
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	130	220	33	78	298	104	46	743	69	22	540	75
Future Volume (vph)	130	220	33	78	298	104	46	743	69	22	540	75
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	138	234	35	83	317	111	49	790	73	23	574	80
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	234	35	83	317	111	49	790	73	23	574	80

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	220	33	78	298	104	46	743	69	22	540	75
Future Volume (vph)	130	220	33	78	298	104	46	743	69	22	540	75
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	23.5	23.5	9.5	23.5	23.5
Total Split (%)	14.6%	34.6%	34.6%	14.6%	34.6%	34.6%	14.6%	36.2%	36.2%	14.6%	36.2%	36.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	5.3	16.2	16.2	5.3	14.1	14.1	5.3	21.7	21.7	5.3	20.0	20.0
Actuated g/C Ratio	0.10	0.29	0.29	0.10	0.25	0.25	0.10	0.39	0.39	0.10	0.36	0.36
v/c Ratio	0.42	0.23	0.06	0.26	0.67	0.21	0.15	0.57	0.10	0.07	0.45	0.12
Control Delay	32.0	17.5	0.2	29.6	28.0	2.1	28.6	18.3	0.3	28.3	17.9	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.0	17.5	0.2	29.6	28.0	2.1	28.6	18.3	0.3	28.3	17.9	0.3
LOS	C	B	A	C	C	A	C	B	A	C	B	A
Approach Delay		20.9			22.6			17.4			16.2	
Approach LOS		C			C			B			B	

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 55.6	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 18.7	Intersection LOS: B
Intersection Capacity Utilization 51.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Sanderson Avenue & Cottonwood Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	220	33	78	298	104	46	743	69	22	540	75
Future Volume (veh/h)	130	220	33	78	298	104	46	743	69	22	540	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	138	234	35	83	317	111	49	790	73	23	574	80
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	271	824	368	223	408	345	164	1271	567	93	1197	534
Arrive On Green	0.08	0.23	0.23	0.06	0.22	0.22	0.05	0.36	0.36	0.03	0.34	0.34
Sat Flow, veh/h	3456	3554	1585	3456	1870	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	138	234	35	83	317	111	49	790	73	23	574	80
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1870	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	2.2	3.1	1.0	1.3	9.0	3.3	0.8	10.4	1.7	0.4	7.2	2.0
Cycle Q Clear(g_c), s	2.2	3.1	1.0	1.3	9.0	3.3	0.8	10.4	1.7	0.4	7.2	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	824	368	223	408	345	164	1271	567	93	1197	534
V/C Ratio(X)	0.51	0.28	0.10	0.37	0.78	0.32	0.30	0.62	0.13	0.25	0.48	0.15
Avail Cap(c_a), veh/h	306	1134	506	306	597	506	306	1271	567	306	1197	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	17.8	17.0	25.3	20.8	18.5	25.9	15.0	12.2	26.9	14.8	13.1
Incr Delay (d2), s/veh	1.5	0.2	0.1	1.0	3.9	0.5	1.0	2.3	0.5	1.4	1.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.2	0.3	0.5	4.0	1.2	0.3	4.1	0.6	0.2	2.8	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	26.4	18.0	17.1	26.3	24.7	19.1	27.0	17.3	12.7	28.3	16.2	13.7
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		407			511			912			677	
Approach Delay, s/veh		20.8			23.7			17.4			16.3	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.0	24.7	8.1	17.6	7.2	23.5	8.9	16.8
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.4	12.4	3.3	5.1	2.8	9.2	4.2	11.0
Green Ext Time (p_c), s	0.0	3.0	0.0	1.2	0.0	2.9	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	18.9
HCM 6th LOS	B

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		100	195		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3539	1583	1770	1863	1770	1583
Link Speed (mph)	30			30	30	
Link Distance (ft)	664			1050	754	
Travel Time (s)	15.1			23.9	17.1	

Intersection Summary	
Area Type:	Other

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Volume (vph)	322	23	44	207	17	30
Future Volume (vph)	322	23	44	207	17	30
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	332	24	45	213	18	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	332	24	45	213	18	31

Intersection Summary

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	322	23	44	207	17	30
Future Vol, veh/h	322	23	44	207	17	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	195	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	332	24	45	213	18	31

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	356	0	635	166
Stage 1	-	-	-	-	332	-
Stage 2	-	-	-	-	303	-
Critical Hdwy	-	-	4.13	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1201	-	426	850
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	748	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1201	-	410	850
Mov Cap-2 Maneuver	-	-	-	-	410	-
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	720	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	410	850	-	-	1201	-
HCM Lane V/C Ratio	0.043	0.036	-	-	0.038	-
HCM Control Delay (s)	14.2	9.4	-	-	8.1	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	200		100	0
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected			0.950			
Satd. Flow (prot)	1863	1583	1770	1863	1863	1583
Flt Permitted			0.950			
Satd. Flow (perm)	1863	1583	1770	1863	1863	1583
Link Speed (mph)	30			30	30	
Link Distance (ft)	1050			1580	423	
Travel Time (s)	23.9			35.9	9.6	

Intersection Summary	
Area Type:	Other

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Volume (vph)	362	1	1	268	0	1
Future Volume (vph)	362	1	1	268	0	1
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	402	1	1	298	0	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	402	1	1	298	0	1

Intersection Summary

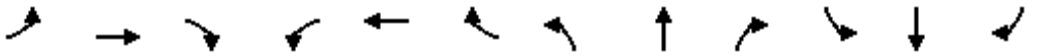
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	362	1	1	268	0	1
Future Vol, veh/h	362	1	1	268	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	200	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	402	1	1	298	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	403	0	702	402
Stage 1	-	-	-	-	402	-
Stage 2	-	-	-	-	300	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1156	-	404	648
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	752	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1156	-	404	648
Mov Cap-2 Maneuver	-	-	-	-	404	-
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	751	-

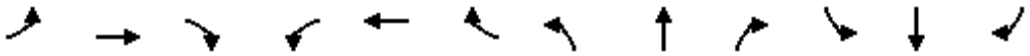
Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	648	-	-	1156	-
HCM Lane V/C Ratio	-	0.002	-	-	0.001	-
HCM Control Delay (s)	0	10.6	-	-	8.1	-
HCM Lane LOS	A	B	-	-	A	-
HCM 95th %tile Q(veh)	-	0	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	400		180	375		140	400		150	400		250
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2322			1174			975			1795	
Travel Time (s)		52.8			26.7			22.2			40.8	

Intersection Summary	
Area Type:	Other



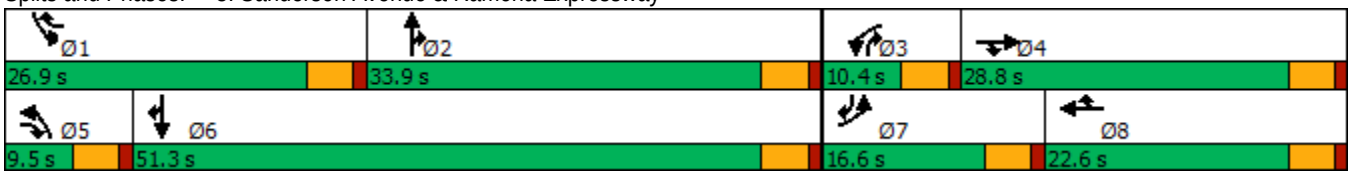
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	354	548	155	48	414	571	133	619	25	668	1208	515
Future Volume (vph)	354	548	155	48	414	571	133	619	25	668	1208	515
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	358	554	157	48	418	577	134	625	25	675	1220	520
Shared Lane Traffic (%)												
Lane Group Flow (vph)	358	554	157	48	418	577	134	625	25	675	1220	520

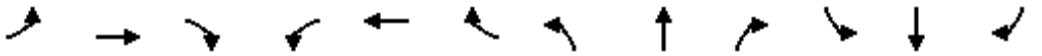
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	354	548	155	48	414	571	133	619	25	668	1208	515
Future Volume (vph)	354	548	155	48	414	571	133	619	25	668	1208	515
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Permitted Phases												
Detector Phase	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	16.6	28.8		10.4	22.6		9.5	33.9		26.9	51.3	
Total Split (%)	16.6%	28.8%		10.4%	22.6%		9.5%	33.9%		26.9%	51.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	12.1	26.4	35.9	5.8	18.1	44.7	5.0	29.7	40.1	22.1	46.8	63.4
Actuated g/C Ratio	0.12	0.26	0.36	0.06	0.18	0.45	0.05	0.30	0.40	0.22	0.47	0.63
v/c Ratio	0.86	0.59	0.28	0.24	0.65	0.82	0.78	0.59	0.04	0.89	0.74	0.52
Control Delay	64.4	36.0	25.5	48.1	43.5	35.2	77.4	32.9	18.8	53.5	25.0	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.4	36.0	25.5	48.1	43.5	35.2	77.4	32.9	18.8	53.5	25.0	12.3
LOS	E	D	C	D	D	D	E	C	B	D	C	B
Approach Delay		44.0			39.2			40.0			30.2	
Approach LOS		D			D			D			C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 36.2	Intersection LOS: D
Intersection Capacity Utilization 74.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Sanderson Avenue & Ramona Expressway





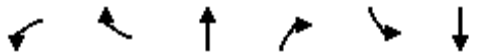
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	354	548	155	48	414	571	133	619	25	668	1208	515
Future Volume (veh/h)	354	548	155	48	414	571	133	619	25	668	1208	515
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	358	554	157	48	418	577	134	625	25	675	1220	520
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	418	942	500	127	643	628	173	1077	539	743	1663	934
Arrive On Green	0.12	0.27	0.27	0.04	0.18	0.18	0.05	0.30	0.30	0.21	0.47	0.47
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	358	554	157	48	418	577	134	625	25	675	1220	520
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	10.2	13.6	7.5	1.4	10.9	18.1	3.8	14.9	1.1	19.1	27.8	20.1
Cycle Q Clear(g_c), s	10.2	13.6	7.5	1.4	10.9	18.1	3.8	14.9	1.1	19.1	27.8	20.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	418	942	500	127	643	628	173	1077	539	743	1663	934
V/C Ratio(X)	0.86	0.59	0.31	0.38	0.65	0.92	0.78	0.58	0.05	0.91	0.73	0.56
Avail Cap(c_a), veh/h	418	942	500	204	643	628	173	1077	539	774	1663	934
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	32.0	26.0	47.0	38.0	28.7	46.9	29.5	22.1	38.3	21.5	12.6
Incr Delay (d2), s/veh	15.9	1.0	0.4	1.8	2.3	18.8	19.5	2.3	0.2	14.3	2.9	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	5.9	2.9	0.6	4.9	15.9	2.1	6.6	0.4	9.4	11.7	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.0	32.9	26.4	48.9	40.3	47.5	66.5	31.7	22.3	52.6	24.5	15.0
LnGrp LOS	E	C	C	D	D	D	E	C	C	D	C	B
Approach Vol, veh/h		1069			1043			784			2415	
Approach Delay, s/veh		40.7			44.7			37.4			30.3	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	34.8	8.2	31.0	9.5	51.3	16.6	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	22.4	29.4	5.9	24.3	5.0	46.8	12.1	18.1
Max Q Clear Time (g_c+I1), s	21.1	16.9	3.4	15.6	5.8	29.8	12.2	20.1
Green Ext Time (p_c), s	0.4	3.5	0.0	2.8	0.0	10.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	36.3
HCM 6th LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	50	0		120	155	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		139		54		
Link Speed (mph)	30		30			30
Link Distance (ft)	1246		1018			975
Travel Time (s)	28.3		23.1			22.2

Intersection Summary	
Area Type:	Other



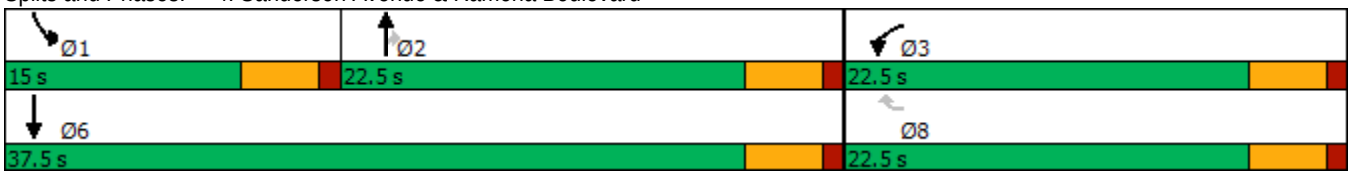
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	21	132	601	51	249	1248
Future Volume (vph)	21	132	601	51	249	1248
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	22	139	633	54	262	1314
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	139	633	54	262	1314

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	21	132	601	51	249	1248
Future Volume (vph)	21	132	601	51	249	1248
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	15.0	37.5
Total Split (%)	37.5%	37.5%	37.5%	37.5%	25.0%	62.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	6.5	6.5	19.8	19.8	10.2	35.5
Actuated g/C Ratio	0.14	0.14	0.41	0.41	0.21	0.74
v/c Ratio	0.09	0.41	0.43	0.08	0.69	0.50
Control Delay	19.0	8.7	12.5	4.4	30.5	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.0	8.7	12.5	4.4	30.5	4.6
LOS	B	A	B	A	C	A
Approach Delay	10.1		11.9			8.9
Approach LOS	B		B			A

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 47.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 9.9	Intersection LOS: A
Intersection Capacity Utilization 46.2%	ICU Level of Service A
Analysis Period (min) 15	

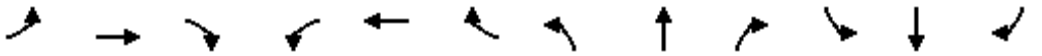
Splits and Phases: 4: Sanderson Avenue & Ramona Boulevard



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	132	601	51	249	1248
Future Volume (veh/h)	21	132	601	51	249	1248
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	139	633	54	262	1314
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	210	187	1485	662	322	2462
Arrive On Green	0.12	0.12	0.42	0.42	0.18	0.69
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	22	139	633	54	262	1314
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	0.5	4.0	6.0	1.0	6.7	8.6
Cycle Q Clear(g_c), s	0.5	4.0	6.0	1.0	6.7	8.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	210	187	1485	662	322	2462
V/C Ratio(X)	0.10	0.74	0.43	0.08	0.81	0.53
Avail Cap(c_a), veh/h	673	599	1485	662	393	2462
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.8	20.3	9.8	8.4	18.7	3.6
Incr Delay (d2), s/veh	0.2	5.7	0.9	0.2	10.5	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	1.6	2.0	0.3	3.4	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.0	26.0	10.7	8.6	29.2	4.4
LnGrp LOS	B	C	B	A	C	A
Approach Vol, veh/h	161		687			1576
Approach Delay, s/veh	25.0		10.6			8.5
Approach LOS	C		B			A

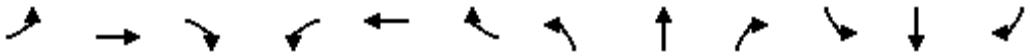
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	13.1	24.4			37.5	10.1
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	10.5	18.0			33.0	18.0
Max Q Clear Time (g_c+I1), s	8.7	8.0			10.6	6.0
Green Ext Time (p_c), s	0.1	3.2			10.7	0.3

Intersection Summary	
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		205	315		315	300		205	290		200
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	1.00	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	1863	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	1863	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			143			143
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1580			1322			1146			1419	
Travel Time (s)		35.9			30.0			26.0			32.3	

Intersection Summary	
Area Type:	Other



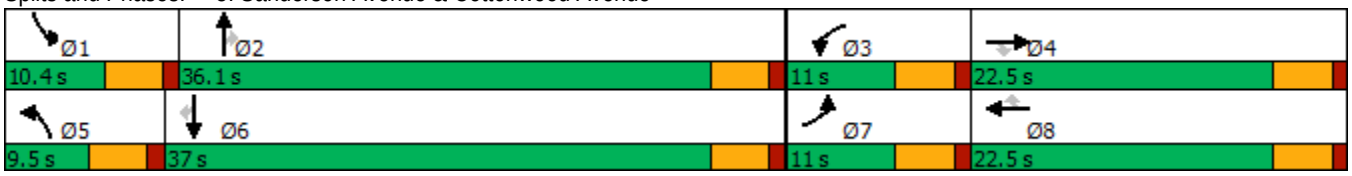
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	86	230	79	85	117	61	35	531	91	91	986	117
Future Volume (vph)	86	230	79	85	117	61	35	531	91	91	986	117
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	88	235	81	87	119	62	36	542	93	93	1006	119
Shared Lane Traffic (%)												
Lane Group Flow (vph)	88	235	81	87	119	62	36	542	93	93	1006	119

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	230	79	85	117	61	35	531	91	91	986	117
Future Volume (vph)	86	230	79	85	117	61	35	531	91	91	986	117
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	11.0	22.5	22.5	11.0	22.5	22.5	9.5	36.1	36.1	10.4	37.0	37.0
Total Split (%)	13.8%	28.1%	28.1%	13.8%	28.1%	28.1%	11.9%	45.1%	45.1%	13.0%	46.3%	46.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	6.4	10.1	10.1	6.4	10.1	10.1	5.1	33.1	33.1	6.0	37.4	37.4
Actuated g/C Ratio	0.09	0.15	0.15	0.09	0.15	0.15	0.07	0.48	0.48	0.09	0.55	0.55
v/c Ratio	0.28	0.45	0.23	0.27	0.43	0.17	0.14	0.32	0.11	0.31	0.52	0.13
Control Delay	34.0	30.7	2.6	33.9	33.4	1.1	34.0	13.6	1.3	35.2	13.4	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	30.7	2.6	33.9	33.4	1.1	34.0	13.6	1.3	35.2	13.4	2.2
LOS	C	C	A	C	C	A	C	B	A	D	B	A
Approach Delay		25.8			26.1			13.0			14.0	
Approach LOS		C			C			B			B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 68.5	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 16.9	Intersection LOS: B
Intersection Capacity Utilization 56.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Sanderson Avenue & Cottonwood Avenue



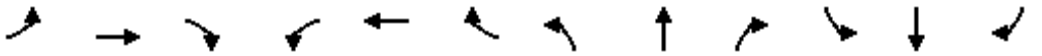
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	230	79	85	117	61	35	531	91	91	986	117
Future Volume (veh/h)	86	230	79	85	117	61	35	531	91	91	986	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	88	235	81	87	119	62	36	542	93	93	1006	119
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	404	180	211	212	180	127	1727	770	216	1819	811
Arrive On Green	0.06	0.11	0.11	0.06	0.11	0.11	0.04	0.49	0.49	0.06	0.51	0.51
Sat Flow, veh/h	3456	3554	1585	3456	1870	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	88	235	81	87	119	62	36	542	93	93	1006	119
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1870	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.6	4.1	3.1	1.6	3.9	2.3	0.7	6.0	2.1	1.7	12.5	2.6
Cycle Q Clear(g_c), s	1.6	4.1	3.1	1.6	3.9	2.3	0.7	6.0	2.1	1.7	12.5	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	212	404	180	211	212	180	127	1727	770	216	1819	811
V/C Ratio(X)	0.42	0.58	0.45	0.41	0.56	0.34	0.28	0.31	0.12	0.43	0.55	0.15
Avail Cap(c_a), veh/h	345	984	439	345	518	439	266	1727	770	314	1819	811
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.4	27.3	26.9	29.4	27.3	26.6	30.5	10.1	9.1	29.4	10.8	8.4
Incr Delay (d2), s/veh	1.3	1.3	1.7	1.3	2.3	1.1	1.2	0.5	0.3	1.4	1.2	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	1.7	1.2	0.7	1.8	0.9	0.3	2.2	0.7	0.7	4.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.7	28.7	28.7	30.7	29.6	27.7	31.7	10.6	9.4	30.7	12.0	8.8
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	A
Approach Vol, veh/h		404			268			671			1218	
Approach Delay, s/veh		29.1			29.5			11.6			13.1	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	36.1	8.5	11.9	6.9	37.8	8.5	11.9
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.9	31.6	6.5	18.0	5.0	32.5	6.5	18.0
Max Q Clear Time (g_c+I1), s	3.7	8.0	3.6	6.1	2.7	14.5	3.6	5.9
Green Ext Time (p_c), s	0.0	4.1	0.0	1.3	0.0	7.4	0.1	0.6

Intersection Summary	
HCM 6th Ctrl Delay	17.0
HCM 6th LOS	B

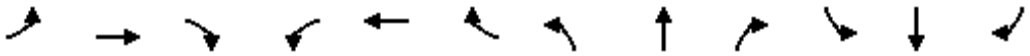
Appendix D

Existing Plus Project Conditions
LOS Analysis Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		100	195		0	0		0	0		100
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Ped Bike Factor												
Frt		0.979			0.989				0.850			0.850
Flt Protected	0.950			0.950				0.954			0.957	
Satd. Flow (prot)	1770	1824	0	1770	1842	0	0	1777	1583	0	1783	1583
Flt Permitted	0.950			0.950				0.954			0.957	
Satd. Flow (perm)	1770	1824	0	1770	1842	0	0	1777	1583	0	1783	1583
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		664			630			754			1160	
Travel Time (s)		15.1			14.3			17.1			26.4	

