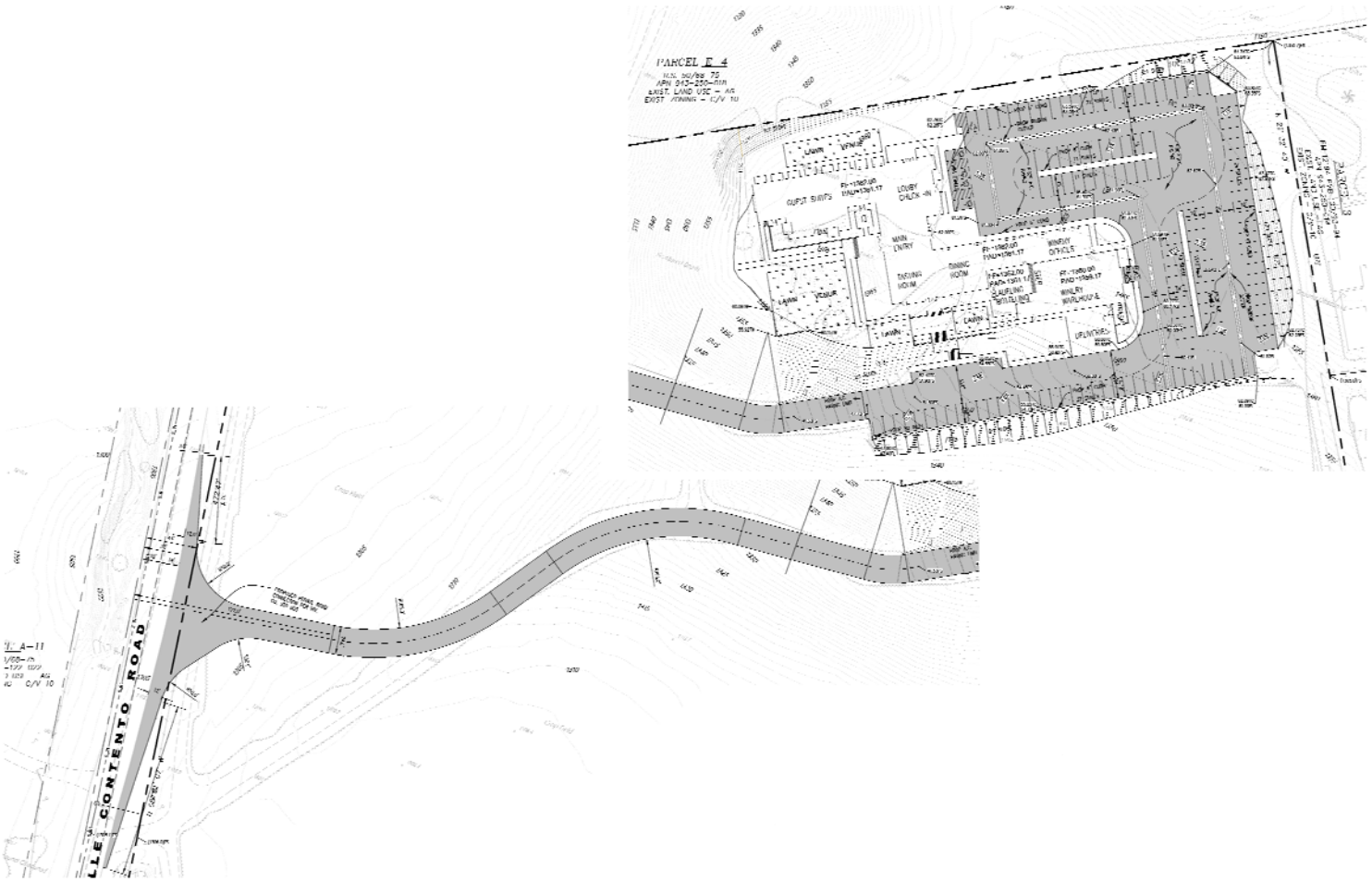
MEXIN TEME WINERY
TRAFFIC IMPACT ANALYSIS
County of Riverside, California



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TRAFFIC IMPACT ANALYSIS
County of Riverside, California

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July 19, 2022
(Update to the May 27, 2022 Report)

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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 Mexin Teme Winery project, hereinafter referred to as "Project" from a traffic and circulation standpoint and determine whether the project will have a significant traffic impact. This study has been conducted pursuant to the *County of Riverside Transportation Analysis Guidelines for Level of Service and Vehicle Miles Traveled*, dated December 2020, and the California Environmental Quality Act (CEQA) requirements.

This study is prepared in accordance with the scope of work that has been approved by the County of Riverside staff, which is contained in Appendix A.

1.2 Site Location & Project Description

The proposed Mexin Teme Winery Project is located at 33990 Rancho California Road, near the northeast corner of the intersection of Rancho California Road at Calle Contento in the County of Riverside. The project site is approximately 20.04 gross acres and currently consists of an existing vineyard.

The proposed project consists of the following land uses:

- 8,836 square feet (SF) wine-tasting room;
- 10-room (6,352 SF) hotel; and
- 4,380 SF of general light industrial.

Access to the project site will be provided via one (1) full-access unsignalized driveway located along Calle Contento approximately 580 feet north of Rancho California Road. Although the County of Riverside Southwest Area Plan does not have a formal roadway classification for Calle Contento, the City of Temecula General Plan identifies Calle Contento as a collector street. Per the County of Riverside Roadway Design Requirements Standard No. 114, the minimum intersection interval for a collector is 200 feet. Hence, the proposed intersection interval is consistent with County of Riverside guidelines.

The project is planned to open in 2023 and will be evaluated in one (1) single phase. The project site location map is shown on Exhibit 1-1. Exhibit 1-2 shows the proposed project's site plan.

1.3 Traffic Study Area & Analysis Scenarios

Exhibit 1-1 illustrates the project site location map and traffic analysis 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.

The study area consist of the following three (3) intersections listed below. The jurisdiction where each key study intersection is located is also identified.

1. Calle Contento at Rancho California Road [County of Riverside]

2. Butterfield Stage Rd at Rancho California Rd [County of Riverside/City of Temecula]

3. Calle Contento at Project Access [County of Riverside]

The analysis evaluates traffic conditions of the three (3) study intersections for the following scenarios during the weekday AM (7:00 AM – 9:00 AM), weekday PM (4:00 PM – 6:00 PM), and Saturday midday peak period in accordance with the applicable jurisdictional traffic impact analysis guidelines:

- Existing Conditions;

- Opening Year (2023) With Ambient Growth Without Project Conditions;

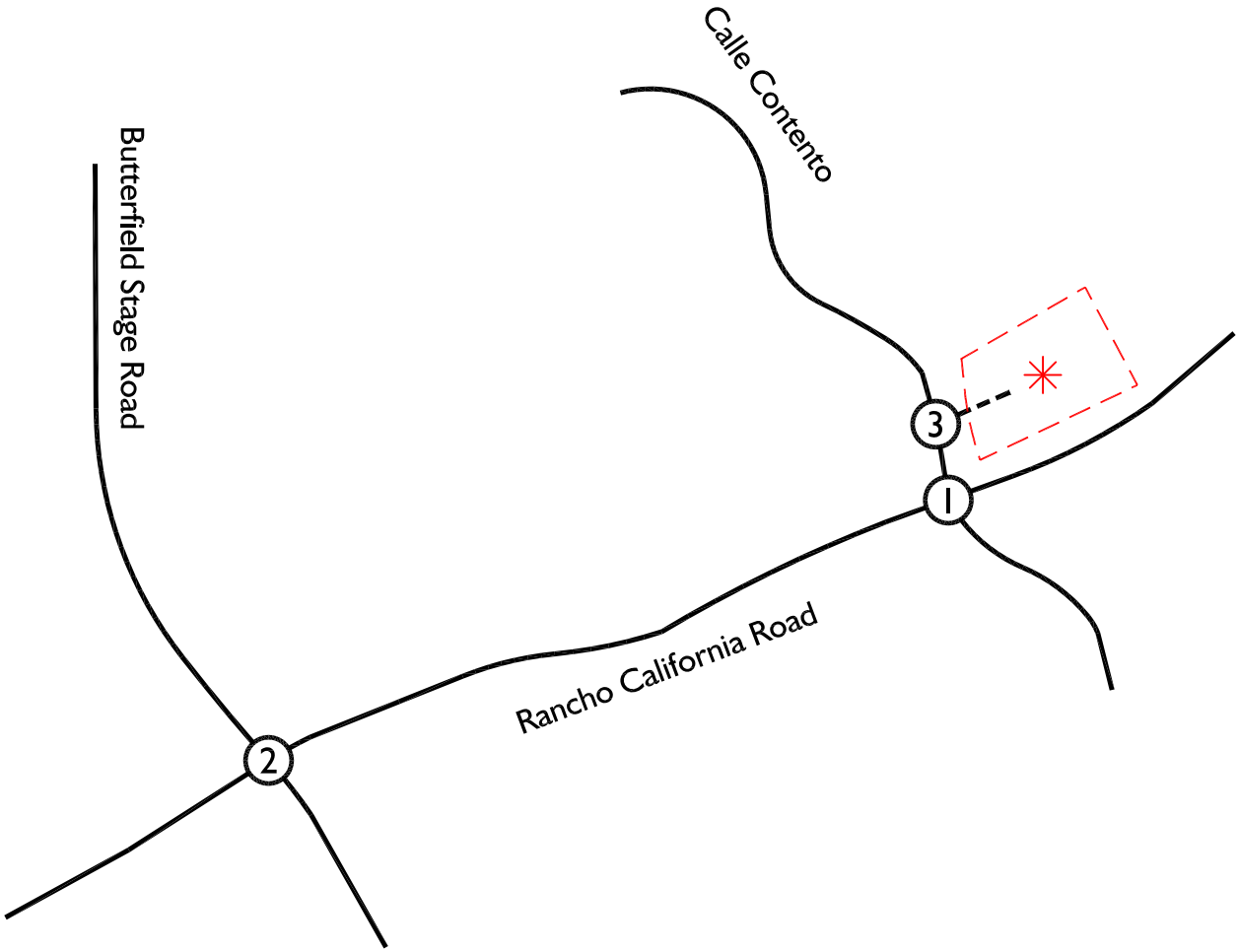
- Opening Year (2023) With Ambient Growth With Project Conditions;

- Opening Year (2023) With Ambient Growth & Cumulative Projects Without Project Conditions; and

- Opening Year (2023) With Ambient Growth & Cumulative Projects With Project Conditions.