Intersection Summary	
Area Type:	Other



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	2	255	41	38	171	14	68	2	71	43	5	5
Future Volume (vph)	2	255	41	38	171	14	68	2	71	43	5	5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	297	48	44	199	16	79	2	83	50	6	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	345	0	44	215	0	0	81	83	0	56	6

Intersection Summary

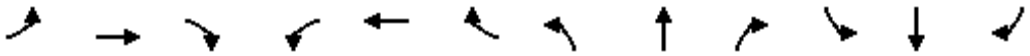
Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	255	41	38	171	14	68	2	71	43	5	5
Future Vol, veh/h	2	255	41	38	171	14	68	2	71	43	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	195	-	-	-	-	0	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	297	48	44	199	16	79	2	83	50	6	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	215	0	0	345	0	0	626	628	321	663	644	207
Stage 1	-	-	-	-	-	-	325	325	-	295	295	-
Stage 2	-	-	-	-	-	-	301	303	-	368	349	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1355	-	-	1214	-	-	397	400	720	375	391	833
Stage 1	-	-	-	-	-	-	687	649	-	713	669	-
Stage 2	-	-	-	-	-	-	708	664	-	652	633	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1355	-	-	1214	-	-	378	385	720	321	377	833
Mov Cap-2 Maneuver	-	-	-	-	-	-	378	385	-	321	377	-
Stage 1	-	-	-	-	-	-	686	648	-	712	645	-
Stage 2	-	-	-	-	-	-	671	640	-	574	632	-

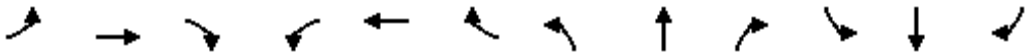
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.4	13.8	17.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	378	720	1355	-	-	1214	-	-	326	833
HCM Lane V/C Ratio	0.215	0.115	0.002	-	-	0.036	-	-	0.171	0.007
HCM Control Delay (s)	17.1	10.6	7.7	-	-	8.1	-	-	18.3	9.4
HCM Lane LOS	C	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.8	0.4	0	-	-	0.1	-	-	0.6	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	200		0	100		0	0		0
Storage Lanes	0		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Ped Bike Factor												
Frt			0.850		0.992				0.850		0.973	
Flt Protected		0.999		0.950				0.950			0.962	
Satd. Flow (prot)	0	1861	1583	1770	1848	0	0	1770	1583	0	1744	0
Flt Permitted		0.999		0.950				0.950			0.962	
Satd. Flow (perm)	0	1861	1583	1770	1848	0	0	1770	1583	0	1744	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		420			1580			423			461	
Travel Time (s)		9.5			35.9			9.6			10.5	

Intersection Summary	
Area Type:	Other



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	4	287	51	123	249	14	11	0	77	43	0	11
Future Volume (vph)	4	287	51	123	249	14	11	0	77	43	0	11
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	373	66	160	323	18	14	0	100	56	0	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	378	66	160	341	0	0	14	100	0	70	0

Intersection Summary

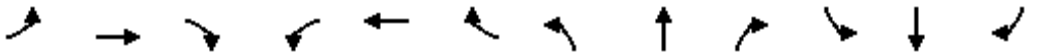
Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	287	51	123	249	14	11	0	77	43	0	11
Future Vol, veh/h	4	287	51	123	249	14	11	0	77	43	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	200	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	373	66	160	323	18	14	0	100	56	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	341	0	0	439	0	0	1042	1044	373	1118	1101	332
Stage 1	-	-	-	-	-	-	383	383	-	652	652	-
Stage 2	-	-	-	-	-	-	659	661	-	466	449	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1218	-	-	1121	-	-	208	229	673	184	212	710
Stage 1	-	-	-	-	-	-	640	612	-	457	464	-
Stage 2	-	-	-	-	-	-	453	460	-	577	572	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1218	-	-	1121	-	-	181	195	673	139	181	710
Mov Cap-2 Maneuver	-	-	-	-	-	-	181	195	-	139	181	-
Stage 1	-	-	-	-	-	-	637	609	-	455	398	-
Stage 2	-	-	-	-	-	-	381	394	-	489	569	-

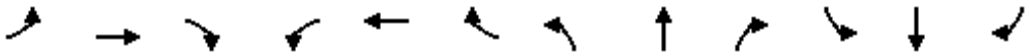
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.8	13.2	41.7
HCM LOS			B	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	181	673	1218	-	-	1121	-	-	166
HCM Lane V/C Ratio	0.079	0.149	0.004	-	-	0.142	-	-	0.422
HCM Control Delay (s)	26.6	11.3	8	0	-	8.7	-	-	41.7
HCM Lane LOS	D	B	A	A	-	A	-	-	E
HCM 95th %tile Q(veh)	0.3	0.5	0	-	-	0.5	-	-	1.9



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	400		180	375		140	400		150	400		250
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2322			1174			975			1795	
Travel Time (s)		52.8			26.7			22.2			40.8	

Intersection Summary	
Area Type:	Other



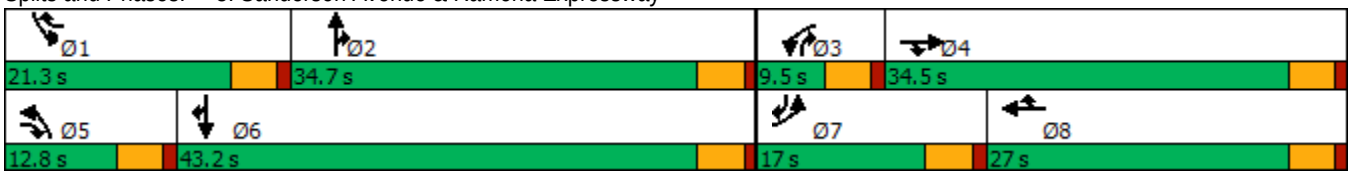
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	391	334	76	50	482	670	129	990	77	549	551	305
Future Volume (vph)	391	334	76	50	482	670	129	990	77	549	551	305
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	407	348	79	52	502	698	134	1031	80	572	574	318
Shared Lane Traffic (%)												
Lane Group Flow (vph)	407	348	79	52	502	698	134	1031	80	572	574	318

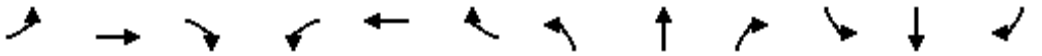
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	391	334	76	50	482	670	129	990	77	549	551	305
Future Volume (vph)	391	334	76	50	482	670	129	990	77	549	551	305
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Permitted Phases												
Detector Phase	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	17.0	34.5		9.5	27.0		12.8	34.7		21.3	43.2	
Total Split (%)	17.0%	34.5%		9.5%	27.0%		12.8%	34.7%		21.3%	43.2%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	12.5	31.9	44.4	5.0	22.5	43.8	8.0	30.2	39.7	16.8	39.0	56.0
Actuated g/C Ratio	0.12	0.32	0.44	0.05	0.22	0.44	0.08	0.30	0.40	0.17	0.39	0.56
v/c Ratio	0.95	0.31	0.11	0.30	0.63	1.01	0.49	0.97	0.13	0.99	0.42	0.36
Control Delay	76.9	27.3	17.8	50.7	39.1	65.5	50.4	55.6	19.9	78.5	23.4	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.9	27.3	17.8	50.7	39.1	65.5	50.4	55.6	19.9	78.5	23.4	13.6
LOS	E	C	B	D	D	E	D	E	B	E	C	B
Approach Delay		50.6			54.3			52.7			42.8	
Approach LOS		D			D			D			D	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 49.7	Intersection LOS: D
Intersection Capacity Utilization 91.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Sanderson Avenue & Ramona Expressway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	391	334	76	50	482	670	129	990	77	549	551	305
Future Volume (veh/h)	391	334	76	50	482	670	129	990	77	549	551	305
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	407	348	79	52	502	698	134	1031	80	572	574	318
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	432	1108	585	132	800	623	199	1073	539	581	1466	852
Arrive On Green	0.13	0.31	0.31	0.04	0.22	0.22	0.06	0.30	0.30	0.17	0.41	0.41
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	407	348	79	52	502	698	134	1031	80	572	574	318
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	11.7	7.5	3.3	1.5	12.7	22.5	3.8	28.5	3.5	16.5	11.3	11.6
Cycle Q Clear(g_c), s	11.7	7.5	3.3	1.5	12.7	22.5	3.8	28.5	3.5	16.5	11.3	11.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	432	1108	585	132	800	623	199	1073	539	581	1466	852
V/C Ratio(X)	0.94	0.31	0.13	0.39	0.63	1.12	0.68	0.96	0.15	0.99	0.39	0.37
Avail Cap(c_a), veh/h	432	1108	585	173	800	623	287	1073	539	581	1466	852
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.4	26.3	20.9	47.0	35.0	30.4	46.2	34.3	22.9	41.5	20.6	13.4
Incr Delay (d2), s/veh	29.1	0.2	0.1	1.9	1.6	73.9	4.0	19.5	0.6	33.5	0.8	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.7	3.2	1.2	0.7	5.6	27.1	1.7	14.9	1.4	9.6	4.8	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.5	26.4	21.0	48.9	36.5	104.3	50.2	53.8	23.5	75.0	21.4	14.6
LnGrp LOS	E	C	C	D	D	F	D	D	C	E	C	B
Approach Vol, veh/h		834			1252			1245			1464	
Approach Delay, s/veh		48.4			74.8			51.5			40.8	
Approach LOS		D			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.3	34.7	8.3	35.7	10.2	45.8	17.0	27.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.8	30.2	5.0	30.0	8.3	38.7	12.5	22.5
Max Q Clear Time (g_c+I1), s	18.5	30.5	3.5	9.5	5.8	13.6	13.7	24.5
Green Ext Time (p_c), s	0.0	0.0	0.0	2.5	0.1	5.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	53.8
HCM 6th LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	50	0		120	155	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		177		30		
Link Speed (mph)	30		30			30
Link Distance (ft)	1246		1018			975
Travel Time (s)	28.3		23.1			22.2

Intersection Summary	
Area Type:	Other

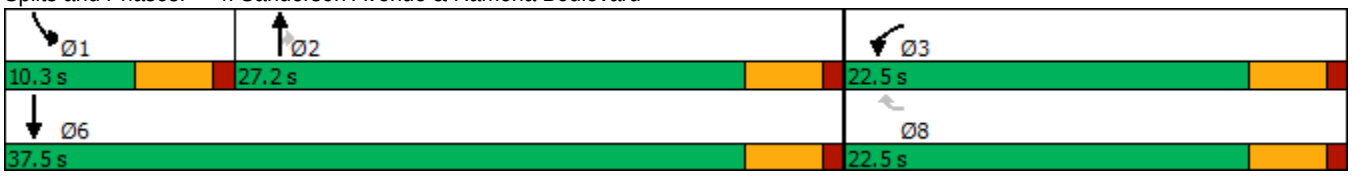
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	50	172	1033	29	88	608
Future Volume (vph)	50	172	1033	29	88	608
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	52	177	1065	30	91	627
Shared Lane Traffic (%)						
Lane Group Flow (vph)	52	177	1065	30	91	627

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	50	172	1033	29	88	608
Future Volume (vph)	50	172	1033	29	88	608
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5
Total Split (s)	22.5	22.5	27.2	27.2	10.3	37.5
Total Split (%)	37.5%	37.5%	45.3%	45.3%	17.2%	62.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	7.2	6.8	30.7	30.7	5.8	36.9
Actuated g/C Ratio	0.14	0.14	0.61	0.61	0.12	0.74
v/c Ratio	0.20	0.48	0.49	0.03	0.45	0.24
Control Delay	20.2	8.7	9.3	3.9	28.3	3.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.2	8.7	9.3	3.9	28.3	3.3
LOS	C	A	A	A	C	A
Approach Delay	11.3		9.2			6.5
Approach LOS	B		A			A

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 50	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 8.5	Intersection LOS: A
Intersection Capacity Utilization 48.8%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 4: Sanderson Avenue & Ramona Boulevard



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	50	172	1033	29	88	608
Future Volume (veh/h)	50	172	1033	29	88	608
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	52	177	1065	30	91	627
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	269	239	1791	799	128	2371
Arrive On Green	0.15	0.15	0.50	0.50	0.07	0.67
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	52	177	1065	30	91	627
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	1.3	5.3	10.5	0.5	2.5	3.5
Cycle Q Clear(g_c), s	1.3	5.3	10.5	0.5	2.5	3.5
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	269	239	1791	799	128	2371
V/C Ratio(X)	0.19	0.74	0.59	0.04	0.71	0.26
Avail Cap(c_a), veh/h	648	577	1791	799	209	2371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.4	20.1	8.7	6.2	22.4	3.3
Incr Delay (d2), s/veh	0.3	4.5	1.5	0.1	7.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	2.0	3.4	0.1	1.2	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.7	24.5	10.1	6.3	29.4	3.6
LnGrp LOS	B	C	B	A	C	A
Approach Vol, veh/h	229		1095			718
Approach Delay, s/veh	23.2		10.0			6.9
Approach LOS	C		B			A

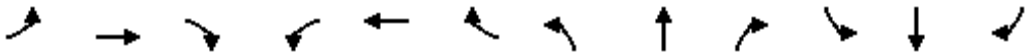
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	8.1	29.4			37.5	12.0
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	5.8	22.7			33.0	18.0
Max Q Clear Time (g_c+I1), s	4.5	12.5			5.5	7.3
Green Ext Time (p_c), s	0.0	5.3			4.7	0.5

Intersection Summary	
HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		205	315		315	300		205	290		200
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	1.00	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	1863	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	1863	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176			176			176			176
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1580			1322			1146			1419	
Travel Time (s)		35.9			30.0			26.0			32.3	

Intersection Summary

Area Type: Other



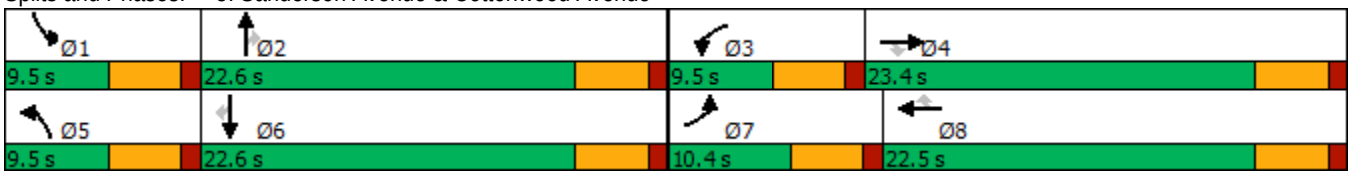
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	179	242	49	78	305	104	51	743	69	22	540	91
Future Volume (vph)	179	242	49	78	305	104	51	743	69	22	540	91
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	190	257	52	83	324	111	54	790	73	23	574	97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	257	52	83	324	111	54	790	73	23	574	97

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	242	49	78	305	104	51	743	69	22	540	91
Future Volume (vph)	179	242	49	78	305	104	51	743	69	22	540	91
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	10.4	23.4	23.4	9.5	22.5	22.5	9.5	22.6	22.6	9.5	22.6	22.6
Total Split (%)	16.0%	36.0%	36.0%	14.6%	34.6%	34.6%	14.6%	34.8%	34.8%	14.6%	34.8%	34.8%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	6.0	19.8	19.8	5.1	14.3	14.3	5.1	20.2	20.2	5.1	18.5	18.5
Actuated g/C Ratio	0.10	0.34	0.34	0.09	0.25	0.25	0.09	0.35	0.35	0.09	0.32	0.32
v/c Ratio	0.53	0.21	0.08	0.27	0.70	0.21	0.18	0.64	0.11	0.08	0.51	0.15
Control Delay	33.0	16.5	0.2	29.9	29.4	2.1	28.9	20.7	0.3	28.4	19.6	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	16.5	0.2	29.9	29.4	2.1	28.9	20.7	0.3	28.4	19.6	1.1
LOS	C	B	A	C	C	A	C	C	A	C	B	A
Approach Delay		21.1			23.7			19.6			17.3	
Approach LOS		C			C			B			B	

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 57.7	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 20.1	Intersection LOS: C
Intersection Capacity Utilization 54.2%	ICU Level of Service A
Analysis Period (min) 15	

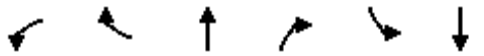
Splits and Phases: 5: Sanderson Avenue & Cottonwood Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	242	49	78	305	104	51	743	69	22	540	91
Future Volume (veh/h)	179	242	49	78	305	104	51	743	69	22	540	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	190	257	52	83	324	111	54	790	73	23	574	97
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	294	861	384	223	415	352	175	1229	548	93	1145	511
Arrive On Green	0.09	0.24	0.24	0.06	0.22	0.22	0.05	0.35	0.35	0.03	0.32	0.32
Sat Flow, veh/h	3456	3554	1585	3456	1870	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	190	257	52	83	324	111	54	790	73	23	574	97
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1870	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	3.0	3.3	1.4	1.3	9.2	3.3	0.8	10.5	1.8	0.4	7.3	2.5
Cycle Q Clear(g_c), s	3.0	3.3	1.4	1.3	9.2	3.3	0.8	10.5	1.8	0.4	7.3	2.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	294	861	384	223	415	352	175	1229	548	93	1145	511
V/C Ratio(X)	0.65	0.30	0.14	0.37	0.78	0.32	0.31	0.64	0.13	0.25	0.50	0.19
Avail Cap(c_a), veh/h	363	1195	533	307	599	508	307	1229	548	307	1145	511
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	17.4	16.7	25.2	20.6	18.3	25.7	15.5	12.6	26.8	15.4	13.8
Incr Delay (d2), s/veh	2.8	0.2	0.2	1.0	4.2	0.5	1.0	2.6	0.5	1.4	1.6	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.3	0.5	0.5	4.1	1.2	0.4	4.2	0.6	0.2	2.9	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.7	17.6	16.8	26.2	24.7	18.8	26.7	18.0	13.1	28.2	17.0	14.6
LnGrp LOS	C	B	B	C	C	B	C	B	B	C	B	B
Approach Vol, veh/h		499			518			917			694	
Approach Delay, s/veh		21.3			23.7			18.2			17.0	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.0	23.9	8.1	18.1	7.3	22.6	9.3	17.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.1	5.0	18.9	5.0	18.1	5.9	18.0
Max Q Clear Time (g_c+I1), s	2.4	12.5	3.3	5.3	2.8	9.3	5.0	11.2
Green Ext Time (p_c), s	0.0	2.7	0.0	1.4	0.0	2.8	0.1	1.3

Intersection Summary	
HCM 6th Ctrl Delay	19.6
HCM 6th LOS	B



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.865			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1611	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1611	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	600		1160			530
Travel Time (s)	13.6		26.4			12.0

Intersection Summary	
Area Type:	Other

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	54	0	0	18	0	0
Future Volume (vph)	54	0	0	18	0	0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	59	0	0	20	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	0	20	0	0	0

Intersection Summary

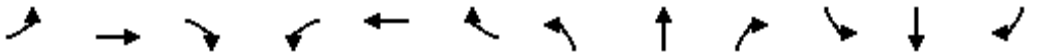
Intersection	
Int Delay, s/veh	6.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	54	0	0	18	0	0
Future Vol, veh/h	54	0	0	18	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	0	0	20	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	11	10	0	0	20	0
Stage 1	10	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1009	1071	-	-	1596	-
Stage 1	1013	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1009	1071	-	-	1596	-
Mov Cap-2 Maneuver	1009	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

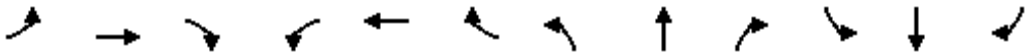
Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1009	1596	-
HCM Lane V/C Ratio	-	-	0.058	-	-
HCM Control Delay (s)	-	-	8.8	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		100	195		0	0		0	0		100
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Ped Bike Factor												
Frt		0.990			0.972				0.850			0.850
Flt Protected	0.950			0.950				0.964			0.958	
Satd. Flow (prot)	1770	1844	0	1770	1811	0	0	1796	1583	0	1785	1583
Flt Permitted	0.950			0.950				0.964			0.958	
Satd. Flow (perm)	1770	1844	0	1770	1811	0	0	1796	1583	0	1785	1583
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		664			630			754			1160	
Travel Time (s)		15.1			14.3			17.1			26.4	

Intersection Summary	
Area Type:	Other



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	6	328	23	48	211	48	17	6	36	28	4	4
Future Volume (vph)	6	328	23	48	211	48	17	6	36	28	4	4
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	6	342	24	50	220	50	18	6	38	29	4	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	366	0	50	270	0	0	24	38	0	33	4

Intersection Summary

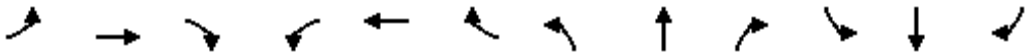
Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	328	23	48	211	48	17	6	36	28	4	4
Future Vol, veh/h	6	328	23	48	211	48	17	6	36	28	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	195	-	-	-	-	0	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	342	24	50	220	50	18	6	38	29	4	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	270	0	0	366	0	0	715	736	354	733	723	245
Stage 1	-	-	-	-	-	-	366	366	-	345	345	-
Stage 2	-	-	-	-	-	-	349	370	-	388	378	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1293	-	-	1193	-	-	346	346	690	336	352	794
Stage 1	-	-	-	-	-	-	653	623	-	671	636	-
Stage 2	-	-	-	-	-	-	667	620	-	636	615	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1293	-	-	1193	-	-	329	330	690	302	335	794
Mov Cap-2 Maneuver	-	-	-	-	-	-	329	330	-	302	335	-
Stage 1	-	-	-	-	-	-	650	620	-	668	609	-
Stage 2	-	-	-	-	-	-	631	594	-	593	612	-

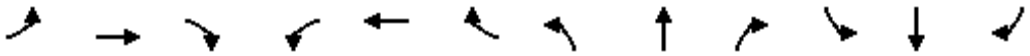
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.3	13	17.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	329	690	1293	-	-	1193	-	-	306	794
HCM Lane V/C Ratio	0.073	0.054	0.005	-	-	0.042	-	-	0.109	0.005
HCM Control Delay (s)	16.8	10.5	7.8	-	-	8.2	-	-	18.2	9.6
HCM Lane LOS	C	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.2	0.2	0	-	-	0.1	-	-	0.4	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	200		0	100		0	0		0
Storage Lanes	0		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Ped Bike Factor												
Frt			0.850		0.980				0.850		0.972	
Flt Protected		0.999		0.950							0.962	
Satd. Flow (prot)	0	1861	1583	1770	1825	0	0	1863	1583	0	1742	0
Flt Permitted		0.999		0.950							0.962	
Satd. Flow (perm)	0	1861	1583	1770	1825	0	0	1863	1583	0	1742	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		420			1580			423			460	
Travel Time (s)		9.5			35.9			9.6			10.5	

Intersection Summary	
Area Type:	Other



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	12	390	1	1	316	48	0	0	1	28	0	7
Future Volume (vph)	12	390	1	1	316	48	0	0	1	28	0	7
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	433	1	1	351	53	0	0	1	31	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	446	1	1	404	0	0	0	1	0	39	0

Intersection Summary

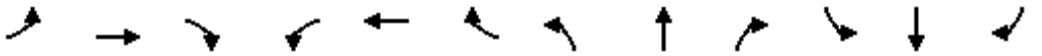
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	390	1	1	316	48	0	0	1	28	0	7
Future Vol, veh/h	12	390	1	1	316	48	0	0	1	28	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	200	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	433	1	1	351	53	0	0	1	31	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	404	0	0	434	0	0	843	865	433	840	840	378
Stage 1	-	-	-	-	-	-	459	459	-	380	380	-
Stage 2	-	-	-	-	-	-	384	406	-	460	460	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1155	-	-	1126	-	-	284	292	623	285	302	669
Stage 1	-	-	-	-	-	-	582	566	-	642	614	-
Stage 2	-	-	-	-	-	-	639	598	-	581	566	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1155	-	-	1126	-	-	277	287	623	281	297	669
Mov Cap-2 Maneuver	-	-	-	-	-	-	277	287	-	281	297	-
Stage 1	-	-	-	-	-	-	573	558	-	632	613	-
Stage 2	-	-	-	-	-	-	631	597	-	571	558	-

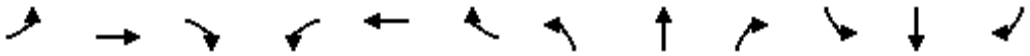
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	10.8	17.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	623	1155	-	-	1126	-	-	318
HCM Lane V/C Ratio	-	0.002	0.012	-	-	0.001	-	-	0.122
HCM Control Delay (s)	0	10.8	8.2	0	-	8.2	-	-	17.9
HCM Lane LOS	A	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	0	-	-	0	-	-	0.4



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	400		180	375		140	400		150	400		250
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2322			1174			975			1795	
Travel Time (s)		52.8			26.7			22.2			40.8	

Intersection Summary	
Area Type:	Other



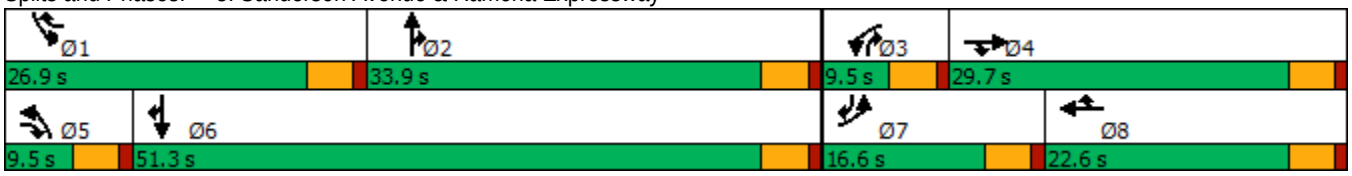
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	354	548	161	60	414	571	137	637	32	668	1238	515
Future Volume (vph)	354	548	161	60	414	571	137	637	32	668	1238	515
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	358	554	163	61	418	577	138	643	32	675	1251	520
Shared Lane Traffic (%)												
Lane Group Flow (vph)	358	554	163	61	418	577	138	643	32	675	1251	520

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	354	548	161	60	414	571	137	637	32	668	1238	515
Future Volume (vph)	354	548	161	60	414	571	137	637	32	668	1238	515
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Permitted Phases												
Detector Phase	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	16.6	29.7		9.5	22.6		9.5	33.9		26.9	51.3	
Total Split (%)	16.6%	29.7%		9.5%	22.6%		9.5%	33.9%		26.9%	51.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	12.1	27.1	36.6	5.0	18.1	44.7	5.0	29.7	39.2	22.1	46.8	63.4
Actuated g/C Ratio	0.12	0.27	0.37	0.05	0.18	0.45	0.05	0.30	0.39	0.22	0.47	0.63
v/c Ratio	0.86	0.58	0.28	0.36	0.65	0.82	0.81	0.61	0.05	0.89	0.76	0.52
Control Delay	64.4	35.1	25.0	52.0	43.5	35.2	80.3	33.3	19.5	53.5	25.5	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.4	35.1	25.0	52.0	43.5	35.2	80.3	33.3	19.5	53.5	25.5	12.3
LOS	E	D	C	D	D	D	F	C	B	D	C	B
Approach Delay		43.3			39.5			40.7			30.4	
Approach LOS		D			D			D			C	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 36.3	Intersection LOS: D
Intersection Capacity Utilization 74.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Sanderson Avenue & Ramona Expressway



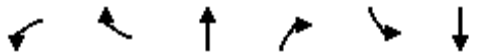
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	354	548	161	60	414	571	137	637	32	668	1238	515
Future Volume (veh/h)	354	548	161	60	414	571	137	637	32	668	1238	515
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	358	554	163	61	418	577	138	643	32	675	1251	520
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	418	928	493	141	643	628	173	1077	545	743	1663	934
Arrive On Green	0.12	0.26	0.26	0.04	0.18	0.18	0.05	0.30	0.30	0.21	0.47	0.47
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	358	554	163	61	418	577	138	643	32	675	1251	520
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	10.2	13.6	7.9	1.7	10.9	18.1	4.0	15.4	1.4	19.1	28.9	20.1
Cycle Q Clear(g_c), s	10.2	13.6	7.9	1.7	10.9	18.1	4.0	15.4	1.4	19.1	28.9	20.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	418	928	493	141	643	628	173	1077	545	743	1663	934
V/C Ratio(X)	0.86	0.60	0.33	0.43	0.65	0.92	0.80	0.60	0.06	0.91	0.75	0.56
Avail Cap(c_a), veh/h	418	928	493	173	643	628	173	1077	545	774	1663	934
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.1	32.3	26.4	46.8	38.0	28.7	47.0	29.6	22.0	38.3	21.8	12.6
Incr Delay (d2), s/veh	15.9	1.1	0.4	2.1	2.3	18.8	22.6	2.4	0.2	14.3	3.2	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	5.9	3.0	0.8	4.9	15.9	2.2	6.8	0.5	9.4	12.2	7.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	59.0	33.4	26.8	48.9	40.3	47.5	69.6	32.1	22.2	52.6	25.0	15.0
LnGrp LOS	E	C	C	D	D	D	E	C	C	D	C	B
Approach Vol, veh/h		1075			1056			813			2446	
Approach Delay, s/veh		40.9			44.8			38.1			30.5	
Approach LOS		D			D			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	34.8	8.6	30.6	9.5	51.3	16.6	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	22.4	29.4	5.0	25.2	5.0	46.8	12.1	18.1
Max Q Clear Time (g_c+I1), s	21.1	17.4	3.7	15.6	6.0	30.9	12.2	20.1
Green Ext Time (p_c), s	0.4	3.5	0.0	3.0	0.0	10.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	36.5
HCM 6th LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	50	0		120	155	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		139		58		
Link Speed (mph)	30		30			30
Link Distance (ft)	1246		1018			975
Travel Time (s)	28.3		23.1			22.2

Intersection Summary	
Area Type:	Other



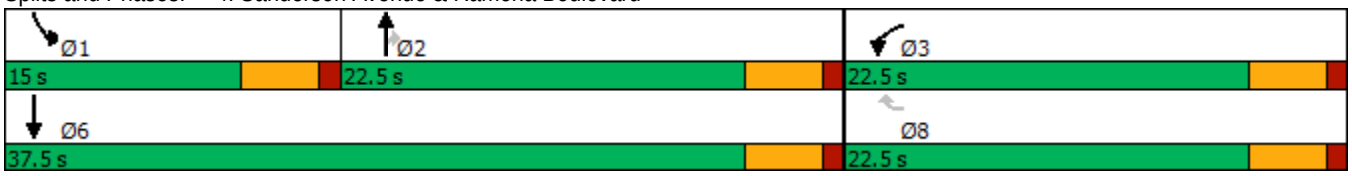
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	27	132	629	55	249	1296
Future Volume (vph)	27	132	629	55	249	1296
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	28	139	662	58	262	1364
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	139	662	58	262	1364

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	27	132	629	55	249	1296
Future Volume (vph)	27	132	629	55	249	1296
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5
Total Split (s)	22.5	22.5	22.5	22.5	15.0	37.5
Total Split (%)	37.5%	37.5%	37.5%	37.5%	25.0%	62.5%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	6.7	6.5	19.8	19.8	10.2	35.5
Actuated g/C Ratio	0.14	0.14	0.41	0.41	0.21	0.74
v/c Ratio	0.11	0.41	0.45	0.08	0.69	0.52
Control Delay	19.2	8.7	12.7	4.3	30.5	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.2	8.7	12.7	4.3	30.5	4.8
LOS	B	A	B	A	C	A
Approach Delay	10.4		12.0			8.9
Approach LOS	B		B			A

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 47.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 9.9	Intersection LOS: A
Intersection Capacity Utilization 47.5%	ICU Level of Service A
Analysis Period (min) 15	

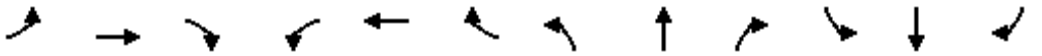
Splits and Phases: 4: Sanderson Avenue & Ramona Boulevard



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	27	132	629	55	249	1296
Future Volume (veh/h)	27	132	629	55	249	1296
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	139	662	58	262	1364
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	213	189	1482	661	322	2458
Arrive On Green	0.12	0.12	0.42	0.42	0.18	0.69
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	28	139	662	58	262	1364
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	0.7	4.0	6.4	1.1	6.7	9.2
Cycle Q Clear(g_c), s	0.7	4.0	6.4	1.1	6.7	9.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	213	189	1482	661	322	2458
V/C Ratio(X)	0.13	0.73	0.45	0.09	0.81	0.55
Avail Cap(c_a), veh/h	672	598	1482	661	392	2458
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.8	20.3	10.0	8.4	18.8	3.7
Incr Delay (d2), s/veh	0.3	5.4	1.0	0.3	10.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.6	2.2	0.3	3.4	1.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.1	25.7	10.9	8.7	29.3	4.6
LnGrp LOS	B	C	B	A	C	A
Approach Vol, veh/h	167		720			1626
Approach Delay, s/veh	24.6		10.8			8.6
Approach LOS	C		B			A

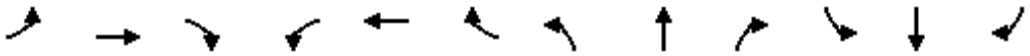
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	13.1	24.4			37.5	10.2
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	10.5	18.0			33.0	18.0
Max Q Clear Time (g_c+I1), s	8.7	8.4			11.2	6.0
Green Ext Time (p_c), s	0.1	3.3			11.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	10.3
HCM 6th LOS	B



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		205	315		315	300		205	290		200
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	1.00	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	1863	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	1863	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			143			174
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1580			1322			1146			1419	
Travel Time (s)		35.9			30.0			26.0			32.3	

Intersection Summary	
Area Type:	Other



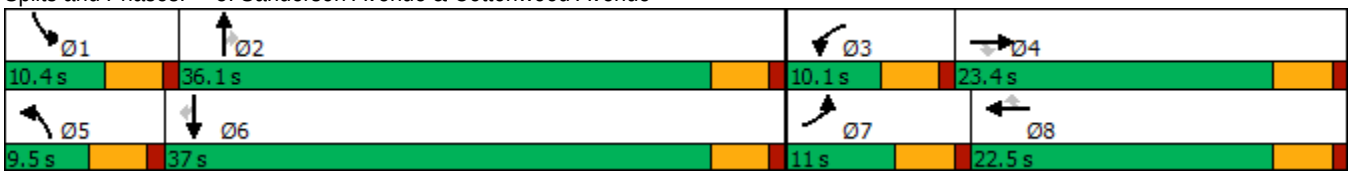
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	118	244	90	85	141	61	53	531	91	91	986	171
Future Volume (vph)	118	244	90	85	141	61	53	531	91	91	986	171
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	120	249	92	87	144	62	54	542	93	93	1006	174
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	249	92	87	144	62	54	542	93	93	1006	174

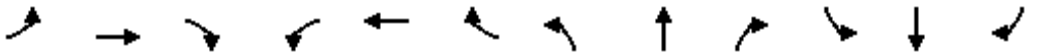
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	244	90	85	141	61	53	531	91	91	986	171
Future Volume (vph)	118	244	90	85	141	61	53	531	91	91	986	171
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	11.0	23.4	23.4	10.1	22.5	22.5	9.5	36.1	36.1	10.4	37.0	37.0
Total Split (%)	13.8%	29.3%	29.3%	12.6%	28.1%	28.1%	11.9%	45.1%	45.1%	13.0%	46.3%	46.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	6.5	11.5	11.5	5.7	10.9	10.9	5.2	32.8	32.8	6.0	35.3	35.3
Actuated g/C Ratio	0.09	0.17	0.17	0.08	0.16	0.16	0.08	0.48	0.48	0.09	0.51	0.51
v/c Ratio	0.37	0.42	0.24	0.30	0.49	0.17	0.21	0.32	0.11	0.31	0.55	0.19
Control Delay	36.0	29.0	3.3	36.0	34.2	1.0	35.4	14.2	1.3	35.7	15.5	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.0	29.0	3.3	36.0	34.2	1.0	35.4	14.2	1.3	35.7	15.5	3.1
LOS	D	C	A	D	C	A	D	B	A	D	B	A
Approach Delay		25.7			27.7			14.1			15.3	
Approach LOS		C			C			B			B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 68.9	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 18.1	Intersection LOS: B
Intersection Capacity Utilization 58.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Sanderson Avenue & Cottonwood Avenue

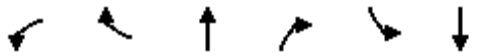




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	244	90	85	141	61	53	531	91	91	986	171
Future Volume (veh/h)	118	244	90	85	141	61	53	531	91	91	986	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	249	92	87	144	62	54	542	93	93	1006	174
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	234	432	193	209	214	182	165	1711	763	215	1762	786
Arrive On Green	0.07	0.12	0.12	0.06	0.11	0.11	0.05	0.48	0.48	0.06	0.50	0.50
Sat Flow, veh/h	3456	3554	1585	3456	1870	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	120	249	92	87	144	62	54	542	93	93	1006	174
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1870	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	2.2	4.3	3.6	1.6	4.8	2.4	1.0	6.1	2.1	1.7	13.1	4.1
Cycle Q Clear(g_c), s	2.2	4.3	3.6	1.6	4.8	2.4	1.0	6.1	2.1	1.7	13.1	4.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	234	432	193	209	214	182	165	1711	763	215	1762	786
V/C Ratio(X)	0.51	0.58	0.48	0.42	0.67	0.34	0.33	0.32	0.12	0.43	0.57	0.22
Avail Cap(c_a), veh/h	342	1023	456	295	513	435	263	1711	763	311	1762	786
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.6	27.2	26.9	29.7	27.9	26.8	30.2	10.4	9.4	29.7	11.6	9.4
Incr Delay (d2), s/veh	1.7	1.2	1.8	1.3	3.6	1.1	1.1	0.5	0.3	1.4	1.3	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.8	1.4	0.7	2.3	0.9	0.4	2.2	0.7	0.7	4.7	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	28.4	28.7	31.0	31.5	27.9	31.4	10.9	9.7	31.0	13.0	10.0
LnGrp LOS	C	C	C	C	C	C	C	B	A	C	B	B
Approach Vol, veh/h		461			293			689			1273	
Approach Delay, s/veh		29.2			30.6			12.3			13.9	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.6	36.1	8.5	12.5	7.6	37.1	8.9	12.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.9	31.6	5.6	18.9	5.0	32.5	6.5	18.0
Max Q Clear Time (g_c+I1), s	3.7	8.1	3.6	6.3	3.0	15.1	4.2	6.8
Green Ext Time (p_c), s	0.0	4.1	0.0	1.5	0.0	7.5	0.1	0.7

Intersection Summary	
HCM 6th Ctrl Delay	17.9
HCM 6th LOS	B



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.865			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1611	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1611	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	600		1160			530
Travel Time (s)	13.6		26.4			12.0

Intersection Summary	
Area Type:	Other

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	36	0	0	61	0	0
Future Volume (vph)	36	0	0	61	0	0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	39	0	0	66	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	39	0	66	0	0	0

Intersection Summary

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	0	0	61	0	0
Future Vol, veh/h	36	0	0	61	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	0	0	66	0	0

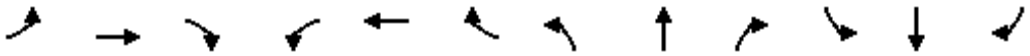
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	34	33	0	0	66	0
Stage 1	33	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	979	1041	-	-	1536	-
Stage 1	989	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	979	1041	-	-	1536	-
Mov Cap-2 Maneuver	979	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	979	1536	-
HCM Lane V/C Ratio	-	-	0.04	-	-
HCM Control Delay (s)	-	-	8.8	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

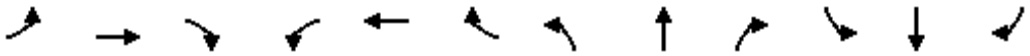
Appendix E

Existing Plus Project Conditions
With Improvements
LOS Analysis Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	200		0	100		0	0		0
Storage Lanes	0		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Ped Bike Factor												
Frt			0.850		0.992				0.850		0.973	
Flt Protected		0.999		0.950				0.950			0.962	
Satd. Flow (prot)	0	1861	1583	1770	1848	0	0	1770	1583	0	1744	0
Flt Permitted		0.994		0.537				0.711			0.759	
Satd. Flow (perm)	0	1852	1583	1000	1848	0	0	1324	1583	0	1376	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			66		7				100		27	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		420			1580			423			461	
Travel Time (s)		9.5			35.9			9.6			10.5	