It is important to note that while the intersection of Calle Contento at Rancho California Road currently operates as a cross-street stop, the County is finalizing design plans to convert this intersection into a roundabout. For the purposes of this analysis, the roundabout has been assumed under all opening year background conditions. Exhibit 1-3 illustrates the design of the roundabout and its location with respect to the project site.

Exhibit 1-1
Location Map



Legend:

(1) = Study Area Intersection
--- = Project Access Driveway
✳ = Project Site
--- = Project Site Boundary

N

Exhibit 1-2
Site Plan

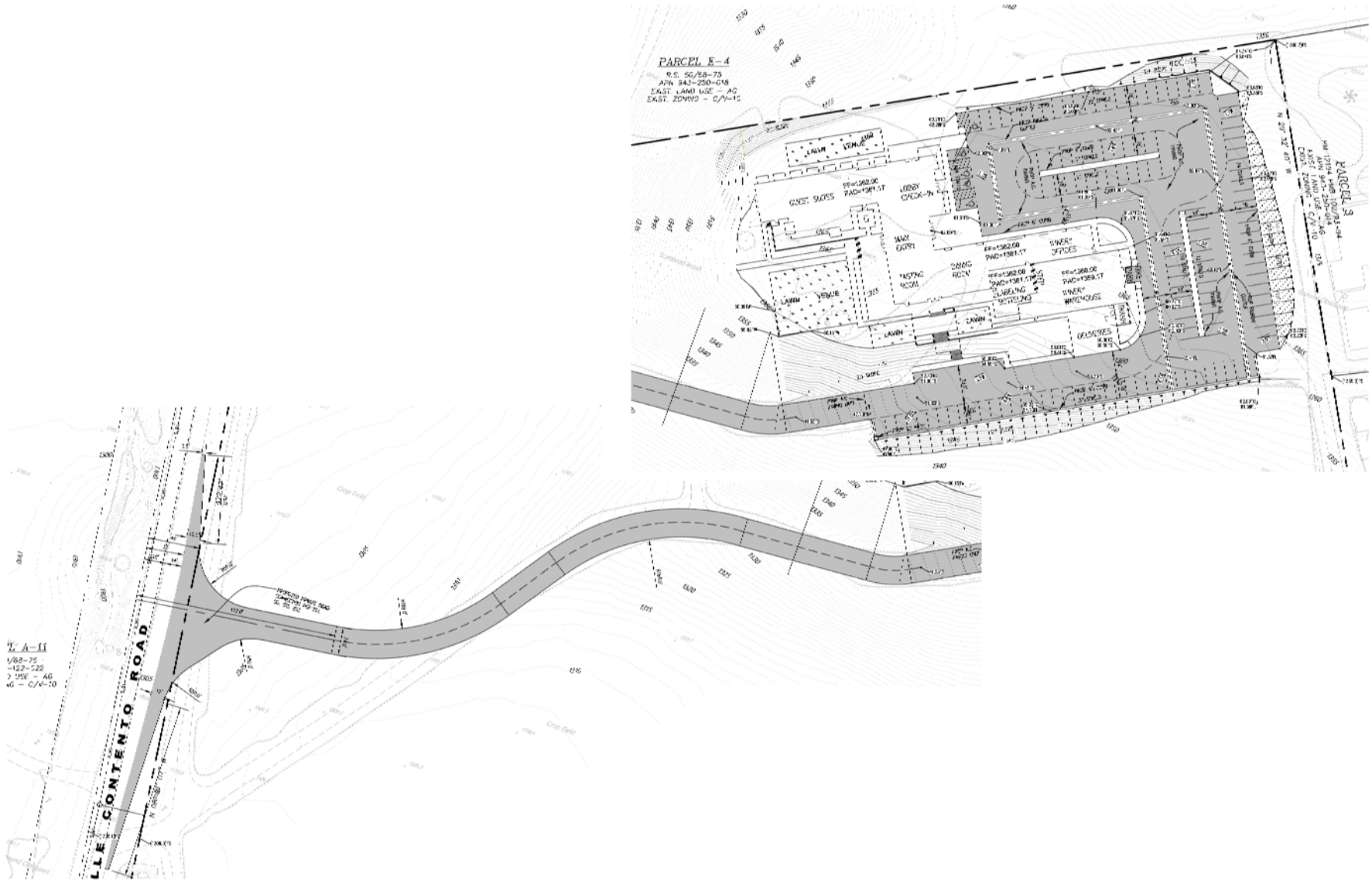
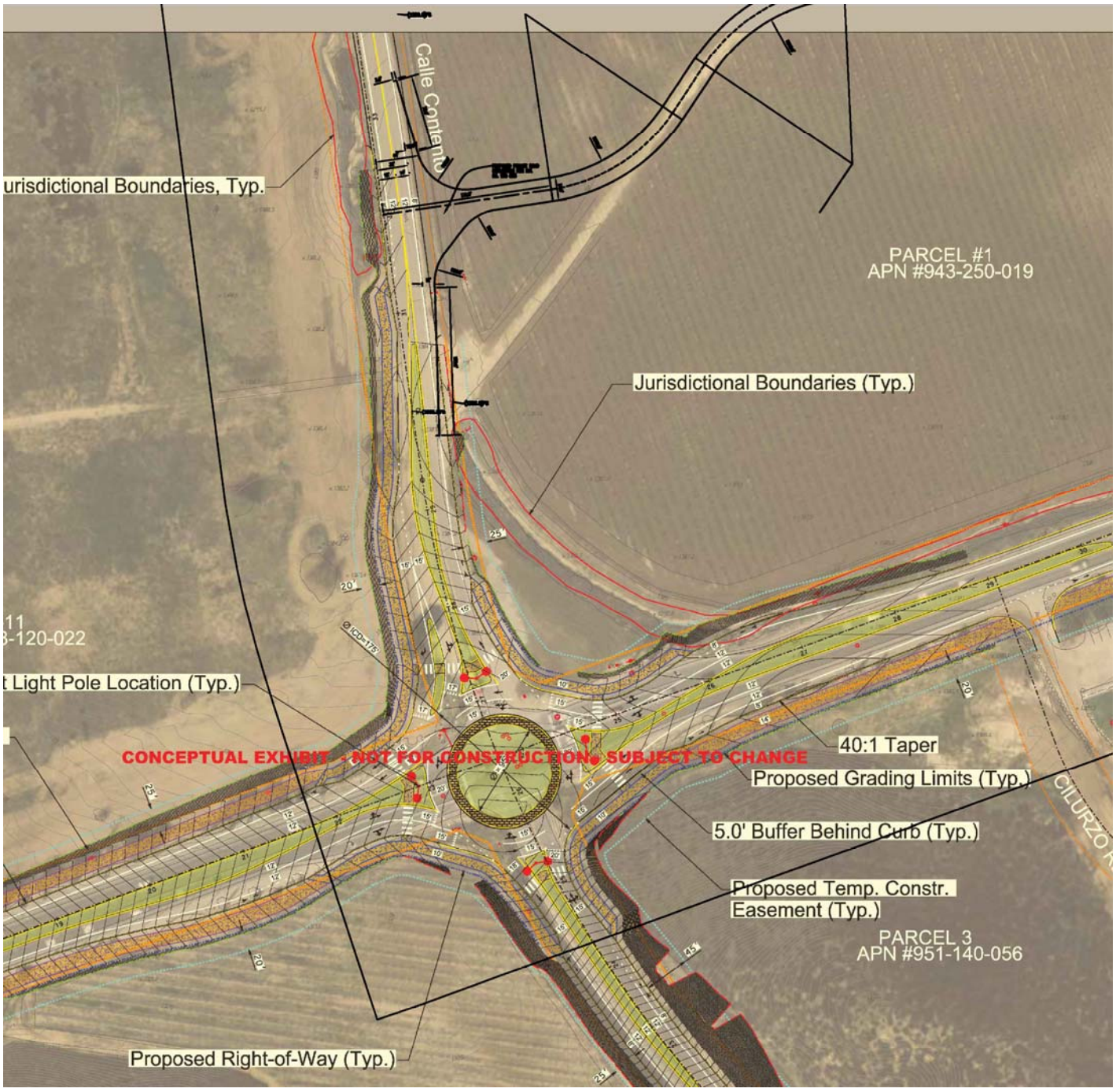


Exhibit 1-3

Planned Roundabout & Proposed Project Driveway Location



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

2.1 Study Intersection Peak Hour Level of Service Analysis Methodology

In accordance with the *County of Riverside Transportation Analysis Guidelines for Level of Service Vehicle Miles Traveled*, dated December 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 interrupted flow (flow regulated by the existence of traffic control devices) are:

- **LOS A** (Free Flow / Insignificant Delays) describes traffic operations in which progression is exceptionally favorable or the cycle length is extremely short. Generally, LOS A operations for signalized intersections tend to result in most vehicles arriving during the green phase and traveling through the intersection without stopping.