Intersection Summary	
Area Type:	Other



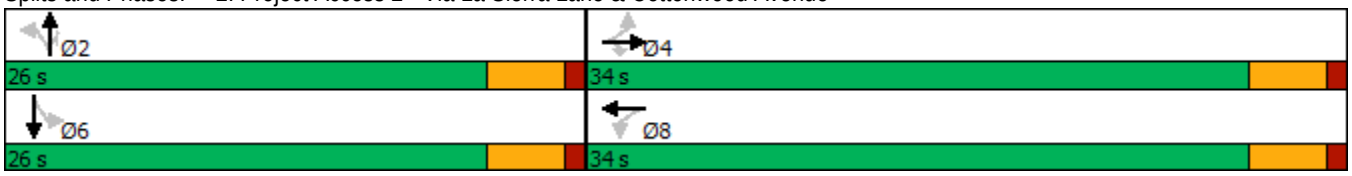
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	4	287	51	123	249	14	11	0	77	43	0	11
Future Volume (vph)	4	287	51	123	249	14	11	0	77	43	0	11
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	373	66	160	323	18	14	0	100	56	0	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	378	66	160	341	0	0	14	100	0	70	0

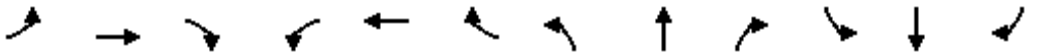
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	4	287	51	123	249	11	0	77	43	0
Future Volume (vph)	4	287	51	123	249	11	0	77	43	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4			8		2			6
Permitted Phases	4		4	8		2		2	6	
Detector Phase	4	4	4	8	8	2	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	34.0	34.0	34.0	34.0	34.0	26.0	26.0	26.0	26.0	26.0
Total Split (%)	56.7%	56.7%	56.7%	56.7%	56.7%	43.3%	43.3%	43.3%	43.3%	43.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)		4.5	4.5	4.5	4.5		4.5	4.5		4.5
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)		11.3	11.3	11.3	11.3		6.7	6.7		6.7
Actuated g/C Ratio		0.42	0.42	0.42	0.42		0.25	0.25		0.25
v/c Ratio		0.49	0.10	0.39	0.44		0.04	0.22		0.20
Control Delay		8.2	2.1	8.6	7.5		9.9	4.5		8.5
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay		8.2	2.1	8.6	7.5		9.9	4.5		8.5
LOS		A	A	A	A		A	A		A
Approach Delay		7.3			7.9		5.2			8.5
Approach LOS		A			A		A			A

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 27.2	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.49	
Intersection Signal Delay: 7.4	Intersection LOS: A
Intersection Capacity Utilization 50.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Project Access 2 - Via La Sierra Lane & Cottonwood Avenue

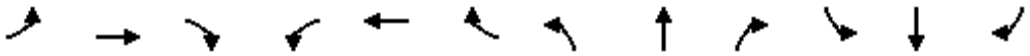




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	287	51	123	249	14	11	0	77	43	0	11
Future Volume (veh/h)	4	287	51	123	249	14	11	0	77	43	0	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	373	66	160	323	18	14	0	100	56	0	14
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	143	857	731	585	809	45	561	0	305	436	27	54
Arrive On Green	0.46	0.46	0.46	0.46	0.46	0.46	0.19	0.00	0.19	0.19	0.00	0.19
Sat Flow, veh/h	6	1860	1585	950	1755	98	1474	0	1585	970	142	278
Grp Volume(v), veh/h	378	0	66	160	0	341	14	0	100	70	0	0
Grp Sat Flow(s),veh/h/ln	1866	0	1585	950	0	1853	1474	0	1585	1389	0	0
Q Serve(g_s), s	0.0	0.0	0.6	3.6	0.0	3.2	0.0	0.0	1.4	0.5	0.0	0.0
Cycle Q Clear(g_c), s	3.5	0.0	0.6	7.1	0.0	3.2	0.2	0.0	1.4	1.0	0.0	0.0
Prop In Lane	0.01		1.00	1.00		0.05	1.00		1.00	0.80		0.20
Lane Grp Cap(c), veh/h	1000	0	731	585	0	854	561	0	305	517	0	0
V/C Ratio(X)	0.38	0.00	0.09	0.27	0.00	0.40	0.02	0.00	0.33	0.14	0.00	0.00
Avail Cap(c_a), veh/h	2250	0	1800	1227	0	2105	1450	0	1312	1371	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.7	0.0	3.9	7.1	0.0	4.6	8.5	0.0	9.0	8.8	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.1	0.2	0.0	0.3	0.0	0.0	0.6	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.1	0.4	0.0	0.5	0.0	0.0	0.4	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.0	0.0	4.0	7.4	0.0	4.9	8.6	0.0	9.7	8.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		444			501			114			70	
Approach Delay, s/veh		4.8			5.7			9.5			8.9	
Approach LOS		A			A			A			A	

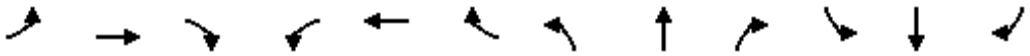
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		9.5		16.5		9.5		16.5				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		21.5		29.5		21.5		29.5				
Max Q Clear Time (g_c+I1), s		3.4		5.5		3.0		9.1				
Green Ext Time (p_c), s		0.3		2.6		0.3		2.9				

Intersection Summary												
HCM 6th Ctrl Delay			5.9									
HCM 6th LOS			A									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	200		0	100		0	0		0
Storage Lanes	0		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Ped Bike Factor												
Frt			0.850		0.980				0.850		0.972	
Flt Protected		0.999		0.950							0.962	
Satd. Flow (prot)	0	1861	1583	1770	1825	0	0	1863	1583	0	1742	0
Flt Permitted		0.983		0.484							0.770	
Satd. Flow (perm)	0	1831	1583	902	1825	0	0	1863	1583	0	1394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27		18				362		27	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		420			1580			423			460	
Travel Time (s)		9.5			35.9			9.6			10.5	

Intersection Summary	
Area Type:	Other



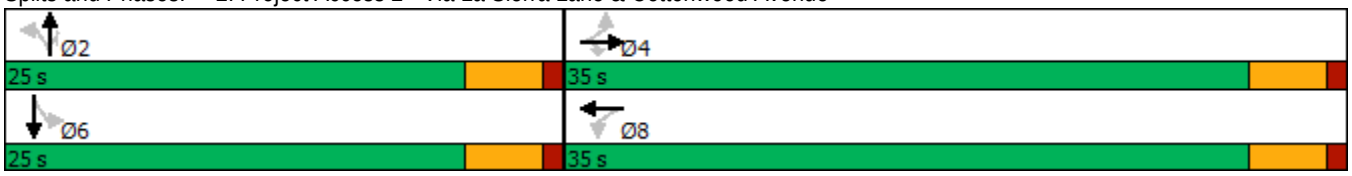
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	12	390	1	1	316	48	0	0	1	28	0	7
Future Volume (vph)	12	390	1	1	316	48	0	0	1	28	0	7
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	433	1	1	351	53	0	0	1	31	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	446	1	1	404	0	0	0	1	0	39	0

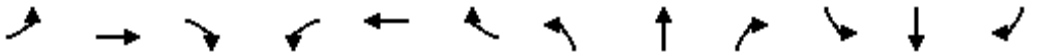
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	12	390	1	1	316	1	28	0
Future Volume (vph)	12	390	1	1	316	1	28	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			6
Permitted Phases	4		4	8		2	6	
Detector Phase	4	4	4	8	8	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	35.0	35.0	35.0	35.0	35.0	25.0	25.0	25.0
Total Split (%)	58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%	41.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)		4.5	4.5	4.5	4.5	4.5		4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	None	Min	Min	Min
Act Effct Green (s)		11.8	11.8	11.8	11.8	6.1		6.1
Actuated g/C Ratio		0.44	0.44	0.44	0.44	0.23		0.23
v/c Ratio		0.56	0.00	0.00	0.50	0.00		0.12
Control Delay		8.6	0.0	4.0	7.5	0.0		7.1
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		8.6	0.0	4.0	7.5	0.0		7.1
LOS		A	A	A	A	A		A
Approach Delay		8.5			7.5			7.1
Approach LOS		A			A			A

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 27.1	
Natural Cycle: 45	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay: 8.0	Intersection LOS: A
Intersection Capacity Utilization 41.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Project Access 2 - Via La Sierra Lane & Cottonwood Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	390	1	1	316	48	0	0	1	28	0	7
Future Volume (veh/h)	12	390	1	1	316	48	0	0	1	28	0	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	433	1	1	351	53	0	0	1	31	0	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	167	731	632	510	633	96	0	402	340	500	31	65
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.00	0.00	0.21	0.21	0.00	0.21
Sat Flow, veh/h	19	1834	1585	954	1588	240	0	1870	1585	1034	145	304
Grp Volume(v), veh/h	446	0	1	1	0	404	0	0	1	39	0	0
Grp Sat Flow(s),veh/h/ln	1853	0	1585	954	0	1827	0	1870	1585	1484	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	4.4	0.0	0.0	4.4	0.0	4.0	0.0	0.0	0.0	0.4	0.0	0.0
Prop In Lane	0.03		1.00	1.00		0.13	0.00		1.00	0.79		0.21
Lane Grp Cap(c), veh/h	898	0	632	510	0	728	0	402	340	596	0	0
V/C Ratio(X)	0.50	0.00	0.00	0.00	0.00	0.55	0.00	0.00	0.00	0.07	0.00	0.00
Avail Cap(c_a), veh/h	2559	0	2077	1380	0	2394	0	1647	1396	1561	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.5	0.0	4.2	7.3	0.0	5.4	0.0	0.0	7.2	7.3	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.0	0.0	4.2	7.3	0.0	6.1	0.0	0.0	7.2	7.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		447			405			1			39	
Approach Delay, s/veh		6.0			6.1			7.2			7.4	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		9.5		13.8		9.5		13.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		20.5		30.5		20.5		30.5				
Max Q Clear Time (g_c+I1), s		2.0		6.4		2.4		6.4				
Green Ext Time (p_c), s		0.0		2.9		0.1		2.6				

Intersection Summary												
HCM 6th Ctrl Delay			6.1									
HCM 6th LOS			A									

Appendix F

Project Opening Year (2022)
Without Project Conditions
LOS Analysis Worksheets

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		100	195		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3539	1583	1770	1863	1770	1583
Link Speed (mph)	30			30	30	
Link Distance (ft)	664			1050	754	
Travel Time (s)	15.1			23.9	17.1	

Intersection Summary	
Area Type:	Other

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Volume (vph)	285	42	52	194	69	76
Future Volume (vph)	285	42	52	194	69	76
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	331	49	60	226	80	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	331	49	60	226	80	88

Intersection Summary

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	285	42	52	194	69	76
Future Vol, veh/h	285	42	52	194	69	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	195	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	331	49	60	226	80	88

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	380	0	677	166
Stage 1	-	-	-	-	331	-
Stage 2	-	-	-	-	346	-
Critical Hdwy	-	-	4.13	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1177	-	402	850
Stage 1	-	-	-	-	701	-
Stage 2	-	-	-	-	715	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1177	-	381	850
Mov Cap-2 Maneuver	-	-	-	-	381	-
Stage 1	-	-	-	-	701	-
Stage 2	-	-	-	-	679	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	13.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	381	850	-	-	1177	-
HCM Lane V/C Ratio	0.211	0.104	-	-	0.051	-
HCM Control Delay (s)	17	9.7	-	-	8.2	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.8	0.3	-	-	0.2	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	200		100	0
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Link Speed (mph)	30			30	30	
Link Distance (ft)	1050			1580	423	
Travel Time (s)	23.9			35.9	9.6	

Intersection Summary	
Area Type:	Other

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Volume (vph)	282	52	125	283	11	79
Future Volume (vph)	282	52	125	283	11	79
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	366	68	162	368	14	103
Shared Lane Traffic (%)						
Lane Group Flow (vph)	366	68	162	368	14	103

Intersection Summary

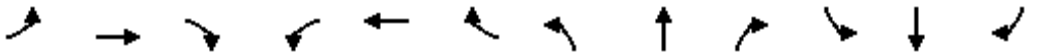
Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	282	52	125	283	11	79
Future Vol, veh/h	282	52	125	283	11	79
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	200	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	366	68	162	368	14	103

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	434	0	1058	366
Stage 1	-	-	-	-	366	-
Stage 2	-	-	-	-	692	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1126	-	249	679
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	497	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1126	-	213	679
Mov Cap-2 Maneuver	-	-	-	-	213	-
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	425	-

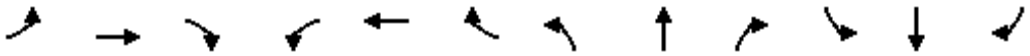
Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	213	679	-	-	1126	-
HCM Lane V/C Ratio	0.067	0.151	-	-	0.144	-
HCM Control Delay (s)	23.1	11.2	-	-	8.7	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.5	-	-	0.5	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	400		180	375		140	400		150	400		250
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2322			1174			975			1795	
Travel Time (s)		52.8			26.7			22.2			40.8	

Intersection Summary	
Area Type:	Other



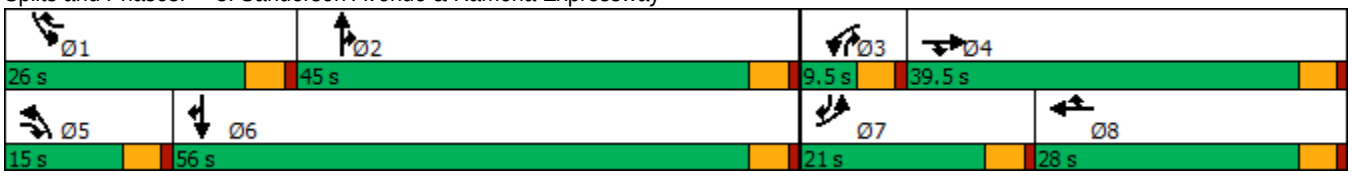
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	454	344	77	74	500	723	132	1274	100	574	673	329
Future Volume (vph)	454	344	77	74	500	723	132	1274	100	574	673	329
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	473	358	80	77	521	753	138	1327	104	598	701	343
Shared Lane Traffic (%)												
Lane Group Flow (vph)	473	358	80	77	521	753	138	1327	104	598	701	343

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	454	344	77	74	500	723	132	1274	100	574	673	329
Future Volume (vph)	454	344	77	74	500	723	132	1274	100	574	673	329
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Permitted Phases												
Detector Phase	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	21.0	39.5		9.5	28.0		15.0	45.0		26.0	56.0	
Total Split (%)	17.5%	32.9%		7.9%	23.3%		12.5%	37.5%		21.7%	46.7%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	16.5	35.0	49.0	5.0	23.5	49.5	9.5	40.5	50.0	21.5	52.5	73.5
Actuated g/C Ratio	0.14	0.29	0.41	0.04	0.20	0.41	0.08	0.34	0.42	0.18	0.44	0.61
v/c Ratio	1.00	0.35	0.12	0.54	0.75	1.15	0.51	1.11	0.16	0.97	0.45	0.35
Control Delay	93.8	34.7	22.5	70.5	53.3	119.8	59.5	99.9	22.7	79.3	25.1	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.8	34.7	22.5	70.5	53.3	119.8	59.5	99.9	22.7	79.3	25.1	13.0
LOS	F	C	C	E	D	F	E	F	C	E	C	B
Approach Delay		64.3			91.3			91.2			42.3	
Approach LOS		E			F			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.15	
Intersection Signal Delay: 72.1	Intersection LOS: E
Intersection Capacity Utilization 104.2%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: Sanderson Avenue & Ramona Expressway



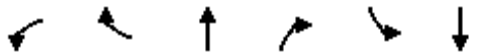
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	454	344	77	74	500	723	132	1274	100	574	673	329
Future Volume (veh/h)	454	344	77	74	500	723	132	1274	100	574	673	329
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	473	358	80	77	521	753	138	1327	104	598	701	343
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	475	1048	557	133	696	594	195	1199	596	619	1636	947
Arrive On Green	0.14	0.29	0.29	0.04	0.20	0.20	0.06	0.34	0.34	0.18	0.46	0.46
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	473	358	80	77	521	753	138	1327	104	598	701	343
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	16.4	9.5	4.1	2.6	16.6	23.5	4.7	40.5	5.3	20.6	15.9	13.3
Cycle Q Clear(g_c), s	16.4	9.5	4.1	2.6	16.6	23.5	4.7	40.5	5.3	20.6	15.9	13.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	475	1048	557	133	696	594	195	1199	596	619	1636	947
V/C Ratio(X)	1.00	0.34	0.14	0.58	0.75	1.27	0.71	1.11	0.17	0.97	0.43	0.36
Avail Cap(c_a), veh/h	475	1048	557	144	696	594	302	1199	596	619	1636	947
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	33.2	26.6	56.7	45.5	37.5	55.6	39.8	25.0	48.9	21.8	12.4
Incr Delay (d2), s/veh	40.0	0.2	0.1	4.9	4.5	133.1	4.7	60.3	0.6	27.7	0.8	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.7	4.1	1.6	1.2	7.7	39.0	2.2	27.4	2.1	11.2	6.8	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	91.7	33.4	26.7	61.7	50.0	170.6	60.3	100.0	25.6	76.6	22.6	13.5
LnGrp LOS	F	C	C	E	D	F	E	F	C	E	C	B
Approach Vol, veh/h		911			1351			1569			1642	
Approach Delay, s/veh		63.1			117.8			91.6			40.4	
Approach LOS		E			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	45.0	9.1	39.9	11.3	59.7	21.0	28.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	21.5	40.5	5.0	35.0	10.5	51.5	16.5	23.5
Max Q Clear Time (g_c+I1), s	22.6	42.5	4.6	11.5	6.7	17.9	18.4	25.5
Green Ext Time (p_c), s	0.0	0.0	0.0	2.6	0.1	7.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	78.0
HCM 6th LOS	E

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	50	0		120	155	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		290		55		
Link Speed (mph)	30		30			30
Link Distance (ft)	1246		1018			975
Travel Time (s)	28.3		23.1			22.2

Intersection Summary	
Area Type:	Other



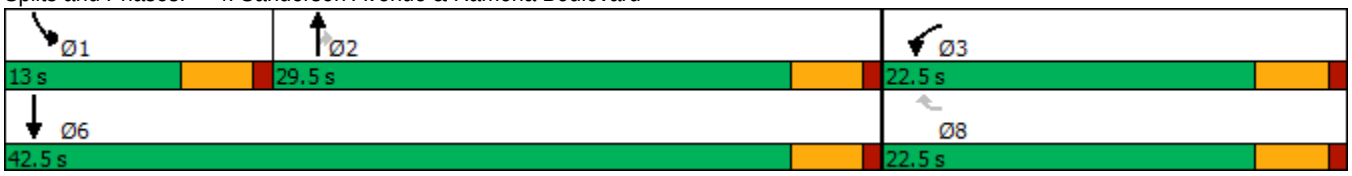
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	106	387	1128	62	161	684
Future Volume (vph)	106	387	1128	62	161	684
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	109	399	1163	64	166	705
Shared Lane Traffic (%)						
Lane Group Flow (vph)	109	399	1163	64	166	705

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	106	387	1128	62	161	684
Future Volume (vph)	106	387	1128	62	161	684
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5
Total Split (s)	22.5	22.5	29.5	29.5	13.0	42.5
Total Split (%)	34.6%	34.6%	45.4%	45.4%	20.0%	65.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	10.7	10.7	25.4	25.4	8.3	38.2
Actuated g/C Ratio	0.18	0.18	0.44	0.44	0.14	0.66
v/c Ratio	0.33	0.76	0.75	0.09	0.66	0.30
Control Delay	22.6	16.6	19.0	5.2	40.1	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	16.6	19.0	5.2	40.1	5.3
LOS	C	B	B	A	D	A
Approach Delay	17.9		18.2			11.9
Approach LOS	B		B			B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 57.9	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 16.1	Intersection LOS: B
Intersection Capacity Utilization 62.6%	ICU Level of Service B
Analysis Period (min) 15	

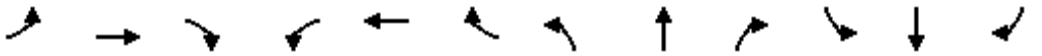
Splits and Phases: 4: Sanderson Avenue & Ramona Boulevard



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	106	387	1128	62	161	684
Future Volume (veh/h)	106	387	1128	62	161	684
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	109	399	1163	64	166	705
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	490	436	1424	635	207	2082
Arrive On Green	0.28	0.28	0.40	0.40	0.12	0.59
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	109	399	1163	64	166	705
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	3.1	15.8	18.9	1.6	5.9	6.6
Cycle Q Clear(g_c), s	3.1	15.8	18.9	1.6	5.9	6.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	490	436	1424	635	207	2082
V/C Ratio(X)	0.22	0.91	0.82	0.10	0.80	0.34
Avail Cap(c_a), veh/h	494	440	1424	635	233	2082
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	22.8	17.3	12.1	27.9	6.9
Incr Delay (d2), s/veh	0.2	23.4	5.3	0.3	16.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	8.3	7.9	0.6	3.3	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.4	46.2	22.6	12.5	44.4	7.4
LnGrp LOS	B	D	C	B	D	A
Approach Vol, veh/h	508		1227			871
Approach Delay, s/veh	40.2		22.1			14.4
Approach LOS	D		C			B

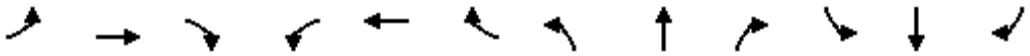
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.0	30.5			42.5	22.4
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	8.5	25.0			38.0	18.0
Max Q Clear Time (g_c+I1), s	7.9	20.9			8.6	17.8
Green Ext Time (p_c), s	0.0	2.8			5.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		205	315		315	300		205	290		200
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	1.00	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	1863	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	1863	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176			176			176			176
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1580			1322			1146			1419	
Travel Time (s)		35.9			30.0			26.0			32.3	

Intersection Summary	
Area Type:	Other



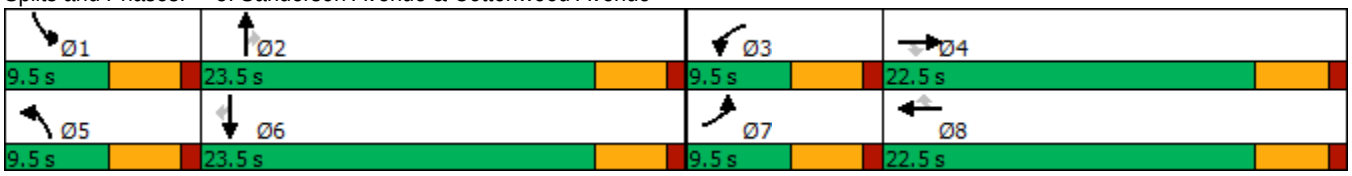
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	165	240	42	153	324	118	66	871	136	26	678	82
Future Volume (vph)	165	240	42	153	324	118	66	871	136	26	678	82
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	176	255	45	163	345	126	70	927	145	28	721	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	255	45	163	345	126	70	927	145	28	721	87

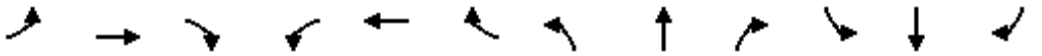
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	240	42	153	324	118	66	871	136	26	678	82
Future Volume (vph)	165	240	42	153	324	118	66	871	136	26	678	82
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	23.5	23.5	9.5	23.5	23.5
Total Split (%)	14.6%	34.6%	34.6%	14.6%	34.6%	34.6%	14.6%	36.2%	36.2%	14.6%	36.2%	36.2%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	5.1	17.3	17.3	5.1	14.9	14.9	5.1	21.1	21.1	5.1	19.4	19.4
Actuated g/C Ratio	0.09	0.30	0.30	0.09	0.26	0.26	0.09	0.36	0.36	0.09	0.33	0.33
v/c Ratio	0.59	0.24	0.08	0.54	0.72	0.24	0.23	0.72	0.21	0.09	0.61	0.14
Control Delay	37.6	18.1	0.2	35.8	30.3	2.7	29.7	22.7	3.2	28.5	20.7	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.6	18.1	0.2	35.8	30.3	2.7	29.7	22.7	3.2	28.5	20.7	0.4
LOS	D	B	A	D	C	A	C	C	A	C	C	A
Approach Delay		23.6			26.2			20.7			18.9	
Approach LOS		C			C			C			B	

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 58.3	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 21.8	Intersection LOS: C
Intersection Capacity Utilization 61.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 5: Sanderson Avenue & Cottonwood Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	240	42	153	324	118	66	871	136	26	678	82
Future Volume (veh/h)	165	240	42	153	324	118	66	871	136	26	678	82
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	176	255	45	163	345	126	70	927	145	28	721	87
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	278	821	366	274	430	364	201	1248	557	108	1153	514
Arrive On Green	0.08	0.23	0.23	0.08	0.23	0.23	0.06	0.35	0.35	0.03	0.32	0.32
Sat Flow, veh/h	3456	3554	1585	3456	1870	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	176	255	45	163	345	126	70	927	145	28	721	87
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1870	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	2.9	3.5	1.3	2.7	10.2	3.9	1.1	13.4	3.8	0.5	10.1	2.3
Cycle Q Clear(g_c), s	2.9	3.5	1.3	2.7	10.2	3.9	1.1	13.4	3.8	0.5	10.1	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	278	821	366	274	430	364	201	1248	557	108	1153	514
V/C Ratio(X)	0.63	0.31	0.12	0.59	0.80	0.35	0.35	0.74	0.26	0.26	0.63	0.17
Avail Cap(c_a), veh/h	295	1092	487	295	575	487	295	1248	557	295	1153	514
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.1	18.7	17.8	26.1	21.3	18.9	26.5	16.7	13.6	27.7	16.8	14.1
Incr Delay (d2), s/veh	4.0	0.2	0.1	2.8	5.9	0.6	1.0	4.0	1.1	1.3	2.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	1.3	0.5	1.1	4.8	1.4	0.5	5.5	1.4	0.2	4.1	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.1	18.9	18.0	28.9	27.2	19.4	27.6	20.7	14.7	29.0	19.3	14.9
LnGrp LOS	C	B	B	C	C	B	C	C	B	C	B	B
Approach Vol, veh/h		476			634			1142			836	
Approach Delay, s/veh		22.9			26.1			20.4			19.2	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	25.1	9.1	18.0	7.9	23.5	9.2	18.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	19.0	5.0	18.0	5.0	19.0	5.0	18.0
Max Q Clear Time (g_c+I1), s	2.5	15.4	4.7	5.5	3.1	12.1	4.9	12.2
Green Ext Time (p_c), s	0.0	2.2	0.0	1.4	0.0	2.9	0.0	1.3

Intersection Summary	
HCM 6th Ctrl Delay	21.6
HCM 6th LOS	C

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		100	195		0	0
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3539	1583	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3539	1583	1770	1863	1770	1583
Link Speed (mph)	30			30	30	
Link Distance (ft)	664			1050	754	
Travel Time (s)	15.1			23.9	17.1	

Intersection Summary	
Area Type:	Other

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Volume (vph)	362	23	57	246	17	51
Future Volume (vph)	362	23	57	246	17	51
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	373	24	59	254	18	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	373	24	59	254	18	53

Intersection Summary

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	362	23	57	246	17	51
Future Vol, veh/h	362	23	57	246	17	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	195	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	373	24	59	254	18	53

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	397	0	745	187
Stage 1	-	-	-	-	373	-
Stage 2	-	-	-	-	372	-
Critical Hdwy	-	-	4.13	-	6.63	6.93
Critical Hdwy Stg 1	-	-	-	-	5.83	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.219	-	3.519	3.319
Pot Cap-1 Maneuver	-	-	1160	-	365	824
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	696	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1160	-	346	824
Mov Cap-2 Maneuver	-	-	-	-	346	-
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	661	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	346	824	-	-	1160	-
HCM Lane V/C Ratio	0.051	0.064	-	-	0.051	-
HCM Control Delay (s)	16	9.7	-	-	8.3	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0.2	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	200		100	0
Storage Lanes		1	1		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt		0.850				0.850
Flt Protected			0.950			
Satd. Flow (prot)	1863	1583	1770	1863	1863	1583
Flt Permitted			0.950			
Satd. Flow (perm)	1863	1583	1770	1863	1863	1583
Link Speed (mph)	30			30	30	
Link Distance (ft)	1050			1580	423	
Travel Time (s)	23.9			35.9	9.6	

Intersection Summary	
Area Type:	Other

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Volume (vph)	423	1	1	320	0	1
Future Volume (vph)	423	1	1	320	0	1
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Adj. Flow (vph)	470	1	1	356	0	1
Shared Lane Traffic (%)						
Lane Group Flow (vph)	470	1	1	356	0	1

Intersection Summary

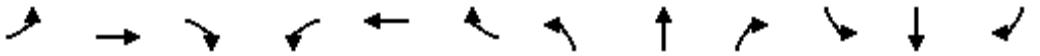
Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	423	1	1	320	0	1
Future Vol, veh/h	423	1	1	320	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	200	-	100	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	470	1	1	356	0	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	471	0	828	470
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	358	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1091	-	341	594
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	707	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1091	-	341	594
Mov Cap-2 Maneuver	-	-	-	-	341	-
Stage 1	-	-	-	-	629	-
Stage 2	-	-	-	-	706	-

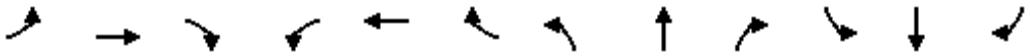
Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	594	-	-	1091	-
HCM Lane V/C Ratio	-	0.002	-	-	0.001	-
HCM Control Delay (s)	0	11.1	-	-	8.3	-
HCM Lane LOS	A	B	-	-	A	-
HCM 95th %tile Q(veh)	-	0	-	-	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	400		180	375		140	400		150	400		250
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2322			1174			975			1795	
Travel Time (s)		52.8			26.7			22.2			40.8	

Intersection Summary	
Area Type:	Other



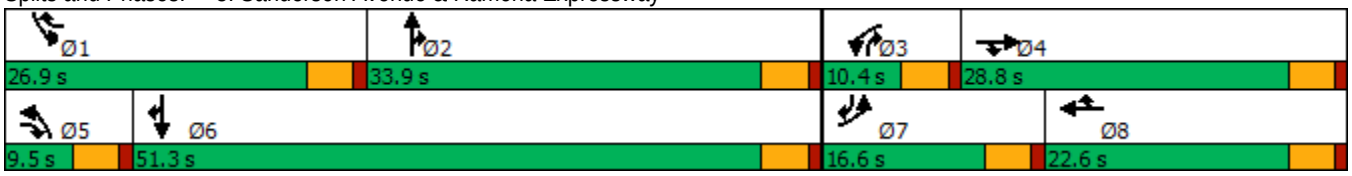
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	397	568	164	87	427	609	140	907	58	726	1628	587
Future Volume (vph)	397	568	164	87	427	609	140	907	58	726	1628	587
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	401	574	166	88	431	615	141	916	59	733	1644	593
Shared Lane Traffic (%)												
Lane Group Flow (vph)	401	574	166	88	431	615	141	916	59	733	1644	593

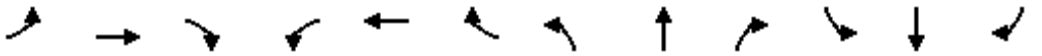
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	397	568	164	87	427	609	140	907	58	726	1628	587
Future Volume (vph)	397	568	164	87	427	609	140	907	58	726	1628	587
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Permitted Phases												
Detector Phase	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	16.6	28.8		10.4	22.6		9.5	33.9		26.9	51.3	
Total Split (%)	16.6%	28.8%		10.4%	22.6%		9.5%	33.9%		26.9%	51.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	12.1	26.4	35.9	5.9	18.1	45.0	5.0	29.4	39.8	22.4	46.8	63.4
Actuated g/C Ratio	0.12	0.26	0.36	0.06	0.18	0.45	0.05	0.29	0.40	0.22	0.47	0.63
v/c Ratio	0.97	0.62	0.29	0.44	0.67	0.86	0.82	0.88	0.09	0.95	0.99	0.59
Control Delay	81.4	36.5	25.8	52.5	44.1	39.2	82.8	44.9	19.5	62.3	47.7	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.4	36.5	25.8	52.5	44.1	39.2	82.8	44.9	19.5	62.3	47.7	13.8
LOS	F	D	C	D	D	D	F	D	B	E	D	B
Approach Delay		50.7			42.1			48.4			44.5	
Approach LOS		D			D			D			D	

Intersection Summary		
Cycle Length: 100		
Actuated Cycle Length: 100		
Natural Cycle: 100		
Control Type: Actuated-Uncoordinated		
Maximum v/c Ratio: 0.99		
Intersection Signal Delay: 45.9	Intersection LOS: D	
Intersection Capacity Utilization 87.3%	ICU Level of Service E	
Analysis Period (min) 15		

Splits and Phases: 3: Sanderson Avenue & Ramona Expressway





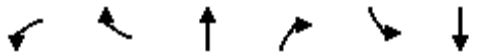
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	397	568	164	87	427	609	140	907	58	726	1628	587
Future Volume (veh/h)	397	568	164	87	427	609	140	907	58	726	1628	587
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	401	574	166	88	431	615	141	916	59	733	1644	593
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	418	911	486	158	643	642	173	1045	538	774	1663	934
Arrive On Green	0.12	0.26	0.26	0.05	0.18	0.18	0.05	0.29	0.29	0.22	0.47	0.47
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	401	574	166	88	431	615	141	916	59	733	1644	593
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	11.5	14.3	8.1	2.5	11.3	18.1	4.0	24.5	2.6	20.9	45.8	24.6
Cycle Q Clear(g_c), s	11.5	14.3	8.1	2.5	11.3	18.1	4.0	24.5	2.6	20.9	45.8	24.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	418	911	486	158	643	642	173	1045	538	774	1663	934
V/C Ratio(X)	0.96	0.63	0.34	0.56	0.67	0.96	0.82	0.88	0.11	0.95	0.99	0.64
Avail Cap(c_a), veh/h	418	911	486	204	643	642	173	1045	538	774	1663	934
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	33.0	26.9	46.7	38.2	28.9	47.0	33.6	22.6	38.2	26.3	13.5
Incr Delay (d2), s/veh	33.5	1.4	0.4	3.1	2.7	25.5	25.2	10.3	0.4	20.5	19.5	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	6.3	3.1	1.1	5.1	18.2	2.3	11.8	1.0	10.9	22.7	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.2	34.4	27.3	49.8	40.9	54.4	72.3	43.9	23.1	58.7	45.8	16.8
LnGrp LOS	E	C	C	D	D	D	E	D	C	E	D	B
Approach Vol, veh/h		1141			1134			1116			2970	
Approach Delay, s/veh		48.4			48.9			46.4			43.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.9	33.9	9.1	30.1	9.5	51.3	16.6	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	22.4	29.4	5.9	24.3	5.0	46.8	12.1	18.1
Max Q Clear Time (g_c+I1), s	22.9	26.5	4.5	16.3	6.0	47.8	13.5	20.1
Green Ext Time (p_c), s	0.0	1.7	0.0	2.8	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	45.7
HCM 6th LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	50	0		120	155	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		287		102		
Link Speed (mph)	30		30			30
Link Distance (ft)	1246		1018			975
Travel Time (s)	28.3		23.1			22.2

Intersection Summary	
Area Type:	Other



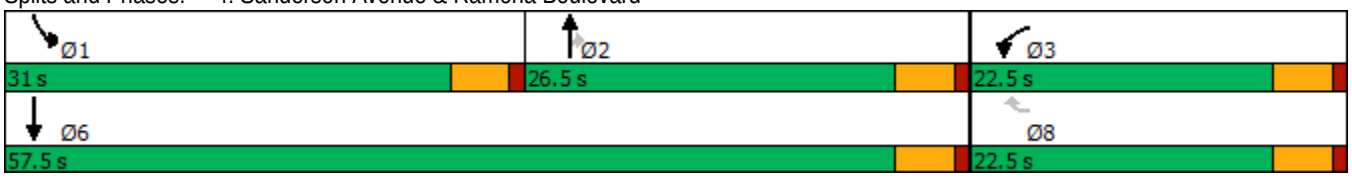
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	74	273	786	117	491	1476
Future Volume (vph)	74	273	786	117	491	1476
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	78	287	827	123	517	1554
Shared Lane Traffic (%)						
Lane Group Flow (vph)	78	287	827	123	517	1554

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	74	273	786	117	491	1476
Future Volume (vph)	74	273	786	117	491	1476
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5
Total Split (s)	22.5	22.5	26.5	26.5	31.0	57.5
Total Split (%)	28.1%	28.1%	33.1%	33.1%	38.8%	71.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	8.8	8.8	24.3	24.3	24.3	53.1
Actuated g/C Ratio	0.12	0.12	0.34	0.34	0.34	0.75
v/c Ratio	0.36	0.64	0.68	0.20	0.85	0.59
Control Delay	32.7	11.2	24.9	7.2	37.3	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	11.2	24.9	7.2	37.3	5.5
LOS	C	B	C	A	D	A
Approach Delay	15.8		22.6			13.4
Approach LOS	B		C			B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 70.9	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 16.3	Intersection LOS: B
Intersection Capacity Utilization 64.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 4: Sanderson Avenue & Ramona Boulevard



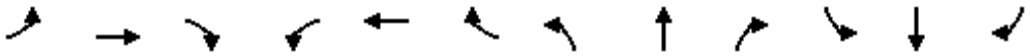
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	74	273	786	117	491	1476
Future Volume (veh/h)	74	273	786	117	491	1476
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	287	827	123	517	1554
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	366	325	1096	489	558	2414
Arrive On Green	0.21	0.21	0.31	0.31	0.31	0.68
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	78	287	827	123	517	1554
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	2.8	13.7	16.4	4.5	21.9	19.4
Cycle Q Clear(g_c), s	2.8	13.7	16.4	4.5	21.9	19.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	366	325	1096	489	558	2414
V/C Ratio(X)	0.21	0.88	0.75	0.25	0.93	0.64
Avail Cap(c_a), veh/h	411	366	1096	489	605	2414
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.8	30.1	24.3	20.2	25.9	7.1
Incr Delay (d2), s/veh	0.3	19.9	4.8	1.2	19.7	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	6.8	7.3	1.8	11.8	6.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.1	50.0	29.1	21.5	45.6	8.5
LnGrp LOS	C	D	C	C	D	A
Approach Vol, veh/h	365		950			2071
Approach Delay, s/veh	44.9		28.1			17.7
Approach LOS	D		C			B

Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	28.9	28.6			57.5	20.5
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	26.5	22.0			53.0	18.0
Max Q Clear Time (g_c+I1), s	23.9	18.4			21.4	15.7
Green Ext Time (p_c), s	0.5	2.0			15.9	0.3

Intersection Summary	
HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		205	315		315	300		205	290		200
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	1.00	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	1863	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	1863	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			172			143
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1580			1322			1146			1419	
Travel Time (s)		35.9			30.0			26.0			32.3	

Intersection Summary	
Area Type:	Other



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	194	286	103	192	136	70	50	667	169	106	1234	135
Future Volume (vph)	194	286	103	192	136	70	50	667	169	106	1234	135
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	198	292	105	196	139	71	51	681	172	108	1259	138
Shared Lane Traffic (%)												
Lane Group Flow (vph)	198	292	105	196	139	71	51	681	172	108	1259	138

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	286	103	192	136	70	50	667	169	106	1234	135
Future Volume (vph)	194	286	103	192	136	70	50	667	169	106	1234	135
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	11.0	22.5	22.5	11.0	22.5	22.5	9.5	36.1	36.1	10.4	37.0	37.0
Total Split (%)	13.8%	28.1%	28.1%	13.8%	28.1%	28.1%	11.9%	45.1%	45.1%	13.0%	46.3%	46.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	9.5	11.5	11.5	6.6	11.3	11.3	5.0	32.1	32.1	5.9	34.7	34.7
Actuated g/C Ratio	0.13	0.16	0.16	0.09	0.16	0.16	0.07	0.45	0.45	0.08	0.48	0.48
v/c Ratio	0.44	0.51	0.28	0.63	0.48	0.19	0.21	0.43	0.21	0.38	0.74	0.16
Control Delay	36.4	31.3	4.4	43.1	33.7	1.3	35.8	15.8	3.4	37.3	20.0	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.4	31.3	4.4	43.1	33.7	1.3	35.8	15.8	3.4	37.3	20.0	3.2
LOS	D	C	A	D	C	A	D	B	A	D	B	A
Approach Delay		28.2			32.5			14.6			19.7	
Approach LOS		C			C			B			B	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 71.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 21.4	Intersection LOS: C
Intersection Capacity Utilization 66.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: Sanderson Avenue & Cottonwood Avenue