- **LOS B** (Stable Operation / Minimal Delays) describes traffic operations in which progression slightly diminishes but is still considered highly favorable and the cycle length is short. Vehicles stop more often causing a marginal increase in average delay.

- **LOS C** (Stable Operation / Acceptable Delays) describes traffic operations in which progression is favorable and the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Many vehicles still

past through the intersection but a significant number of vehicles are stopping. Average delay is fair.

- **LOS D** (Approaching Unstable / Tolerable Delays)describes traffic operations in which progression is ineffective and/or cycle length is long. Considerable amount of vehicles stop and individual cycle failures are noticeable. Average delay is adequate.

- **LOS E** (Unstable Operation / Significant Delays) describes traffic operations in which progression is unfavorable and the cycle length is exceedingly long. Individual cycle failures are frequent. Average delay is high.

- **LOS F** (Forced Flow / Excessive Delays) describes traffic operations in which progression is extremely poor and the cycle length is extremely long. Most cycles fail to clear the queue. Average delay is vast.

2.1.1 HCM (6th Edition) Methodology

Level of service is typically dependent on the quality of traffic flow at the intersection along a roadway. The Highway Capacity Manual 6th Edition (HCM 6) expresses the level of service at an intersection in terms of delay time for various intersection approaches. The HCM 6 uses different procedures depending on the type of intersection control. The levels of service determined in this study are calculated using the HCM 6 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 6 intersection analysis program.

For all-way stop-controlled intersections, average control delay per vehicle is used to determine the level of service.

For intersections with stop control on the minor approach only, the calculation of level of service is dependent on the occurrence of gaps occurring in the free-flow traffic movement of the major street, and the level of service is determined based on the worst individual movement on the stop-controlled minor approach or movements sharing a single lane on the stop-controlled minor approach.

Table 2-1 shows the level of service criteria based on the HCM 6 methodology.

Table 2-1
HCM Intersection LOS & Delay Ranges

LOS	Average Control Delay Per Vehicle (Seconds)	
	Signalized	Unsignalized
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	>80.00	>50.00

2.1.2 Analysis Parameters

For this study, the HCM level of service grades will be determined utilizing the HCM 6 methodology and the PTV Vistro analysis software. All analysis parameters utilized in this analysis are in accordance with the County of Riverside TIA Guidelines. Existing peak hour factors have been calculated based upon the manual turning movement counts collected at the study area intersections.

2.2 LOS Performance Criteria & Thresholds for Requiring LOS Improvements

The three (3) key study intersections span over the following jurisdictions:

- County of Riverside; and
- City of Temecula.

Hence, this study evaluates the potential traffic impacts associated with the proposed project for each study intersection based on the performance criteria and thresholds of significance set forth by the respective jurisdiction(s).

2.2.1 County of Riverside

According to the Riverside County General Plan, *Section C 2.1*, the following countywide target Levels of Service shall be maintained:

- LOS "C" shall apply to all development proposals in any area of the Riverside County not located within the boundaries of an Area Plan, as well those areas located within the following Area Plans: REMAP, Eastern Coachella Valley, Desert Center, Palo Verde Valley, and those non-Community Development areas of the Elsinore, Lake Mathews/ Woodcrest, Mead Valley and Temescal Canyon Area Plans.

- LOS "D" shall apply to all development proposals located within any of the following Area Plans: Eastvale, Jurupa, Highgrove, Reche Canyon/Badlands, Lakeview/Nuevo, Sun City/Menifee Valley, Harvest Valley/Winchester, Southwest Area, The Pass, San Jacinto Valley, Western Coachella Valley and those Community Development Areas of the Elsinore, Lake Mathews/Woodcrest, Mead Valley and Temescal Canyon Area Plans.

- LOS "E" may be allowed by the Board of Supervisors within designated areas where transit-oriented development and walkable communities are proposed.

2.2.2 City of Temecula

The City of Temecula Traffic Impact Analysis Guidelines, dated May 26, 2020, states that the results of the "with Project" conditions shall conform to the City's LOS thresholds:

- LOS "D" or better for all intersections

- LOS "E" or better for all arterial highway segments (links)

- LOS "F" or better will be permitted on Old Town Front Street from Second Street to Moreno Road North

All study area intersections or study area roadway links that do not achieve the required LOS, shall be reanalyzed using the proposed delay reduction measures to determine if the required LOS can be achieved.

If added project traffic causes an increase in delay of 2.0 seconds or more at intersections operating at LOS E or F, it shall be considered a significant change in delay and measures will be required to reduce the delay to pre-project or acceptable conditions.

2.2.3 Minimum Acceptable LOS Thresholds

Based on the above-mentioned level of service and impact criteria, LOS D is the minimum acceptable LOS at the three (3) key study intersections. As such, operational improvements would be required when existing traffic conditions exceed General Plan target LOS; when project traffic, when added to existing traffic, will deteriorate the LOS to below the target LOS; or when cumulative traffic exceeds the target LOS.

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 & Intersection Geometrics

Exhibit 3-1 identifies the existing roadway conditions for the study area roadways. 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

Existing conditions intersection level of service calculations are based upon manual peak period turning movement counts which have been collected in April 2022 during a typical weekday and Saturday conditions. The weekday AM and PM peak hour traffic volumes were determined by counting the two-hour peak period between 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, respectively, and using the highest hour within each two-hour peak period. The Saturday peak period was determined by collecting 24-hour roadway volumes along four (4) roadway segments located near the project site and determining which peak period generally produced the highest volumes. The Saturday midday peak period was determined to be between 2:00 PM and 5:00 PM and the highest hour within the three-hour peak period was utilized.

Existing weekday AM and PM peak hour traffic volumes for the key study intersections are shown on Exhibit 3-2. Existing Saturday midday peak hour traffic volumes for the key study intersections are shown in Exhibit 3-3.

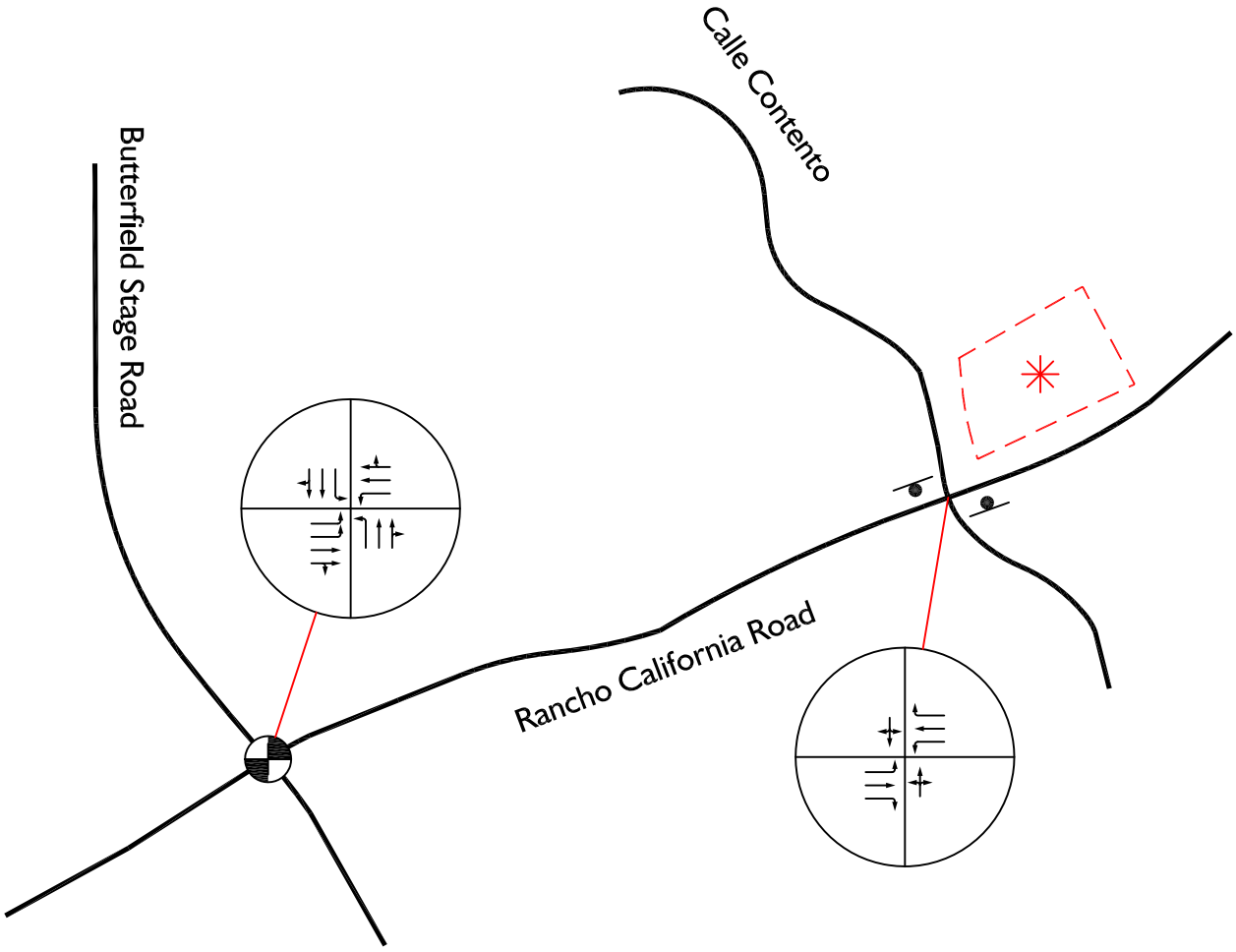
The traffic count worksheets are included in Appendix B.