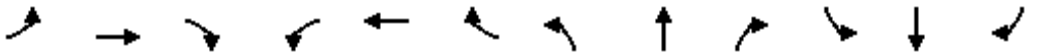
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	286	103	192	136	70	50	667	169	106	1234	135
Future Volume (veh/h)	194	286	103	192	136	70	50	667	169	106	1234	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	198	292	105	196	139	71	51	681	172	108	1259	138
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	289	464	207	287	243	206	157	1637	730	220	1702	759
Arrive On Green	0.08	0.13	0.13	0.08	0.13	0.13	0.05	0.46	0.46	0.06	0.48	0.48
Sat Flow, veh/h	3456	3554	1585	3456	1870	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	198	292	105	196	139	71	51	681	172	108	1259	138
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1870	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	3.8	5.3	4.2	3.8	4.8	2.8	1.0	8.8	4.5	2.1	19.6	3.4
Cycle Q Clear(g_c), s	3.8	5.3	4.2	3.8	4.8	2.8	1.0	8.8	4.5	2.1	19.6	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	289	464	207	287	243	206	157	1637	730	220	1702	759
V/C Ratio(X)	0.69	0.63	0.51	0.68	0.57	0.34	0.33	0.42	0.24	0.49	0.74	0.18
Avail Cap(c_a), veh/h	327	932	416	327	491	416	252	1637	730	297	1702	759
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.6	28.3	27.8	30.6	28.1	27.2	31.7	12.3	11.2	31.1	14.4	10.2
Incr Delay (d2), s/veh	5.0	1.4	1.9	4.9	2.1	1.0	1.2	0.8	0.8	1.7	2.9	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.3	1.6	1.7	2.2	1.1	0.4	3.3	1.6	0.9	7.6	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.6	29.7	29.7	35.5	30.2	28.2	32.9	13.1	12.0	32.8	17.4	10.7
LnGrp LOS	D	C	C	D	C	C	C	B	B	C	B	B
Approach Vol, veh/h		595			406			904			1505	
Approach Delay, s/veh		31.6			32.4			14.0			17.9	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	36.1	10.2	13.5	7.6	37.4	10.2	13.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.9	31.6	6.5	18.0	5.0	32.5	6.5	18.0
Max Q Clear Time (g_c+I1), s	4.1	10.8	5.8	7.3	3.0	21.6	5.8	6.8
Green Ext Time (p_c), s	0.0	5.4	0.0	1.6	0.0	6.7	0.0	0.7

Intersection Summary	
HCM 6th Ctrl Delay	21.0
HCM 6th LOS	C

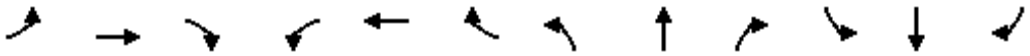
Appendix G

Project Opening Year (2022)
With Project Conditions
LOS Analysis Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		100	195		0	0		0	0		100
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Ped Bike Factor												
Frt		0.981			0.990				0.850			0.850
Flt Protected	0.950			0.950				0.953			0.957	
Satd. Flow (prot)	1770	1827	0	1770	1844	0	0	1775	1583	0	1783	1583
Flt Permitted	0.950			0.950				0.953			0.957	
Satd. Flow (perm)	1770	1827	0	1770	1844	0	0	1775	1583	0	1783	1583
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		664			630			754			1160	
Travel Time (s)		15.1			14.3			17.1			26.4	

Intersection Summary	
Area Type:	Other



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	2	287	42	57	199	14	69	2	78	43	5	5
Future Volume (vph)	2	287	42	57	199	14	69	2	78	43	5	5
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	2	334	49	66	231	16	80	2	91	50	6	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	383	0	66	247	0	0	82	91	0	56	6

Intersection Summary

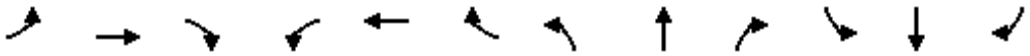
Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	287	42	57	199	14	69	2	78	43	5	5
Future Vol, veh/h	2	287	42	57	199	14	69	2	78	43	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	195	-	-	-	-	0	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	334	49	66	231	16	80	2	91	50	6	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	247	0	0	383	0	0	740	742	359	780	758	239
Stage 1	-	-	-	-	-	-	363	363	-	371	371	-
Stage 2	-	-	-	-	-	-	377	379	-	409	387	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1319	-	-	1175	-	-	333	344	685	313	336	800
Stage 1	-	-	-	-	-	-	656	625	-	649	620	-
Stage 2	-	-	-	-	-	-	644	615	-	619	610	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1319	-	-	1175	-	-	312	324	685	258	317	800
Mov Cap-2 Maneuver	-	-	-	-	-	-	312	324	-	258	317	-
Stage 1	-	-	-	-	-	-	655	624	-	648	585	-
Stage 2	-	-	-	-	-	-	597	581	-	534	609	-

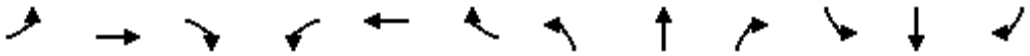
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.7	15.6	21.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	312	685	1319	-	-	1175	-	-	263	800
HCM Lane V/C Ratio	0.265	0.132	0.002	-	-	0.056	-	-	0.212	0.007
HCM Control Delay (s)	20.6	11.1	7.7	-	-	8.2	-	-	22.3	9.5
HCM Lane LOS	C	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	1	0.5	0	-	-	0.2	-	-	0.8	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	200		0	100		0	0		0
Storage Lanes	0		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Ped Bike Factor												
Frt			0.850		0.993				0.850		0.973	
Flt Protected		0.999		0.950				0.950			0.962	
Satd. Flow (prot)	0	1861	1583	1770	1850	0	0	1770	1583	0	1744	0
Flt Permitted		0.999		0.950				0.950			0.962	
Satd. Flow (perm)	0	1861	1583	1770	1850	0	0	1770	1583	0	1744	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		420			1580			423			461	
Travel Time (s)		9.5			35.9			9.6			10.5	

Intersection Summary	
Area Type:	Other



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	4	326	52	125	297	14	11	0	79	43	0	11
Future Volume (vph)	4	326	52	125	297	14	11	0	79	43	0	11
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	423	68	162	386	18	14	0	103	56	0	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	428	68	162	404	0	0	14	103	0	70	0

Intersection Summary

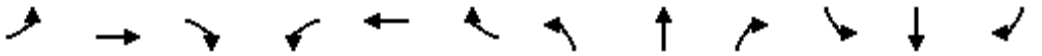
Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	326	52	125	297	14	11	0	79	43	0	11
Future Vol, veh/h	4	326	52	125	297	14	11	0	79	43	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	200	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	77	77	77	77	77	77	77	77	77	77	77	77
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	423	68	162	386	18	14	0	103	56	0	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	404	0	0	491	0	0	1159	1161	423	1238	1220	395
Stage 1	-	-	-	-	-	-	433	433	-	719	719	-
Stage 2	-	-	-	-	-	-	726	728	-	519	501	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1155	-	-	1072	-	-	173	195	631	152	180	654
Stage 1	-	-	-	-	-	-	601	582	-	420	433	-
Stage 2	-	-	-	-	-	-	416	429	-	540	543	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1155	-	-	1072	-	-	149	165	631	112	152	654
Mov Cap-2 Maneuver	-	-	-	-	-	-	149	165	-	112	152	-
Stage 1	-	-	-	-	-	-	597	579	-	417	368	-
Stage 2	-	-	-	-	-	-	345	364	-	449	540	-

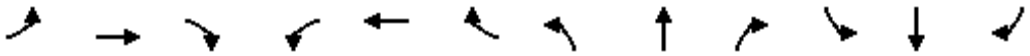
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	2.6	14.2	57.4
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	149	631	1155	-	-	1072	-	-	135
HCM Lane V/C Ratio	0.096	0.163	0.004	-	-	0.151	-	-	0.519
HCM Control Delay (s)	31.7	11.8	8.1	0	-	9	-	-	57.4
HCM Lane LOS	D	B	A	A	-	A	-	-	F
HCM 95th %tile Q(veh)	0.3	0.6	0	-	-	0.5	-	-	2.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	400		180	375		140	400		150	400		250
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2322			1174			975			1795	
Travel Time (s)		52.8			26.7			22.2			40.8	

Intersection Summary	
Area Type:	Other



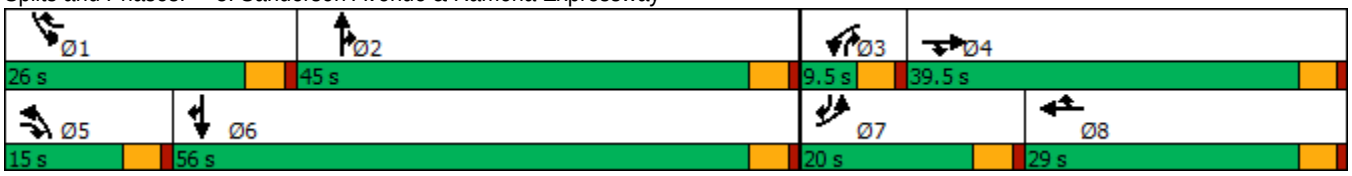
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	454	344	79	77	500	723	137	1301	111	574	682	329
Future Volume (vph)	454	344	79	77	500	723	137	1301	111	574	682	329
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	473	358	82	80	521	753	143	1355	116	598	710	343
Shared Lane Traffic (%)												
Lane Group Flow (vph)	473	358	82	80	521	753	143	1355	116	598	710	343

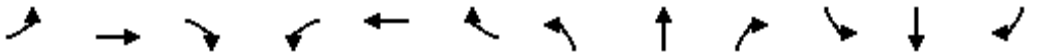
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	454	344	79	77	500	723	137	1301	111	574	682	329
Future Volume (vph)	454	344	79	77	500	723	137	1301	111	574	682	329
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Permitted Phases												
Detector Phase	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	20.0	39.5		9.5	29.0		15.0	45.0		26.0	56.0	
Total Split (%)	16.7%	32.9%		7.9%	24.2%		12.5%	37.5%		21.7%	46.7%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	15.5	35.0	49.1	5.0	24.5	50.5	9.6	40.5	50.0	21.5	52.4	72.4
Actuated g/C Ratio	0.13	0.29	0.41	0.04	0.20	0.42	0.08	0.34	0.42	0.18	0.44	0.60
v/c Ratio	1.07	0.35	0.13	0.56	0.72	1.13	0.52	1.13	0.18	0.97	0.46	0.36
Control Delay	111.5	34.7	22.5	71.7	51.1	110.2	59.9	108.6	23.0	79.3	25.2	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	111.5	34.7	22.5	71.7	51.1	110.2	59.9	108.6	23.0	79.3	25.2	13.6
LOS	F	C	C	E	D	F	E	F	C	E	C	B
Approach Delay		73.4			85.2			98.1			42.4	
Approach LOS		E			F			F			D	

Intersection Summary	
Cycle Length: 120	
Actuated Cycle Length: 120	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 74.2	Intersection LOS: E
Intersection Capacity Utilization 104.9%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: Sanderson Avenue & Ramona Expressway





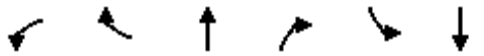
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	454	344	79	77	500	723	137	1301	111	574	682	329
Future Volume (veh/h)	454	344	79	77	500	723	137	1301	111	574	682	329
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	473	358	82	80	521	753	143	1355	116	598	710	343
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	446	1047	559	134	726	608	200	1199	596	619	1630	932
Arrive On Green	0.13	0.29	0.29	0.04	0.20	0.20	0.06	0.34	0.34	0.18	0.46	0.46
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	473	358	82	80	521	753	143	1355	116	598	710	343
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	15.5	9.5	4.2	2.7	16.4	24.5	4.9	40.5	5.9	20.6	16.2	13.7
Cycle Q Clear(g_c), s	15.5	9.5	4.2	2.7	16.4	24.5	4.9	40.5	5.9	20.6	16.2	13.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	446	1047	559	134	726	608	200	1199	596	619	1630	932
V/C Ratio(X)	1.06	0.34	0.15	0.60	0.72	1.24	0.71	1.13	0.19	0.97	0.44	0.37
Avail Cap(c_a), veh/h	446	1047	559	144	726	608	302	1199	596	619	1630	932
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.3	33.2	26.5	56.8	44.5	37.0	55.6	39.8	25.2	48.9	22.0	13.0
Incr Delay (d2), s/veh	59.3	0.2	0.1	5.8	3.4	121.3	4.7	69.4	0.7	27.7	0.8	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.4	4.1	1.6	1.3	7.6	37.9	2.3	28.9	2.4	11.2	6.9	5.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	111.5	33.4	26.6	62.6	48.0	158.3	60.2	109.1	25.9	76.6	22.8	14.1
LnGrp LOS	F	C	C	E	D	F	E	F	C	E	C	B
Approach Vol, veh/h		913			1354			1614			1651	
Approach Delay, s/veh		73.3			110.2			98.8			40.5	
Approach LOS		E			F			F			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.0	45.0	9.2	39.8	11.4	59.6	20.0	29.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	21.5	40.5	5.0	35.0	10.5	51.5	15.5	24.5
Max Q Clear Time (g_c+I1), s	22.6	42.5	4.7	11.5	6.9	18.2	17.5	26.5
Green Ext Time (p_c), s	0.0	0.0	0.0	2.6	0.1	7.2	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	80.0
HCM 6th LOS	E

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	50	0		120	155	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		258		59		
Link Speed (mph)	30		30			30
Link Distance (ft)	1246		1018			975
Travel Time (s)	28.3		23.1			22.2

Intersection Summary	
Area Type:	Other



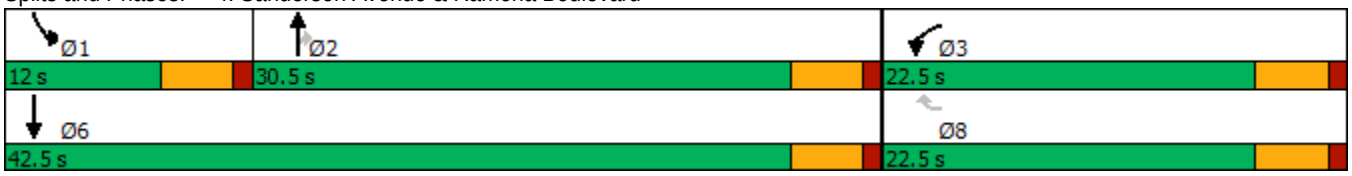
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	108	387	1172	68	161	698
Future Volume (vph)	108	387	1172	68	161	698
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	111	399	1208	70	166	720
Shared Lane Traffic (%)						
Lane Group Flow (vph)	111	399	1208	70	166	720

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	108	387	1172	68	161	698
Future Volume (vph)	108	387	1172	68	161	698
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5
Total Split (s)	22.5	22.5	30.5	30.5	12.0	42.5
Total Split (%)	34.6%	34.6%	46.9%	46.9%	18.5%	65.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	11.4	11.3	26.2	26.2	7.5	38.2
Actuated g/C Ratio	0.19	0.19	0.45	0.45	0.13	0.65
v/c Ratio	0.32	0.78	0.77	0.09	0.73	0.31
Control Delay	22.2	19.4	19.1	5.0	48.2	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.2	19.4	19.1	5.0	48.2	5.6
LOS	C	B	B	A	D	A
Approach Delay	20.0		18.4			13.6
Approach LOS	B		B			B

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 58.6	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 17.1	Intersection LOS: B
Intersection Capacity Utilization 63.9%	ICU Level of Service B
Analysis Period (min) 15	

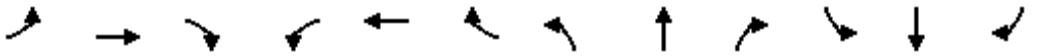
Splits and Phases: 4: Sanderson Avenue & Ramona Boulevard



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	108	387	1172	68	161	698
Future Volume (veh/h)	108	387	1172	68	161	698
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	399	1208	70	166	720
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	490	436	1425	635	206	2082
Arrive On Green	0.28	0.28	0.40	0.40	0.12	0.59
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	111	399	1208	70	166	720
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	3.1	15.8	20.0	1.8	5.9	6.8
Cycle Q Clear(g_c), s	3.1	15.8	20.0	1.8	5.9	6.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	490	436	1425	635	206	2082
V/C Ratio(X)	0.23	0.91	0.85	0.11	0.81	0.35
Avail Cap(c_a), veh/h	494	440	1425	635	206	2082
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.2	22.8	17.6	12.2	28.0	7.0
Incr Delay (d2), s/veh	0.2	23.4	6.4	0.4	20.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	8.3	8.5	0.6	3.6	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.4	46.2	24.1	12.5	48.4	7.4
LnGrp LOS	B	D	C	B	D	A
Approach Vol, veh/h	510		1278			886
Approach Delay, s/veh	40.1		23.4			15.1
Approach LOS	D		C			B

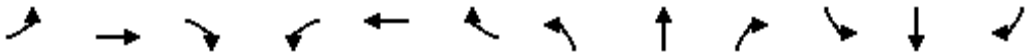
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	12.0	30.5			42.5	22.4
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	7.5	26.0			38.0	18.0
Max Q Clear Time (g_c+I1), s	7.9	22.0			8.8	17.8
Green Ext Time (p_c), s	0.0	2.8			5.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		205	315		315	300		205	290		200
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	1.00	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	1863	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	1863	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			176			176			176			176
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1580			1322			1146			1419	
Travel Time (s)		35.9			30.0			26.0			32.3	

Intersection Summary	
Area Type:	Other



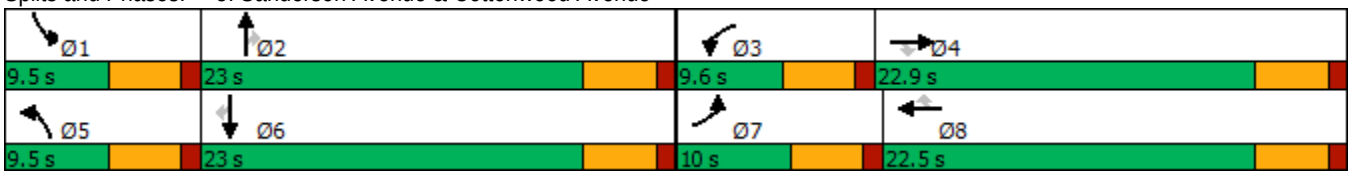
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	213	262	59	153	331	118	71	871	136	26	678	98
Future Volume (vph)	213	262	59	153	331	118	71	871	136	26	678	98
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	227	279	63	163	352	126	76	927	145	28	721	104
Shared Lane Traffic (%)												
Lane Group Flow (vph)	227	279	63	163	352	126	76	927	145	28	721	104

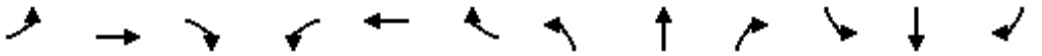
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	262	59	153	331	118	71	871	136	26	678	98
Future Volume (vph)	213	262	59	153	331	118	71	871	136	26	678	98
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	10.0	22.9	22.9	9.6	22.5	22.5	9.5	23.0	23.0	9.5	23.0	23.0
Total Split (%)	15.4%	35.2%	35.2%	14.8%	34.6%	34.6%	14.6%	35.4%	35.4%	14.6%	35.4%	35.4%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	5.6	18.2	18.2	5.2	15.4	15.4	5.1	20.6	20.6	5.1	18.9	18.9
Actuated g/C Ratio	0.10	0.31	0.31	0.09	0.26	0.26	0.09	0.35	0.35	0.09	0.32	0.32
v/c Ratio	0.69	0.25	0.10	0.54	0.72	0.23	0.26	0.75	0.22	0.09	0.64	0.17
Control Delay	41.6	17.8	0.3	35.5	30.0	2.7	30.1	24.3	3.3	28.6	21.7	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.6	17.8	0.3	35.5	30.0	2.7	30.1	24.3	3.3	28.6	21.7	1.4
LOS	D	B	A	D	C	A	C	C	A	C	C	A
Approach Delay		25.4			26.0			22.0			19.4	
Approach LOS		C			C			C			B	

Intersection Summary	
Cycle Length: 65	
Actuated Cycle Length: 58.8	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 22.7	Intersection LOS: C
Intersection Capacity Utilization 65.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: Sanderson Avenue & Cottonwood Avenue

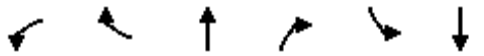




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	213	262	59	153	331	118	71	871	136	26	678	98
Future Volume (veh/h)	213	262	59	153	331	118	71	871	136	26	678	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	227	279	63	163	352	126	76	927	145	28	721	104
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	320	876	391	271	435	368	208	1211	540	108	1107	494
Arrive On Green	0.09	0.25	0.25	0.08	0.23	0.23	0.06	0.34	0.34	0.03	0.31	0.31
Sat Flow, veh/h	3456	3554	1585	3456	1870	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	227	279	63	163	352	126	76	927	145	28	721	104
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1870	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	3.8	3.8	1.9	2.7	10.6	3.9	1.3	13.8	3.9	0.5	10.4	2.9
Cycle Q Clear(g_c), s	3.8	3.8	1.9	2.7	10.6	3.9	1.3	13.8	3.9	0.5	10.4	2.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	320	876	391	271	435	368	208	1211	540	108	1107	494
V/C Ratio(X)	0.71	0.32	0.16	0.60	0.81	0.34	0.37	0.77	0.27	0.26	0.65	0.21
Avail Cap(c_a), veh/h	320	1101	491	297	567	481	291	1211	540	291	1107	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	18.3	17.5	26.5	21.5	19.0	26.8	17.5	14.2	28.1	17.6	15.1
Incr Delay (d2), s/veh	7.1	0.2	0.2	2.9	6.6	0.5	1.1	4.7	1.2	1.3	3.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	1.5	0.6	1.2	5.0	1.4	0.5	5.8	1.5	0.2	4.3	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.2	18.5	17.7	29.3	28.2	19.5	27.9	22.1	15.4	29.4	20.6	16.0
LnGrp LOS	C	B	B	C	C	B	C	C	B	C	C	B
Approach Vol, veh/h		569			641			1148			853	
Approach Delay, s/veh		24.3			26.8			21.7			20.3	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	6.3	24.7	9.2	19.1	8.1	23.0	10.0	18.3
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	18.5	5.1	18.4	5.0	18.5	5.5	18.0
Max Q Clear Time (g_c+I1), s	2.5	15.8	4.7	5.8	3.3	12.4	5.8	12.6
Green Ext Time (p_c), s	0.0	1.7	0.0	1.6	0.0	2.7	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	22.8
HCM 6th LOS	C