3.3 County of Riverside General Plan & Southwest Area Plan Circulation Element

The County of Riverside Southwest Area Plan roadway classification is shown on Exhibit 3-4. The County of Riverside General Plan Typical Roadway Cross-Sections are shown on Exhibit 3-5.

Exhibit 3-1

Existing Lane Geometry and Traffic Controls



Legend:

= Traffic Signal

= Stop Sign

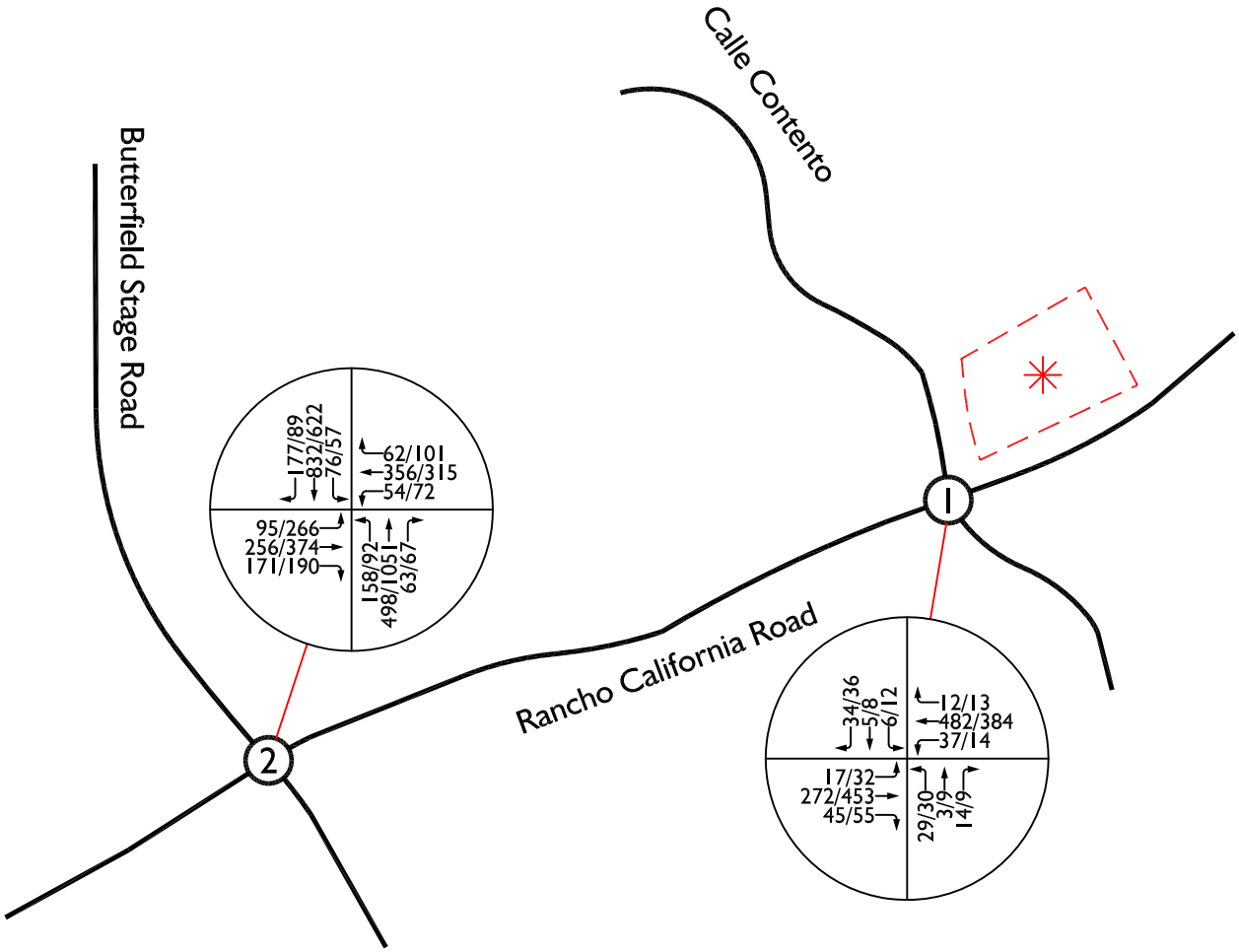
= Project Site

= Project Site Boundary

N

Exhibit 3-2

Existing Traffic Volumes Weekday



Legend:

(1) = Study Area Intersection

= Project Site

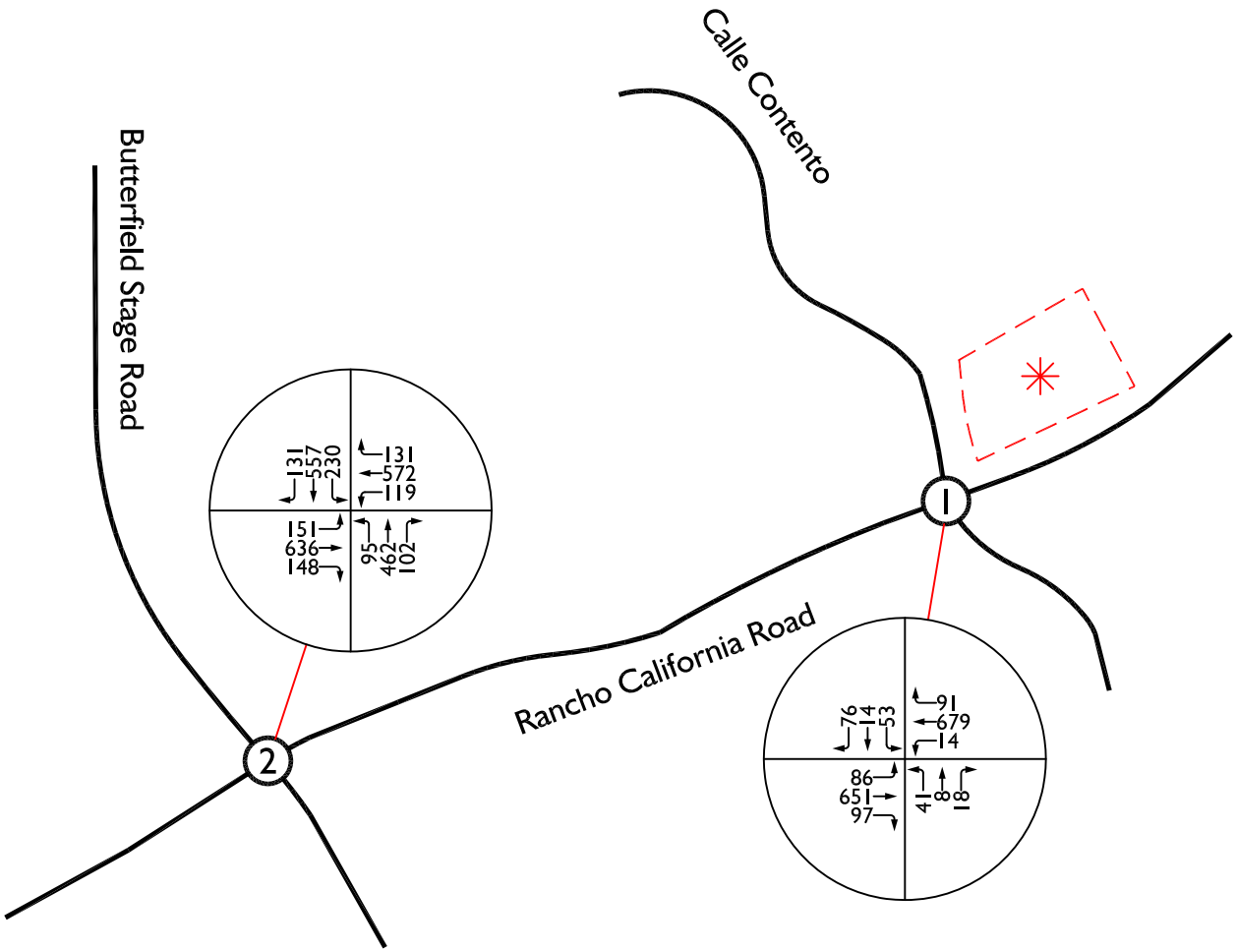
= Project Site Boundary

10/20 = Weekday AM/PM Peak Hour Volumes

N

Exhibit 3-3

Existing Traffic Volumes
Saturday



Legend:

(1) = Study Area Intersection

= Project Site

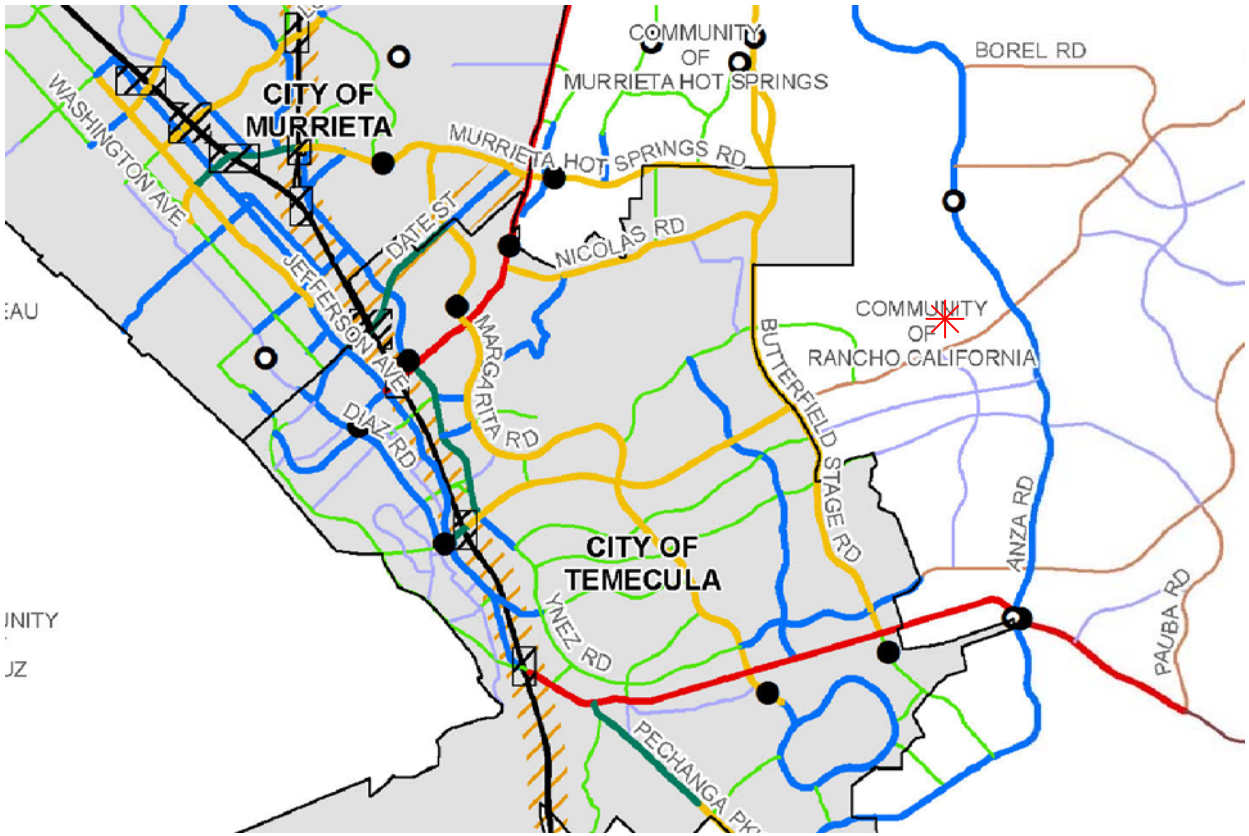
= Project Site Boundary

10 = Saturday Midday Peak Hour Volumes

N

Exhibit 3-4

County of Riverside Southwest Area Plan Roadway Classification



Legend:

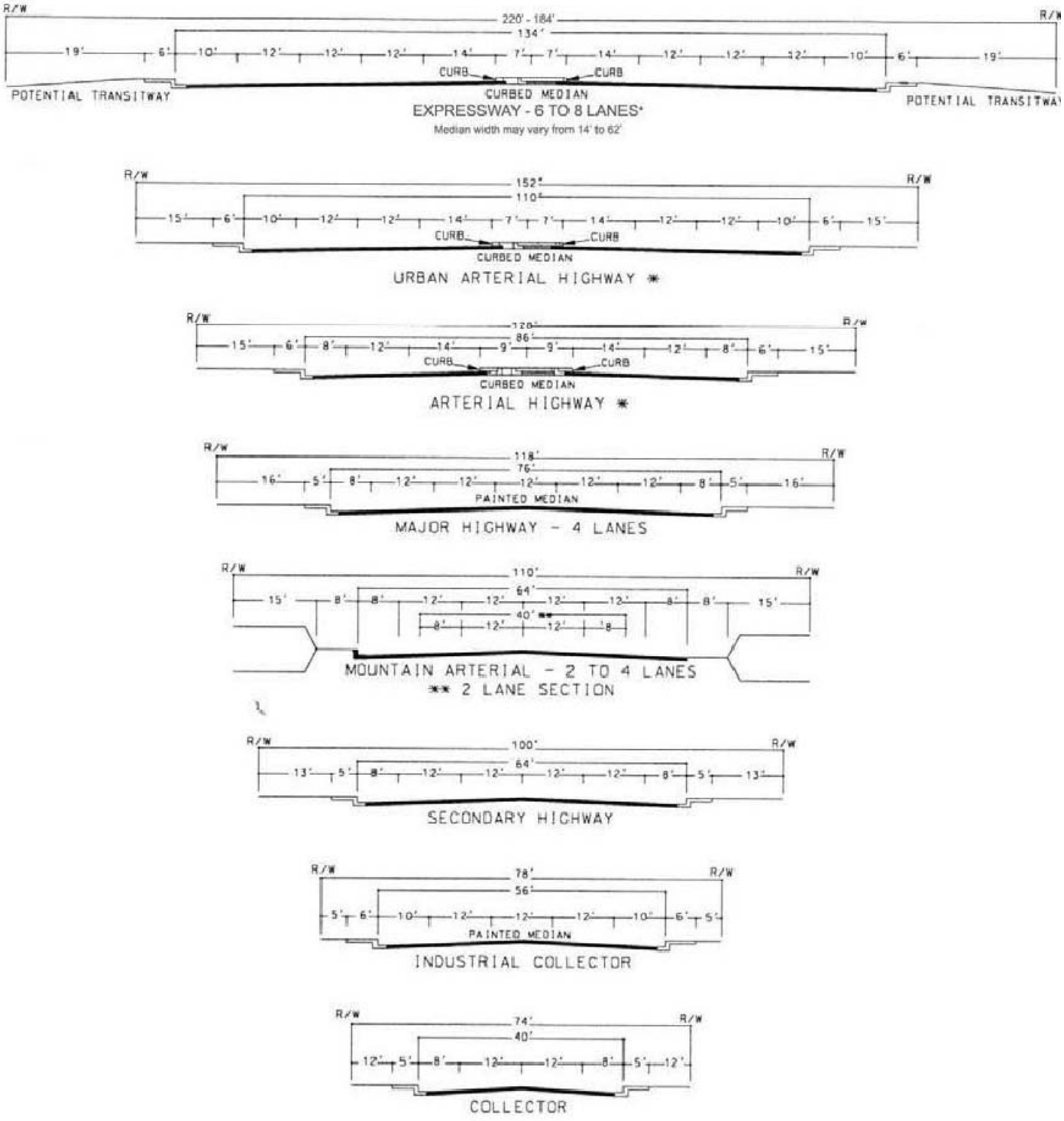
= Project Site

- Freeway (Variable ROW)
- Expressway (128' to 220' ROW)
- Urban Arterial (152' ROW)
- Arterial (128' ROW)
- Major (118' ROW)
- Secondary (100' ROW)
- Mountain Arterial 4 Ln (110' ROW)
- Mountain Arterial 2 Ln (110' ROW)
- Collector (74' ROW)
- Existing Interchange
- Proposed Interchange
- Winchester to Temecula CETAP
- Existing Bridge
- Proposed Bridge
- Highways
- Area Plan Boundary
- City Boundary
- Waterbodies

N

Exhibit 3-5

County of Riverside General Plan
Typical Roadway Cross-Sections



*IMPROVEMENTS MAY BE RECONFIGURED TO ACCOMMODATE EXCLUSIVE TRANSIT LANES OR ALTERNATIVE LANE ARRANGEMENTS. ADDITIONAL RIGHT OF WAY MAY BE REQUIRED AT INTERSECTIONS TO ACCOMMODATE. ULTIMATE IMPROVEMENTS FOR STATE HIGHWAYS SHALL CONFORM TO CALTRANS DESIGN STANDARDS.

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 rates for the proposed development are shown in Table 4-1 and are from the *Institute of Transportation Engineers (ITE) Trip Generation Manual* (11th Edition, 2021). This publication provides a comprehensive evaluation of trip generation rates for a variety of land uses.

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

As shown in Table 4-2, the proposed project is forecast to generate approximately 507 weekday daily trips which include approximately 26 weekday AM peak hour trips and approximately 507 weekday PM peak hour trips. Additionally, the proposed project is forecast to generate approximately 1,882 Saturday daily trips which include approximately 333 Saturday midday peak hour trips.

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 residential, 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, highways within the community, and existing traffic volumes.

The project trip distribution is shown on Exhibit 4-1.

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 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 on Exhibit 4-2 for weekday AM and PM peak hours and on Exhibit 4-3 for Saturday midday peak hours.

4.2 Background Traffic

4.2.1 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 two percent (2%) per year has been applied to the existing (2022) traffic volumes over a 1-year period to opening year 2023 conditions (i.e. 2% total growth).

4.2.2 Cumulative Projects Traffic

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

Table 4-3 shows the 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 on Exhibit 4-4.

Cumulative projects traffic volumes are shown on Exhibit 4-5 for weekday AM and PM peak hours and on Exhibit 4-6 for Saturday midday peak hours.

In reality, some of the cumulative projects may be downsized, may have already been partially constructed, or may not be developed by project opening year 2023. 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 account 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 two percent (2%) per year for project opening year (2023) 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 all the study intersections.

4.3 Planned Intersection Improvements

The County of Riverside is finalizing design plans to convert the intersection of Calle Contento at Rancho California Road, which currently operates as a cross-street stop, into a roundabout.

The existing intersection geometry will be reconfigured with the installation of the roundabout. It is understood the following is the current proposed lane geometries after installation of the roundabout: The southbound approach along Calle Contento is proposed to provide one (1) exclusive southbound right-turn lane and one (1) shared through/left-turn lane. The northbound approach along Calle Contento is proposed to provide one (1) shared left/through/right-turn lane. The eastbound approach along Rancho California Road is proposed to provide one (1) shared eastbound through/left-turn lane and one (1) shared eastbound through/right-turn lane. The westbound approach along Rancho California Road is proposed to provide one (1) shared westbound through/left-turn lane and one (1) shared westbound through/right-turn lane. Appropriate signage and striping should be installed.

The planned intersection improvements are provided in Exhibit 4-7.