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.865			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1611	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1611	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	600		1160			530
Travel Time (s)	13.6		26.4			12.0

Intersection Summary	
Area Type:	Other

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	54	0	0	18	0	0
Future Volume (vph)	54	0	0	18	0	0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	59	0	0	20	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	0	20	0	0	0

Intersection Summary

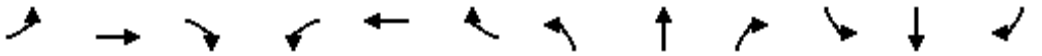
Intersection	
Int Delay, s/veh	6.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	54	0	0	18	0	0
Future Vol, veh/h	54	0	0	18	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	0	0	20	0	0

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	11	10	0	0	20	0
Stage 1	10	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	1009	1071	-	-	1596	-
Stage 1	1013	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	1009	1071	-	-	1596	-
Mov Cap-2 Maneuver	1009	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

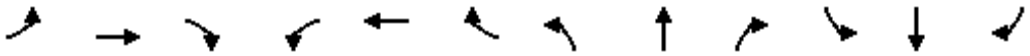
Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1009	1596	-
HCM Lane V/C Ratio	-	-	0.058	-	-
HCM Control Delay (s)	-	-	8.8	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		100	195		0	0		0	0		100
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Ped Bike Factor												
Frt		0.991			0.976				0.850			0.850
Flt Protected	0.950			0.950				0.964			0.958	
Satd. Flow (prot)	1770	1846	0	1770	1818	0	0	1796	1583	0	1785	1583
Flt Permitted	0.950			0.950				0.964			0.958	
Satd. Flow (perm)	1770	1846	0	1770	1818	0	0	1796	1583	0	1785	1583
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		664			630			754			1160	
Travel Time (s)		15.1			14.3			17.1			26.4	

Intersection Summary	
Area Type:	Other



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	6	368	23	60	250	48	17	6	57	28	4	4
Future Volume (vph)	6	368	23	60	250	48	17	6	57	28	4	4
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	6	383	24	63	260	50	18	6	59	29	4	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	407	0	63	310	0	0	24	59	0	33	4

Intersection Summary

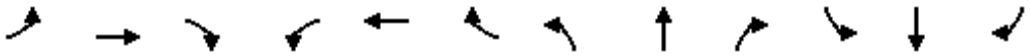
Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	368	23	60	250	48	17	6	57	28	4	4
Future Vol, veh/h	6	368	23	60	250	48	17	6	57	28	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	195	-	-	-	-	0	-	-	100
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	383	24	63	260	50	18	6	59	29	4	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	310	0	0	407	0	0	822	843	395	851	830	285
Stage 1	-	-	-	-	-	-	407	407	-	411	411	-
Stage 2	-	-	-	-	-	-	415	436	-	440	419	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1250	-	-	1152	-	-	293	300	654	280	306	754
Stage 1	-	-	-	-	-	-	621	597	-	618	595	-
Stage 2	-	-	-	-	-	-	615	580	-	596	590	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1250	-	-	1152	-	-	275	282	654	239	288	754
Mov Cap-2 Maneuver	-	-	-	-	-	-	275	282	-	239	288	-
Stage 1	-	-	-	-	-	-	618	594	-	615	562	-
Stage 2	-	-	-	-	-	-	574	548	-	534	587	-

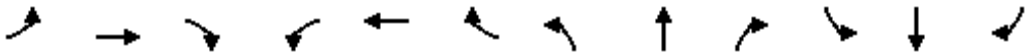
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.4	13.4	20.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	277	654	1250	-	-	1152	-	-	244	754
HCM Lane V/C Ratio	0.086	0.091	0.005	-	-	0.054	-	-	0.137	0.006
HCM Control Delay (s)	19.2	11.1	7.9	-	-	8.3	-	-	22.1	9.8
HCM Lane LOS	C	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.3	0.3	0	-	-	0.2	-	-	0.5	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	200		0	100		0	0		0
Storage Lanes	0		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Ped Bike Factor												
Frt			0.850		0.983				0.850		0.972	
Flt Protected		0.999		0.950							0.962	
Satd. Flow (prot)	0	1861	1583	1770	1831	0	0	1863	1583	0	1742	0
Flt Permitted		0.999		0.950							0.962	
Satd. Flow (perm)	0	1861	1583	1770	1831	0	0	1863	1583	0	1742	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		420			1580			423			460	
Travel Time (s)		9.5			35.9			9.6			10.5	

Intersection Summary	
Area Type:	Other



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	12	452	1	1	368	48	0	0	1	28	0	7
Future Volume (vph)	12	452	1	1	368	48	0	0	1	28	0	7
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	502	1	1	409	53	0	0	1	31	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	515	1	1	462	0	0	0	1	0	39	0

Intersection Summary

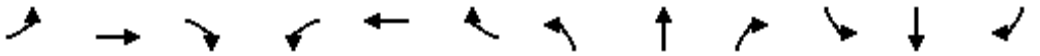
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	452	1	1	368	48	0	0	1	28	0	7
Future Vol, veh/h	12	452	1	1	368	48	0	0	1	28	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	200	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	502	1	1	409	53	0	0	1	31	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	462	0	0	503	0	0	970	992	502	967	967	436
Stage 1	-	-	-	-	-	-	528	528	-	438	438	-
Stage 2	-	-	-	-	-	-	442	464	-	529	529	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1099	-	-	1061	-	-	233	246	569	234	254	620
Stage 1	-	-	-	-	-	-	534	528	-	597	579	-
Stage 2	-	-	-	-	-	-	594	564	-	533	527	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1099	-	-	1061	-	-	227	242	569	230	250	620
Mov Cap-2 Maneuver	-	-	-	-	-	-	227	242	-	230	250	-
Stage 1	-	-	-	-	-	-	525	520	-	587	578	-
Stage 2	-	-	-	-	-	-	586	563	-	523	519	-

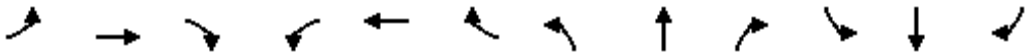
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	11.3	21
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	569	1099	-	-	1061	-	-	263
HCM Lane V/C Ratio	-	0.002	0.012	-	-	0.001	-	-	0.148
HCM Control Delay (s)	0	11.3	8.3	0	-	8.4	-	-	21
HCM Lane LOS	A	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	-	0	0	-	-	0	-	-	0.5



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	400		180	375		140	400		150	400		250
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2322			1174			975			1795	
Travel Time (s)		52.8			26.7			22.2			40.8	

Intersection Summary	
Area Type:	Other



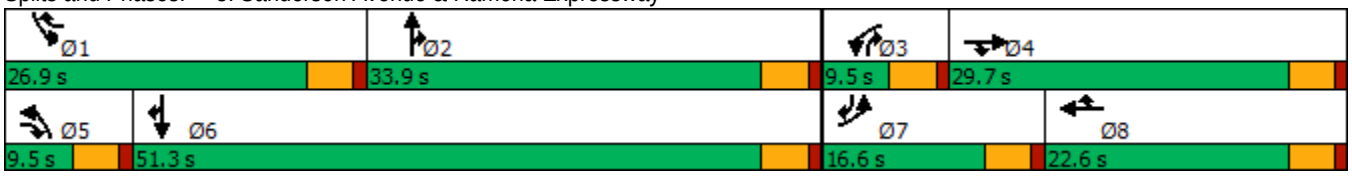
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	397	568	171	100	427	609	143	925	65	726	1658	587
Future Volume (vph)	397	568	171	100	427	609	143	925	65	726	1658	587
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	401	574	173	101	431	615	144	934	66	733	1675	593
Shared Lane Traffic (%)												
Lane Group Flow (vph)	401	574	173	101	431	615	144	934	66	733	1675	593

Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	397	568	171	100	427	609	143	925	65	726	1658	587
Future Volume (vph)	397	568	171	100	427	609	143	925	65	726	1658	587
Turn Type	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov	Prot	NA	pt+ov
Protected Phases	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Permitted Phases												
Detector Phase	7	4	4 5	3	8	8 1	5	2	2 3	1	6	6 7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	16.6	29.7		9.5	22.6		9.5	33.9		26.9	51.3	
Total Split (%)	16.6%	29.7%		9.5%	22.6%		9.5%	33.9%		26.9%	51.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	12.1	25.2	34.7	5.0	18.1	45.0	5.0	29.4	38.9	22.4	46.8	63.4
Actuated g/C Ratio	0.12	0.25	0.35	0.05	0.18	0.45	0.05	0.29	0.39	0.22	0.47	0.63
v/c Ratio	0.97	0.64	0.32	0.59	0.67	0.86	0.84	0.90	0.11	0.95	1.01	0.59
Control Delay	81.4	37.3	26.0	61.1	44.1	39.2	85.4	46.6	20.2	62.3	52.4	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	81.4	37.3	26.0	61.1	44.1	39.2	85.4	46.6	20.2	62.3	52.4	13.8
LOS	F	D	C	E	D	D	F	D	C	E	D	B
Approach Delay		51.0			43.0			50.0			47.2	
Approach LOS		D			D			D			D	

Intersection Summary	
Cycle Length: 100	
Actuated Cycle Length: 100	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 47.6	Intersection LOS: D
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 3: Sanderson Avenue & Ramona Expressway



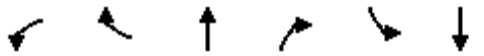
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	397	568	171	100	427	609	143	925	65	726	1658	587
Future Volume (veh/h)	397	568	171	100	427	609	143	925	65	726	1658	587
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	401	574	173	101	431	615	144	934	66	733	1675	593
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	418	906	483	162	643	642	173	1045	540	774	1663	934
Arrive On Green	0.12	0.26	0.26	0.05	0.18	0.18	0.05	0.29	0.29	0.22	0.47	0.47
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	401	574	173	101	431	615	144	934	66	733	1675	593
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	11.5	14.4	8.5	2.9	11.3	18.1	4.1	25.2	2.9	20.9	46.8	24.6
Cycle Q Clear(g_c), s	11.5	14.4	8.5	2.9	11.3	18.1	4.1	25.2	2.9	20.9	46.8	24.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	418	906	483	162	643	642	173	1045	540	774	1663	934
V/C Ratio(X)	0.96	0.63	0.36	0.62	0.67	0.96	0.83	0.89	0.12	0.95	1.01	0.64
Avail Cap(c_a), veh/h	418	906	483	173	643	642	173	1045	540	774	1663	934
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	33.1	27.1	46.8	38.2	28.9	47.1	33.8	22.7	38.2	26.6	13.5
Incr Delay (d2), s/veh	33.5	1.4	0.4	6.1	2.7	25.5	28.0	11.7	0.5	20.5	23.8	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	6.3	3.2	1.4	5.1	18.2	2.4	12.3	1.1	10.9	24.1	8.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	77.2	34.5	27.6	52.9	40.9	54.4	75.1	45.5	23.1	58.7	50.4	16.8
LnGrp LOS	E	C	C	D	D	D	E	D	C	E	F	B
Approach Vol, veh/h		1148			1147			1144			3001	
Approach Delay, s/veh		48.4			49.2			47.9			45.8	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	26.9	33.9	9.2	30.0	9.5	51.3	16.6	22.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	22.4	29.4	5.0	25.2	5.0	46.8	12.1	18.1
Max Q Clear Time (g_c+I1), s	22.9	27.2	4.9	16.4	6.1	48.8	13.5	20.1
Green Ext Time (p_c), s	0.0	1.4	0.0	3.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	47.2
HCM 6th LOS	D

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	50	0		120	155	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	3539	1583	1770	3539
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	3539	1583	1770	3539
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		287		100		
Link Speed (mph)	30		30			30
Link Distance (ft)	1246		1018			975
Travel Time (s)	28.3		23.1			22.2

Intersection Summary	
Area Type:	Other



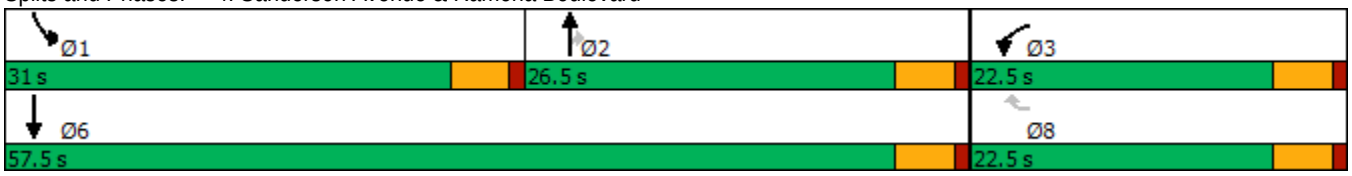
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	80	273	815	120	491	1525
Future Volume (vph)	80	273	815	120	491	1525
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	84	287	858	126	517	1605
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	287	858	126	517	1605

Intersection Summary

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	80	273	815	120	491	1525
Future Volume (vph)	80	273	815	120	491	1525
Turn Type	Prot	Perm	NA	Perm	Prot	NA
Protected Phases	3		2		1	6
Permitted Phases		8		2		
Detector Phase	3	8	2	2	1	6
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	22.5	9.5	22.5
Total Split (s)	22.5	22.5	26.5	26.5	31.0	57.5
Total Split (%)	28.1%	28.1%	33.1%	33.1%	38.8%	71.9%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	Max	Max	None	Max
Act Effct Green (s)	9.0	8.9	24.3	24.3	24.2	53.0
Actuated g/C Ratio	0.13	0.13	0.34	0.34	0.34	0.75
v/c Ratio	0.38	0.64	0.71	0.21	0.86	0.61
Control Delay	33.1	11.0	25.9	7.6	37.6	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	11.0	25.9	7.6	37.6	5.8
LOS	C	B	C	A	D	A
Approach Delay	16.0		23.5			13.5
Approach LOS	B		C			B

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 71	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay: 16.6	Intersection LOS: B
Intersection Capacity Utilization 65.4%	ICU Level of Service C
Analysis Period (min) 15	

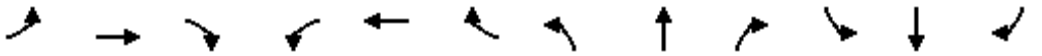
Splits and Phases: 4: Sanderson Avenue & Ramona Boulevard



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	80	273	815	120	491	1525
Future Volume (veh/h)	80	273	815	120	491	1525
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	84	287	858	126	517	1605
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	366	325	1096	489	558	2414
Arrive On Green	0.21	0.21	0.31	0.31	0.31	0.68
Sat Flow, veh/h	1781	1585	3647	1585	1781	3647
Grp Volume(v), veh/h	84	287	858	126	517	1605
Grp Sat Flow(s),veh/h/ln	1781	1585	1777	1585	1781	1777
Q Serve(g_s), s	3.1	13.7	17.2	4.7	21.9	20.6
Cycle Q Clear(g_c), s	3.1	13.7	17.2	4.7	21.9	20.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	366	325	1096	489	558	2414
V/C Ratio(X)	0.23	0.88	0.78	0.26	0.93	0.66
Avail Cap(c_a), veh/h	411	366	1096	489	605	2414
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.9	30.1	24.6	20.3	25.9	7.3
Incr Delay (d2), s/veh	0.3	19.9	5.6	1.3	19.7	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	6.8	7.7	1.8	11.8	6.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	26.2	50.0	30.2	21.5	45.6	8.8
LnGrp LOS	C	D	C	C	D	A
Approach Vol, veh/h	371		984			2122
Approach Delay, s/veh	44.6		29.1			17.8
Approach LOS	D		C			B

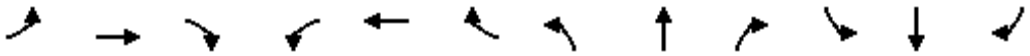
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	28.9	28.6			57.5	20.5
Change Period (Y+Rc), s	4.5	4.5			4.5	4.5
Max Green Setting (Gmax), s	26.5	22.0			53.0	18.0
Max Q Clear Time (g_c+I1), s	23.9	19.2			22.6	15.7
Green Ext Time (p_c), s	0.5	1.6			16.2	0.3

Intersection Summary	
HCM 6th Ctrl Delay	23.8
HCM 6th LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	300		205	315		315	300		205	290		200
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	1.00	0.97	1.00	1.00	0.97	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor												
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	3539	1583	3433	1863	1583	3433	3539	1583	3433	3539	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	3539	1583	3433	1863	1583	3433	3539	1583	3433	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			143			143			172			193
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1580			1322			1146			1419	
Travel Time (s)		35.9			30.0			26.0			32.3	

Intersection Summary	
Area Type:	Other



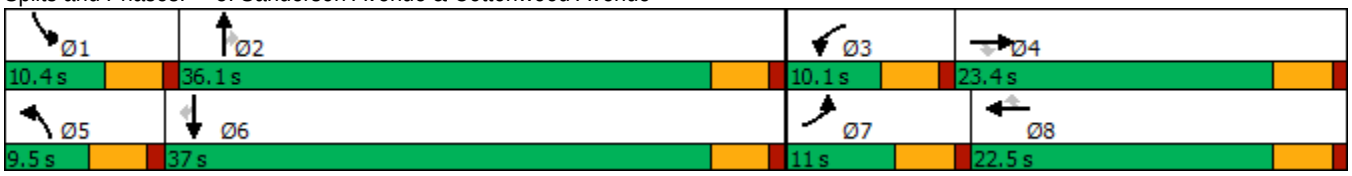
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	226	300	113	192	160	70	69	667	169	106	1234	189
Future Volume (vph)	226	300	113	192	160	70	69	667	169	106	1234	189
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	231	306	115	196	163	71	70	681	172	108	1259	193
Shared Lane Traffic (%)												
Lane Group Flow (vph)	231	306	115	196	163	71	70	681	172	108	1259	193

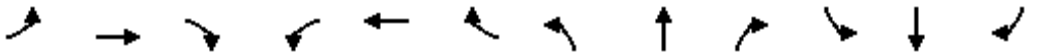
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	226	300	113	192	160	70	69	667	169	106	1234	189
Future Volume (vph)	226	300	113	192	160	70	69	667	169	106	1234	189
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	22.5
Total Split (s)	11.0	23.4	23.4	10.1	22.5	22.5	9.5	36.1	36.1	10.4	37.0	37.0
Total Split (%)	13.8%	29.3%	29.3%	12.6%	28.1%	28.1%	11.9%	45.1%	45.1%	13.0%	46.3%	46.3%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (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
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Max	Max	None	Max	Max
Act Effct Green (s)	6.6	12.4	12.4	5.6	11.5	11.5	5.0	32.1	32.1	5.9	32.8	32.8
Actuated g/C Ratio	0.09	0.17	0.17	0.08	0.16	0.16	0.07	0.45	0.45	0.08	0.46	0.46
v/c Ratio	0.74	0.50	0.29	0.73	0.55	0.19	0.29	0.43	0.21	0.38	0.78	0.23
Control Delay	49.4	30.1	5.3	51.6	35.4	1.2	37.2	15.9	3.4	37.5	22.3	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.4	30.1	5.3	51.6	35.4	1.2	37.2	15.9	3.4	37.5	22.3	3.2
LOS	D	C	A	D	D	A	D	B	A	D	C	A
Approach Delay		32.6			37.1			15.2			21.0	
Approach LOS		C			D			B			C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 71.8	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 68.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 5: Sanderson Avenue & Cottonwood Avenue