4.4 Opening Year (2023) With Ambient Growth Without Project Conditions Traffic Volumes

Opening Year (2023) With Ambient Growth Without Project Conditions traffic volumes consist of one (1) year of annual growth on top of existing (2022) traffic volumes at two percent (2%) per year.

Opening Year (2023) With Ambient Growth Without Project Conditions for weekday AM and PM peak hours and the Saturday midday peak hour are shown on Exhibit 4-8 and Exhibit 4-9, respectively.

4.5 Opening Year (2023) With Ambient Growth With Project Conditions Traffic Volumes

Opening Year (2023) With Ambient Growth With Project Conditions traffic volumes consist of one (1) year of annual growth on top of existing (2022) traffic volumes at two percent (2%) per year, plus traffic generated by the proposed project.

Opening Year (2023) With Ambient Growth With Project Conditions for weekday AM and PM peak hours and the Saturday midday peak hour are shown on Exhibit 4-10 and Exhibit 4-11, respectively.

4.6 Opening Year (2023) With Ambient Growth & Cumulative Projects Without Project Conditions Traffic Volumes

Opening Year (2023) With Ambient Growth & Cumulative Projects Without Project Conditions traffic volumes consist of one (1) year of annual growth on top of existing (2022) traffic volumes at two percent (2%) per year, plus traffic generated by the cumulative projects.

Opening Year (2023) With Ambient Growth & Cumulative Projects Without Project Conditions for weekday AM and PM peak hours and the Saturday midday peak hour are shown on Exhibit 4-12 and Exhibit 4-13, respectively.

4.7 Opening Year (2023) With Ambient Growth & Cumulative Projects With Project Conditions

Opening Year (2023) With Ambient Growth & Cumulative Projects With Project Conditions consist of one (1) year of annual growth on top of existing (2022) traffic volumes at two percent (2%) per year, plus traffic generated by the cumulative projects and traffic generated by the proposed project.

Opening Year (2023) With Ambient Growth With Project Conditions for weekday AM and PM peak hours and the Saturday midday peak hour are shown on Exhibit 4-14 and Exhibit 4-15, respectively.

Table 4-1
ITE Trip Generation Rates[1]

Land Use	ITE Code	Units[2]	Weekday							Saturday			
			AM Peak Hour			PM Peak Hour			Daily	Midday Peak Hour			Daily
			In	Out	Total	In	Out	Total		In	Out	Total	
General Light Industrial	110	TSF	0.65	0.09	0.74	0.09	0.56	0.65	4.87	0.37	0.37	0.74	0.69
Hotel	310	Rooms	0.26	0.20	0.46	0.30	0.29	0.59	7.99	0.40	0.32	0.72	8.07
Wine Tasting Room	970	TSF	1.45	0.62	2.07	3.65	3.66	7.31	45.96	17.15	19.35	36.50	203.48

[1] Source: *ITE Trip Generation Manual* (11th Edition, 2021).
[2] TSF = Thousand Square Feet.

Table 4-2
Project Trip Generation[1]

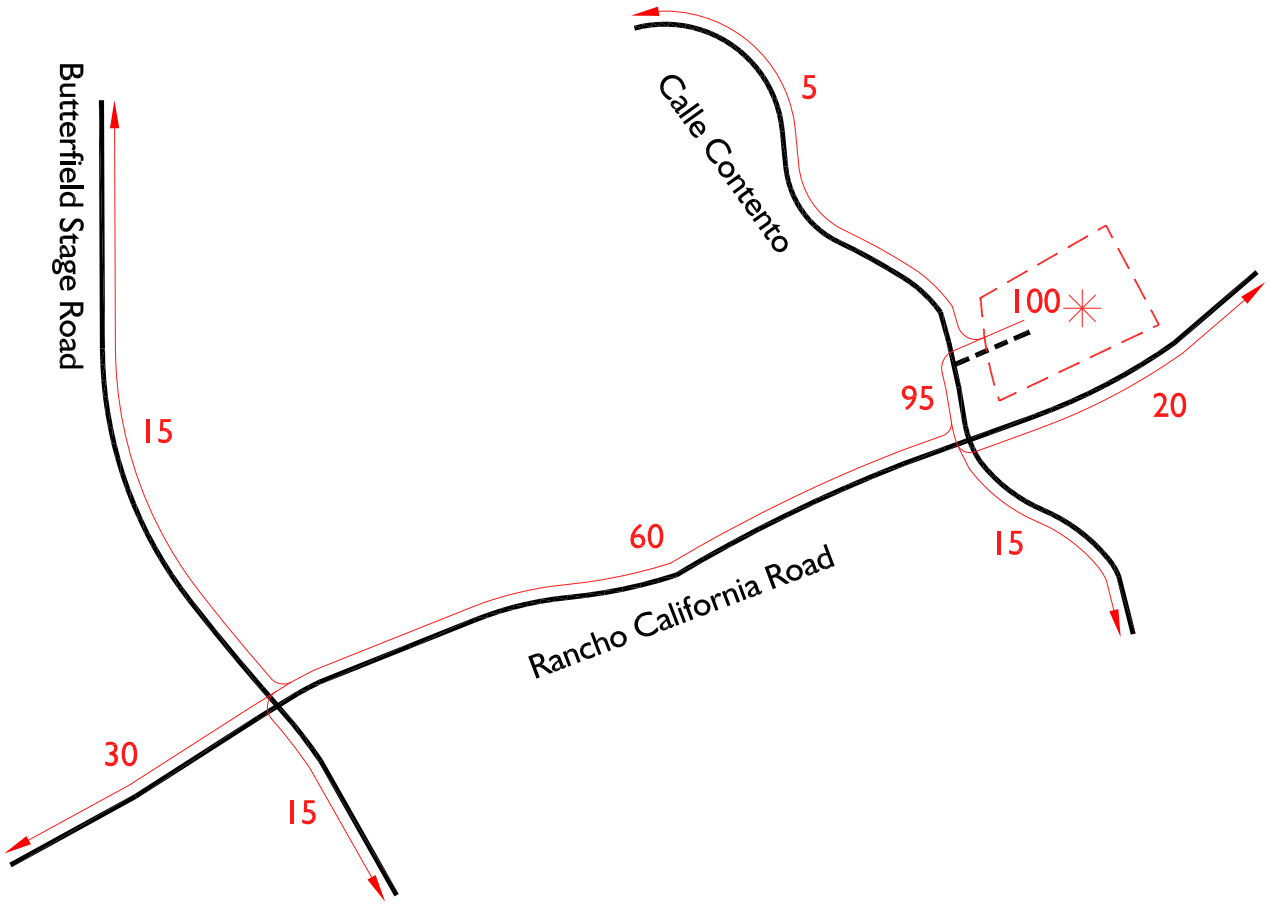
Land Use (ITE Code)	Quantity	Units[2]	Weekday							Saturday			
			AM Peak Hour			PM Peak Hour			Daily	Midday Peak Hour			Daily
			In	Out	Total	In	Out	Total		In	Out	Total	
General Light Industrial (110)	4.380	TSF	3	0	3	0	3	3	21	1	2	3	3
Hotel (310)	10	Rooms	3	2	5	3	3	6	80	4	3	7	81
Wine Tasting Room (970)	8.836	TSF	13	5	18	32	33	65	406	152	171	323	1,798
Total Trip Generation			**19**	**7**	**26**	**35**	**39**	**74**	**507**	**157**	**176**	**333**	**1,882**

[1] Source: *ITE Trip Generation Manual* (11th Edition, 2021).

[2] TSF = Thousand Square Feet.

Exhibit 4-1

Project Trip Distribution



Legend:

10 = Percent to/from Project

= Project Access Driveway

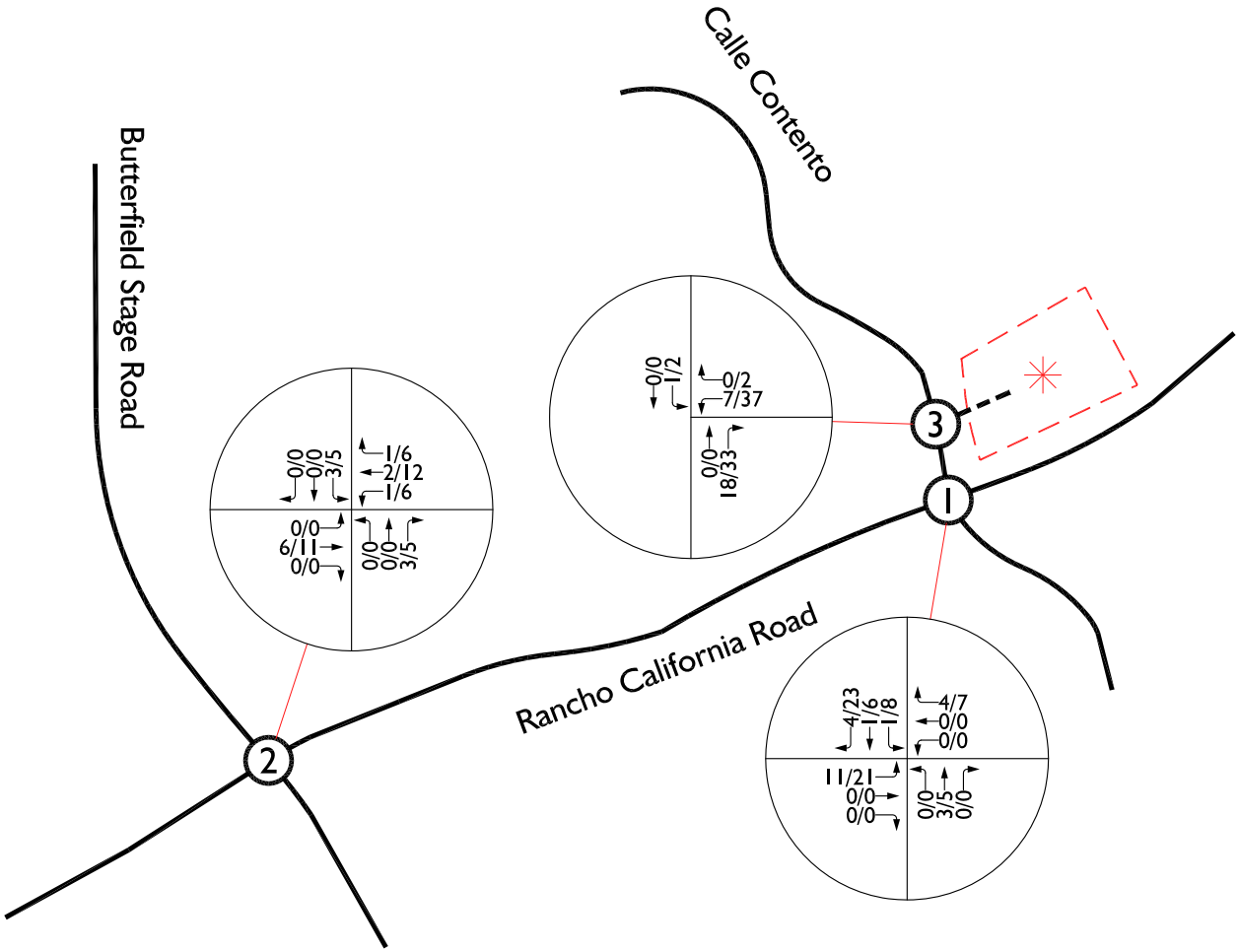
= Project Site

= Project Site Boundary

N

Exhibit 4-2

Project Traffic Volumes
Weekday



Legend:

(1) = Study Area Intersection

▪▪▪ = Project Access Driveway

✳ = Project Site

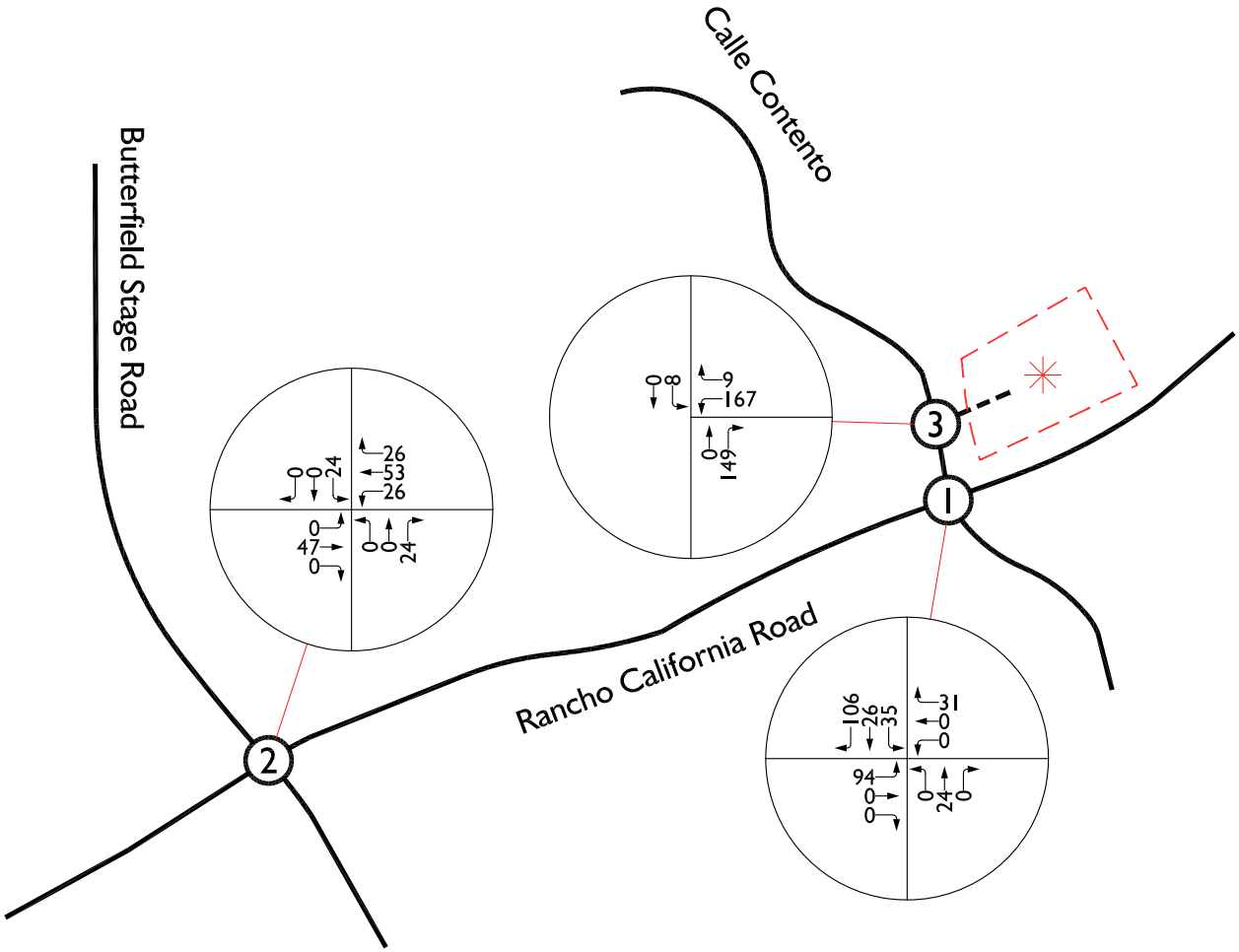
▪▪▪ = Project Site Boundary

10/20 = Weekday AM/PM Peak Hour Volumes

N

Exhibit 4-3

Project Traffic Volumes
Saturday



Legend:

(1) = Study Area Intersection

▪▪▪ = Project Access Driveway

✳ = Project Site

▪▪▪ = Project Site Boundary

10 = Saturday Midday Peak Hour Volumes

N

Table 4-3
Cumulative Projects Trip Generation[1]

ID No.	Jurisdiction	Project Name / Case Number	Land Use	Quantity	Units[2]	Weekday AM Peak Hour			Weekday PM Peak Hour			Weekday Daily	Saturday Midday Peak Hour			Saturday Daily
						In	Out	Total	In	Out	Total		In	Out	Total	
TAZ 1																
CR1	**County of Riverside**	PPT210141	Wine Tasting Room	3.500	TSF	5	2	7	13	13	26	161	60	68	128	712
CR2	**County of Riverside**	PPT200007	Hotel	6.000	Rooms	2	1	3	2	2	4	48	2	2	4	48
CR3	**County of Riverside**	PPT210132	Wine Tasting Room	6.970	TSF	10	4	14	25	26	51	320	119	135	254	1,418
CR4	**County of Riverside**	PP25893	Wine Tasting Room	3.154	TSF	5	2	7	11	12	23	145	54	61	115	641
CR5	**County of Riverside**	PP26064	-- [3]	--	--	22	14	36	41	40	81	696	148	162	310	1,904
CR6	**County of Riverside**	PPT220006	-- [4]	8.397	TSF	20	14	34	29	27	56	512	114	126	240	1,476
TAZ 1 Total						64	37	101	121	120	241	1,882	497	554	1,051	6,199
TAZ 2																
CR7	**County of Riverside**	PP26225R01	Wine Tasting Room	1.386	TSF	2	1	3	5	5	10	64	24	27	51	283
TAZ 2 Total						2	1	3	5	5	10	64	24	27	51	283
TAZ 3																
CR8	**County of Riverside**	TR37254	Single Family Detached Housing	8	DU	1	5	6	5	3	8	75	4	3	7	76
TAZ 3 Total						1	5	6	5	3	8	75	4	3	7	76
TAZ 4																
CR9	**County of Riverside**	PP25740	-- [5]	--	--	6	4	10	10	10	20	166	41	47	88	530
TAZ 4 Total						6	4	10	10	10	20	166	41	47	88	530
TAZ 5																
CR10	**County of Riverside**	CUP03707	-- [6]	--	--	118	71	189	128	126	254	2,848	383	429	812	5,642
CR11	**County of Riverside**	PPT210017	-- [7]	--	--	8	4	12	15	15	30	229	59	66	125	740
TAZ 5 Total						126	75	201	143	141	284	3,077	442	495	937	6,382
TAZ 6																
CR12	**County of Riverside**	PUP00786R1	High School	500	Students	177	83	260	34	36	70	970	38	22	60	340
TAZ 6 Total						**177**	**83**	**260**	**34**	**36**	**70**	**970**	**38**	**22**	**60**	**340**
TAZ 7																
CR13	**County of Riverside**	PPT190036	Wine Tasting Room	2.196	TSF	3	2	5	8	8	16	101	37	43	80	448
CR14	**County of Riverside**	PPT180019	-- [8]	--	--	24	15	39	47	47	94	779	177	194	371	2,243
CR15	**County of Riverside**	Haven Winery	-- [9]		TSF	19	7	26	36	38	74	507	158	176	334	1,182
TAZ 7 Total						**46**	**24**	**70**	**91**	**93**	**184**	**1,387**	**372**	**413**	**785**	**3,873**
TAZ 8																
T1	**City of Temecula**	Sommer's Bend Project	-- [10]	1,506	DU	247	688	935	785	465	1,250	12,875	650	559	1,209	12,938
TAZ 8 Total						**247**	**688**	**935**	**785**	**465**	**1,250**	**12,875**	**650**	**559**	**1,209**	**12,938**
Total Cumulative Projects Trip Generation						***669***	***917***	***1,586***	***1,194***	***873***	***2,067***	***20,496***	***2,068***	***2,120***	***4,188***	***30,621***

[1] Cumulative Projects information provided by the County of Riverside.