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	300	113	192	160	70	69	667	169	106	1234	189
Future Volume (veh/h)	226	300	113	192	160	70	69	667	169	106	1234	189
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	231	306	115	196	163	71	70	681	172	108	1259	193
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	321	483	215	280	232	197	185	1634	729	218	1669	744
Arrive On Green	0.09	0.14	0.14	0.08	0.12	0.12	0.05	0.46	0.46	0.06	0.47	0.47
Sat Flow, veh/h	3456	3554	1585	3456	1870	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	231	306	115	196	163	71	70	681	172	108	1259	193
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1870	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	4.5	5.6	4.7	3.8	5.8	2.8	1.4	8.9	4.6	2.1	20.1	5.1
Cycle Q Clear(g_c), s	4.5	5.6	4.7	3.8	5.8	2.8	1.4	8.9	4.6	2.1	20.1	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	483	215	280	232	197	185	1634	729	218	1669	744
V/C Ratio(X)	0.72	0.63	0.53	0.70	0.70	0.36	0.38	0.42	0.24	0.49	0.75	0.26
Avail Cap(c_a), veh/h	325	970	433	280	486	412	250	1634	729	295	1669	744
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	30.5	28.3	27.9	31.0	29.1	27.8	31.6	12.5	11.3	31.3	15.1	11.1
Incr Delay (d2), s/veh	7.5	1.4	2.0	7.6	3.8	1.1	1.3	0.8	0.8	1.7	3.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	2.4	1.8	1.8	2.7	1.1	0.6	3.3	1.6	0.9	7.9	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.0	29.6	29.9	38.6	32.9	28.9	32.9	13.3	12.1	33.1	18.3	11.9
LnGrp LOS	D	C	C	D	C	C	C	B	B	C	B	B
Approach Vol, veh/h		652			430			923			1560	
Approach Delay, s/veh		32.7			34.8			14.5			18.5	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	36.3	10.1	13.9	8.2	37.0	10.9	13.1
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.9	31.6	5.6	18.9	5.0	32.5	6.5	18.0
Max Q Clear Time (g_c+I1), s	4.1	10.9	5.8	7.6	3.4	22.1	6.5	7.8
Green Ext Time (p_c), s	0.0	5.4	0.0	1.8	0.0	6.6	0.0	0.8

Intersection Summary	
HCM 6th Ctrl Delay	22.0
HCM 6th LOS	C

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.865			
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1611	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1611	0	0	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	600		1160			530
Travel Time (s)	13.6		26.4			12.0

Intersection Summary	
Area Type:	Other

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Volume (vph)	36	0	0	61	0	0
Future Volume (vph)	36	0	0	61	0	0
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Adj. Flow (vph)	39	0	0	66	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	39	0	66	0	0	0

Intersection Summary

Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	0	0	61	0	0
Future Vol, veh/h	36	0	0	61	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	0	0	66	0	0

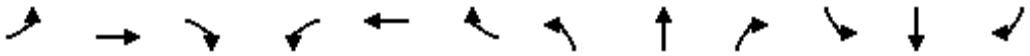
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	34	33	0	0	66	0
Stage 1	33	-	-	-	-	-
Stage 2	1	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	979	1041	-	-	1536	-
Stage 1	989	-	-	-	-	-
Stage 2	1022	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	979	1041	-	-	1536	-
Mov Cap-2 Maneuver	979	-	-	-	-	-
Stage 1	989	-	-	-	-	-
Stage 2	1022	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	979	1536	-
HCM Lane V/C Ratio	-	-	0.04	-	-
HCM Control Delay (s)	-	-	8.8	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

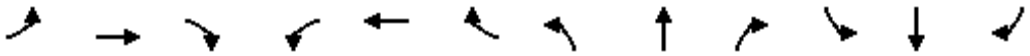
Appendix H

Project Opening Year (2022)
With Project Conditions
With Improvements
LOS Analysis Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	200		0	100		0	0		0
Storage Lanes	0		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Ped Bike Factor												
Frt			0.850		0.993				0.850		0.973	
Flt Protected		0.999		0.950				0.950			0.962	
Satd. Flow (prot)	0	1861	1583	1770	1850	0	0	1770	1583	0	1744	0
Flt Permitted		0.994		0.497				0.711			0.759	
Satd. Flow (perm)	0	1852	1583	926	1850	0	0	1324	1583	0	1376	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			68		6				103		27	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		420			1580			423			461	
Travel Time (s)		9.5			35.9			9.6			10.5	

Intersection Summary	
Area Type:	Other



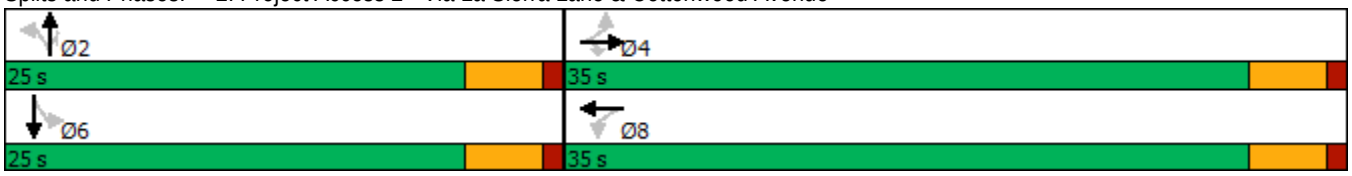
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	4	326	52	125	297	14	11	0	79	43	0	11
Future Volume (vph)	4	326	52	125	297	14	11	0	79	43	0	11
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	5	423	68	162	386	18	14	0	103	56	0	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	428	68	162	404	0	0	14	103	0	70	0

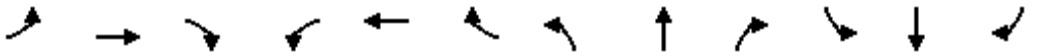
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	4	326	52	125	297	11	0	79	43	0
Future Volume (vph)	4	326	52	125	297	11	0	79	43	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		4			8		2			6
Permitted Phases	4		4	8		2		2	6	
Detector Phase	4	4	4	8	8	2	2	2	6	6
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	35.0	35.0	35.0	35.0	35.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	58.3%	58.3%	58.3%	58.3%	58.3%	41.7%	41.7%	41.7%	41.7%	41.7%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)		4.5	4.5	4.5	4.5		4.5	4.5		4.5
Lead/Lag										
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)		12.4	12.4	12.4	12.4		6.8	6.8		6.8
Actuated g/C Ratio		0.44	0.44	0.44	0.44		0.24	0.24		0.24
v/c Ratio		0.53	0.09	0.40	0.50		0.04	0.23		0.20
Control Delay		8.5	2.0	8.8	8.0		10.6	4.8		9.1
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay		8.5	2.0	8.8	8.0		10.6	4.8		9.1
LOS		A	A	A	A		B	A		A
Approach Delay		7.6			8.2		5.5			9.1
Approach LOS		A			A		A			A

Intersection Summary			
Cycle Length: 60			
Actuated Cycle Length: 28.5			
Natural Cycle: 45			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay: 7.8		Intersection LOS: A	
Intersection Capacity Utilization 54.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Project Access 2 - Via La Sierra Lane & Cottonwood Avenue

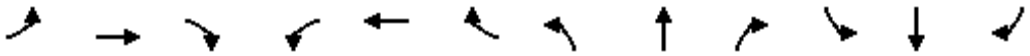




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	326	52	125	297	14	11	0	79	43	0	11
Future Volume (veh/h)	4	326	52	125	297	14	11	0	79	43	0	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	5	423	68	162	386	18	14	0	103	56	0	14
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	135	915	779	570	871	41	530	0	288	411	26	50
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.18	0.00	0.18	0.18	0.00	0.18
Sat Flow, veh/h	5	1861	1585	906	1773	83	1481	0	1585	967	142	277
Grp Volume(v), veh/h	428	0	68	162	0	404	14	0	103	70	0	0
Grp Sat Flow(s),veh/h/ln	1866	0	1585	906	0	1855	1481	0	1585	1387	0	0
Q Serve(g_s), s	0.0	0.0	0.6	4.0	0.0	3.9	0.0	0.0	1.6	0.6	0.0	0.0
Cycle Q Clear(g_c), s	4.2	0.0	0.6	8.1	0.0	3.9	0.2	0.0	1.6	1.1	0.0	0.0
Prop In Lane	0.01		1.00	1.00		0.04	1.00		1.00	0.80		0.20
Lane Grp Cap(c), veh/h	1049	0	779	570	0	912	530	0	288	487	0	0
V/C Ratio(X)	0.41	0.00	0.09	0.28	0.00	0.44	0.03	0.00	0.36	0.14	0.00	0.00
Avail Cap(c_a), veh/h	2190	0	1756	1128	0	2056	1319	0	1180	1242	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.6	0.0	3.7	7.3	0.0	4.6	9.3	0.0	9.9	9.6	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.3	0.0	0.3	0.0	0.0	0.8	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.1	0.5	0.0	0.6	0.1	0.0	0.4	0.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.9	0.0	3.8	7.6	0.0	4.9	9.3	0.0	10.6	9.8	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	B	A	A	A
Approach Vol, veh/h		496			566			117			70	
Approach Delay, s/veh		4.7			5.7			10.5			9.8	
Approach LOS		A			A			B			A	

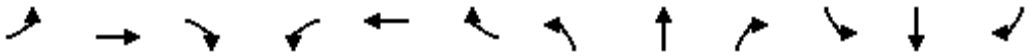
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		9.5		18.0		9.5		18.0				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		20.5		30.5		20.5		30.5				
Max Q Clear Time (g_c+I1), s		3.6		6.2		3.1		10.1				
Green Ext Time (p_c), s		0.3		3.0		0.3		3.4				

Intersection Summary												
HCM 6th Ctrl Delay			6.0									
HCM 6th LOS			A									



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	200		0	100		0	0		0
Storage Lanes	0		1	1		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Ped Bike Factor												
Frt			0.850		0.983				0.850		0.972	
Flt Protected		0.999		0.950							0.962	
Satd. Flow (prot)	0	1861	1583	1770	1831	0	0	1863	1583	0	1742	0
Flt Permitted		0.985		0.420							0.770	
Satd. Flow (perm)	0	1835	1583	782	1831	0	0	1863	1583	0	1394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			27		12				189		27	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		420			1580			423			460	
Travel Time (s)		9.5			35.9			9.6			10.5	

Intersection Summary	
Area Type:	Other



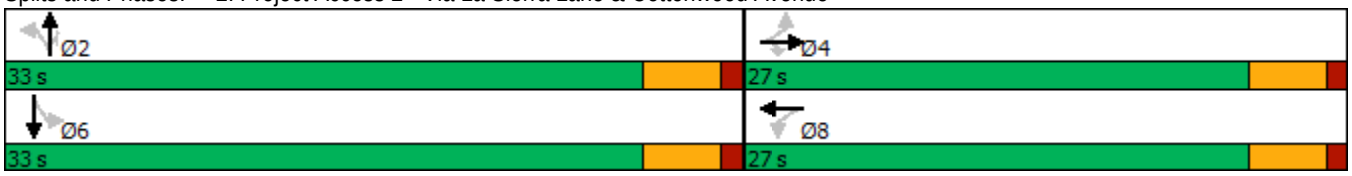
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Volume (vph)	12	452	1	1	368	48	0	0	1	28	0	7
Future Volume (vph)	12	452	1	1	368	48	0	0	1	28	0	7
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Adj. Flow (vph)	13	502	1	1	409	53	0	0	1	31	0	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	515	1	1	462	0	0	0	1	0	39	0

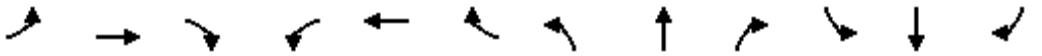
Intersection Summary

Lane Group	EBL	EBT	EBR	WBL	WBT	NBR	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	12	452	1	1	368	1	28	0
Future Volume (vph)	12	452	1	1	368	1	28	0
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA
Protected Phases		4			8			6
Permitted Phases	4		4	8		2	6	
Detector Phase	4	4	4	8	8	2	6	6
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	27.0	27.0	27.0	27.0	27.0	33.0	33.0	33.0
Total Split (%)	45.0%	45.0%	45.0%	45.0%	45.0%	55.0%	55.0%	55.0%
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0		0.0
Total Lost Time (s)		4.5	4.5	4.5	4.5	4.5		4.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	None	Min	Min	Min
Act Effct Green (s)		13.7	13.7	13.7	13.7	6.1		6.1
Actuated g/C Ratio		0.47	0.47	0.47	0.47	0.21		0.21
v/c Ratio		0.59	0.00	0.00	0.53	0.00		0.12
Control Delay		8.7	0.0	4.0	7.6	0.0		7.9
Queue Delay		0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		8.7	0.0	4.0	7.6	0.0		7.9
LOS		A	A	A	A	A		A
Approach Delay		8.6			7.6			7.9
Approach LOS		A			A			A

Intersection Summary	
Cycle Length: 60	
Actuated Cycle Length: 29	
Natural Cycle: 50	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 8.1	Intersection LOS: A
Intersection Capacity Utilization 45.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Project Access 2 - Via La Sierra Lane & Cottonwood Avenue





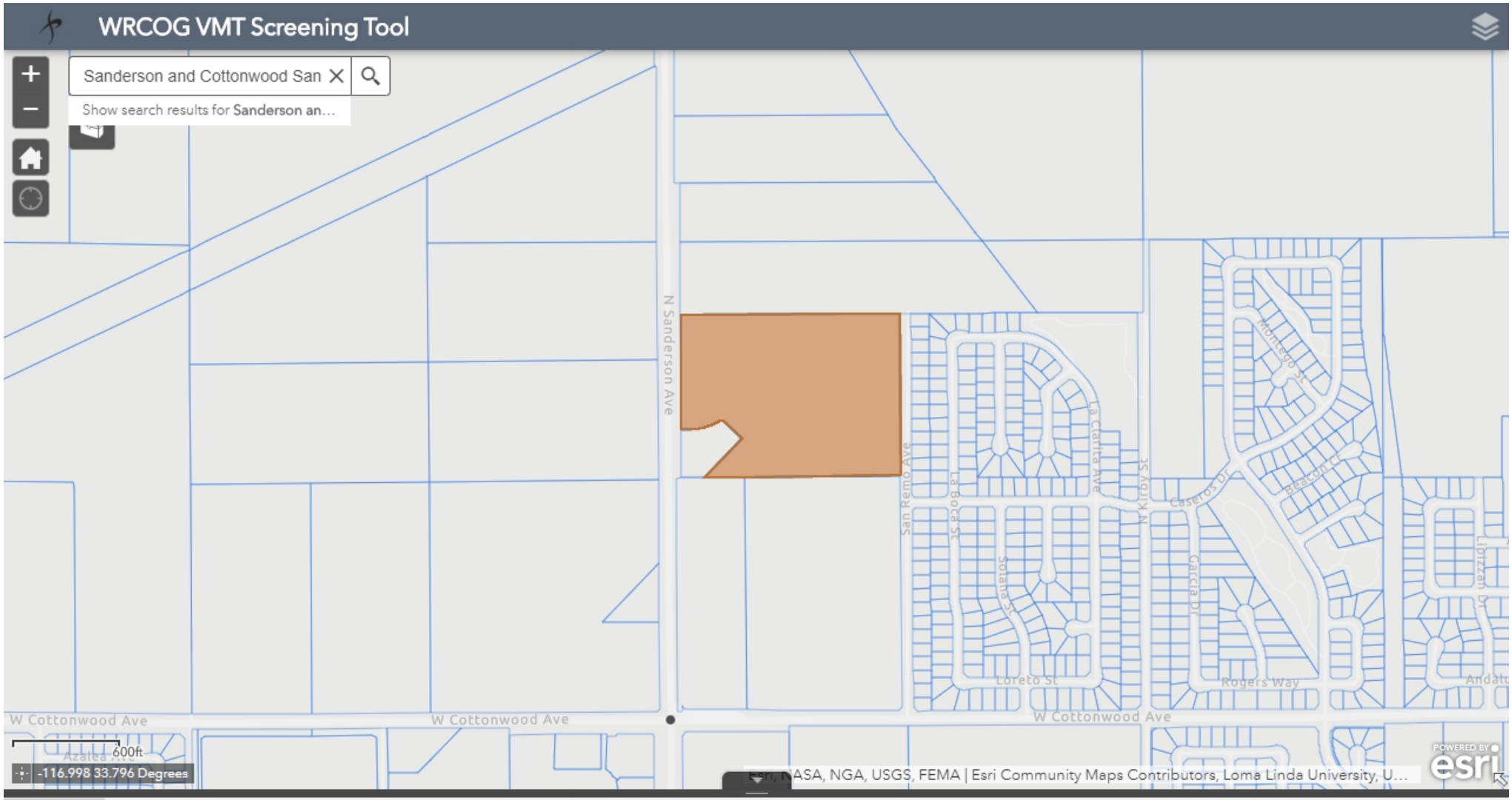
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	452	1	1	368	48	0	0	1	28	0	7
Future Volume (veh/h)	12	452	1	1	368	48	0	0	1	28	0	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	502	1	1	409	53	0	0	1	31	0	8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	779	671	480	687	89	0	385	326	479	30	63
Arrive On Green	0.42	0.42	0.42	0.42	0.42	0.42	0.00	0.00	0.21	0.21	0.00	0.21
Sat Flow, veh/h	16	1839	1585	896	1622	210	0	1870	1585	1034	145	304
Grp Volume(v), veh/h	515	0	1	1	0	462	0	0	1	39	0	0
Grp Sat Flow(s),veh/h/ln	1855	0	1585	896	0	1833	0	1870	1585	1484	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	5.3	0.0	0.0	5.3	0.0	4.7	0.0	0.0	0.0	0.4	0.0	0.0
Prop In Lane	0.03		1.00	1.00		0.11	0.00		1.00	0.79		0.21
Lane Grp Cap(c), veh/h	938	0	671	480	0	776	0	385	326	572	0	0
V/C Ratio(X)	0.55	0.00	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.07	0.00	0.00
Avail Cap(c_a), veh/h	1855	0	1468	930	0	1698	0	2195	1860	1972	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	5.6	0.0	4.0	7.7	0.0	5.4	0.0	0.0	7.7	7.8	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	0.0	4.0	7.7	0.0	6.1	0.0	0.0	7.7	7.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		516			463			1			39	
Approach Delay, s/veh		6.1			6.1			7.7			7.9	
Approach LOS		A			A			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		9.5		14.8		9.5		14.8				
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5				
Max Green Setting (Gmax), s		28.5		22.5		28.5		22.5				
Max Q Clear Time (g_c+I1), s		2.0		7.3		2.4		7.3				
Green Ext Time (p_c), s		0.0		3.0		0.1		2.6				

Intersection Summary												
HCM 6th Ctrl Delay			6.2									
HCM 6th LOS			A									

Appendix I

Western Riverside Council of Governments (WRCOG)
VMT Screening Tool Output



Output Layer | Western Riverside County Parcels (Zoom in to view) | City Boundaries | TUMF Zone Boundaries

Options | Filter by map extent | Zoom to | Clear selection | Refresh

OBJECTID_12_13	Within a Transit Priority Area (TPA)?	Within a low VMT generating TAZ based on Total VMT?	Within a low VMT generating TAZ based on Residential Home-Based VMT?	Within a low VMT generating TAZ based on Home-Based Work VMT?	Addtional Details	SHAPE_Length	SHAPE_Area
1	No (Fail)	Yes (Pass)	Yes (Pass)	Yes (Pass)	• TPA designation is based on October		

1 features 0 selected

VMT Screening Results (1 of 2)

Within a Transit Priority Area (TPA)?	No (Fail)
Within a low VMT generating TAZ based on Total VMT?	Yes (Pass)
Within a low VMT generating TAZ based on Residential Home-Based VMT?	Yes (Pass)
Within a low VMT generating TAZ based on Home-Based Work VMT?	Yes (Pass)
Addtional Details	

- TPA designation is based on October 2018 conditions.
- Screening results are based on location of parcel centroids. If results are desired considering the full parcel, please refer to the associated map layers to visually review parcel and TAZ boundary relationship.
- If VMT screening is desired for current baseline conditions, contact WRCOG for 2012 and 2040 VMT data. Interpolated VMT results can be obtained using the complete data set.
- VMT results do not account for full length of trips that occur beyond the SCAG region.

Zoom to

(2 of 2)

APN:436170020; TAZ:4,210

Within a Transit Priority Area (TPA)?
No (Fail)

Within a low VMT generating TAZ based on Total VMT?
Yes (Pass)
Jurisdictional average 2012 daily total VMT per service population = 28.88
Project TAZ 2012 daily total VMT per service population = 27.70

Within a low VMT generating TAZ based on Residential Home-Based VMT?
Yes (Pass)
Jurisdictional average 2012 daily residential home-based VMT per capita = 14.49
Project TAZ 2012 daily residential home-based VMT per capita = 20.70

Within a low VMT generating TAZ based on Home-Based Work VMT?
Yes (Pass)
Jurisdictional average 2012 daily home-based work VMT per worker = 7.59
Project TAZ 2012 daily home-based work VMT per worker = 0.00

Notes:

- TPA designation is based on October 2018 conditions.
- Screening results are based on location of parcel centroids. If results are desired considering the full parcel, please refer to the associated map layers to visually review parcel and TAZ boundary relationship.
- If VMT screening is desired for current baseline conditions, contact WRCOG for 2012 and 2040 VMT data. Interpolated VMT results can be obtained using the complete data set.
- VMT results do not account for full length of trips that occur beyond the SCAG region.

Zoom to