[2] DU = Dwelling Units.
TSF = Thousand Square Feet.

[3] PP26064 consists of 7,650 square foot wine tasting room and 43 room hotel

[4] PPT220006 consists of 5,899 square foot wine tasting room and 2,498 square foot high turnover sit down restaurant

[5] PP25740 consists of 2,258 square foot wine tasting room and 638 square foot high turnover sit down restaurant

[6] CUP03707 consists of 16,700 square foot and retail, 10,600 square foot spa, 11,200 square foot restaurant, 134 room hotel, 46 dwelling units cottages/wedding suite, and 7,700 square foot amphitheater.

[7] PPT210017 consists of 3,241 square foot wine tasting room and 10 room hotel

[8] PPT180019 consists of 9,282 square foot wine tasting room and 44 room hotel

[9] Haven Winery Project consists of 8,836 square feet of wine-tasting room, 10 room hotel, and 4,380 general light industrial.

[10] Somm'er Bend Project consists of 1,247 dwelling units single family housing and 259 dwelling units senior adult housing

Exhibit 4-4

Cumulative Projects Location Map

Legend:

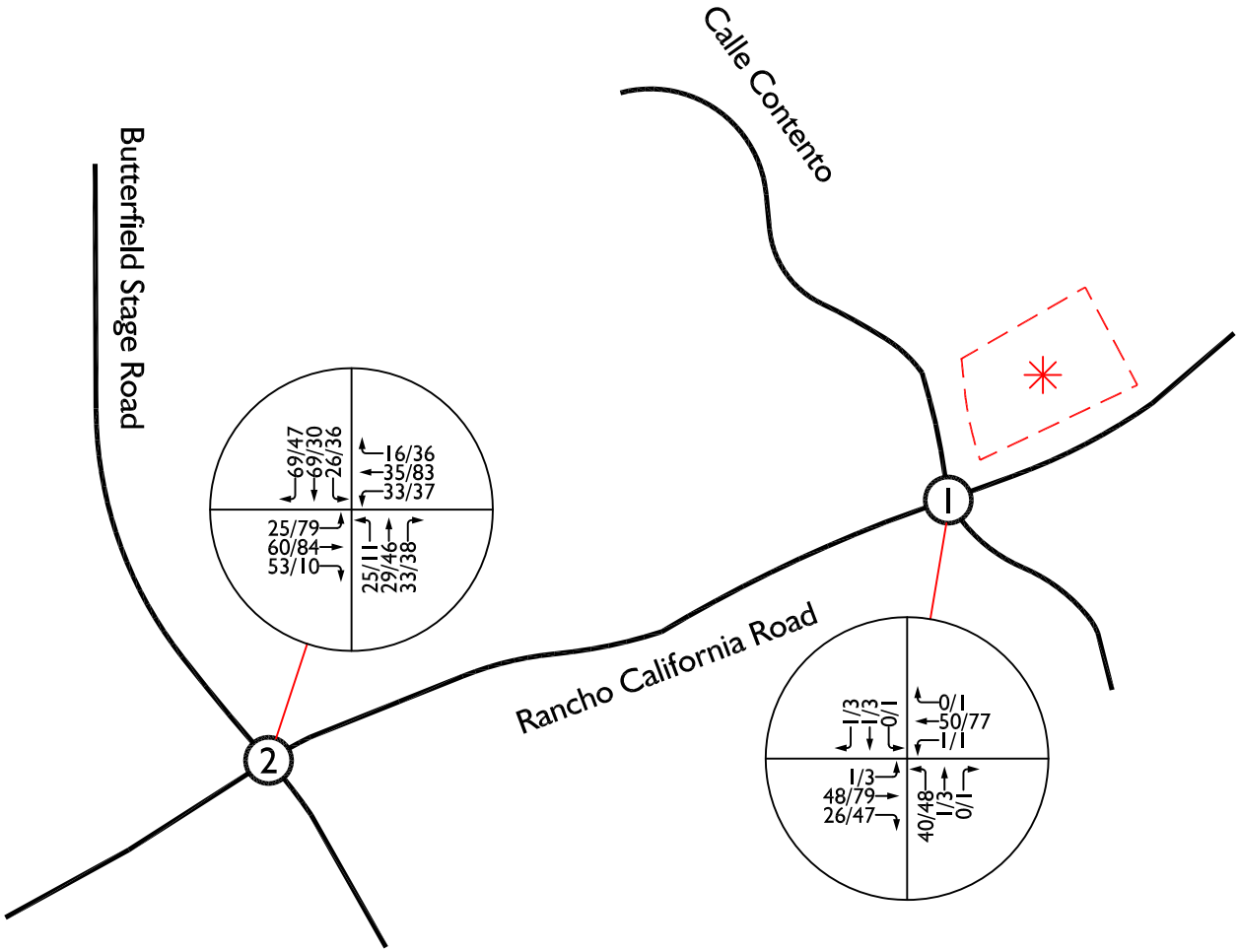
= Project Site
= TAZ 1 Cumulative Projects
= TAZ 2 Cumulative Projects
= TAZ 3 Cumulative Projects
= TAZ 4 Cumulative Projects
= TAZ 5 Cumulative Projects
= TAZ 6 Cumulative Projects
= TAZ 7 Cumulative Projects
= TAZ 8 Cumulative Projects

NOTE: Additional information and detail about the cumulative projects is provided in Table 4-3.

N

Exhibit 4-5

Cumulative Projects Traffic Volumes Weekday



Legend:

(1) = Study Area Intersection

= Project Site

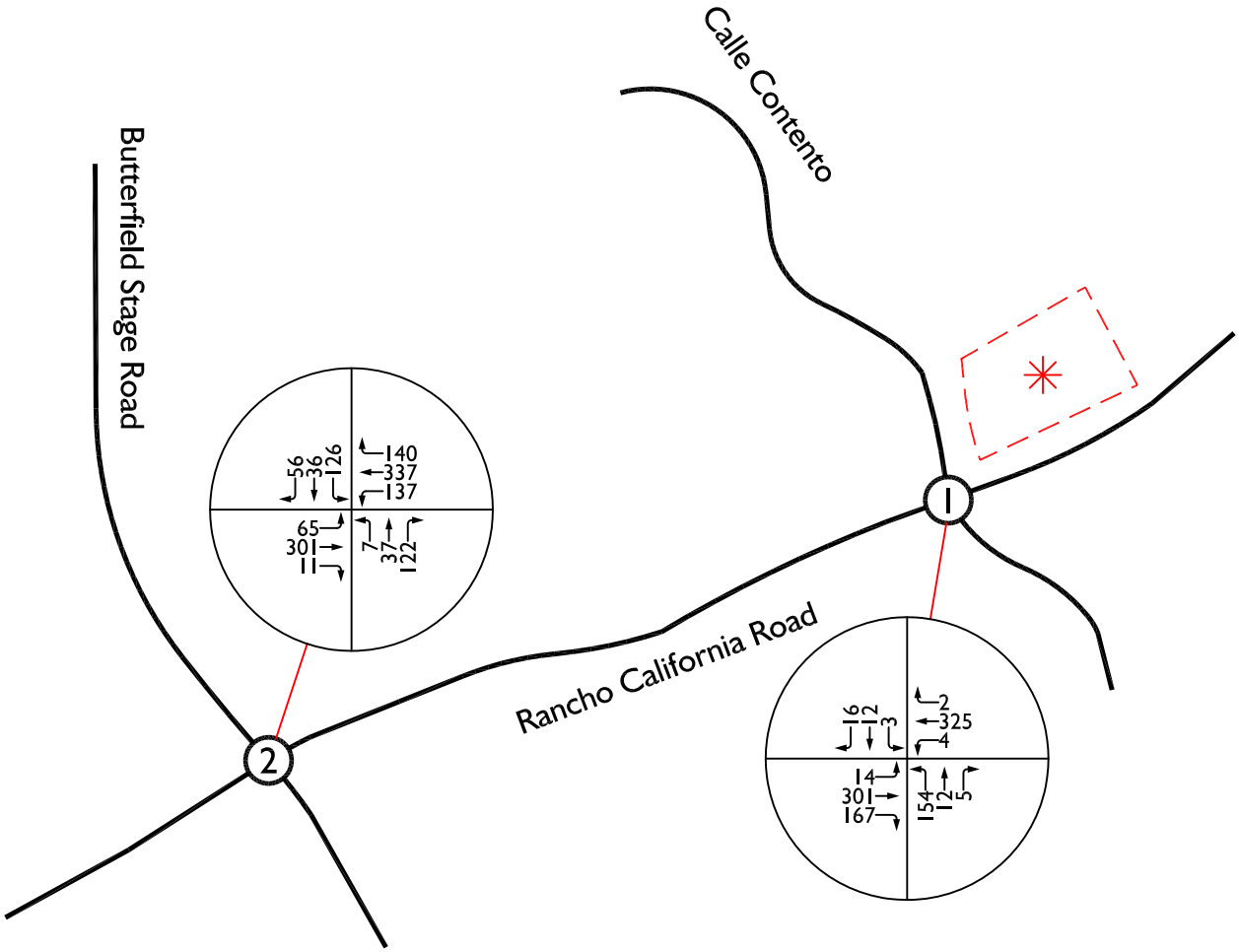
= Project Site Boundary

10/20 = Weekday AM/PM Peak Hour Volumes

N

Exhibit 4-6

Cumulative Projects Traffic Volumes
Saturday



Legend:

(1) = Study Area Intersection

= Project Site

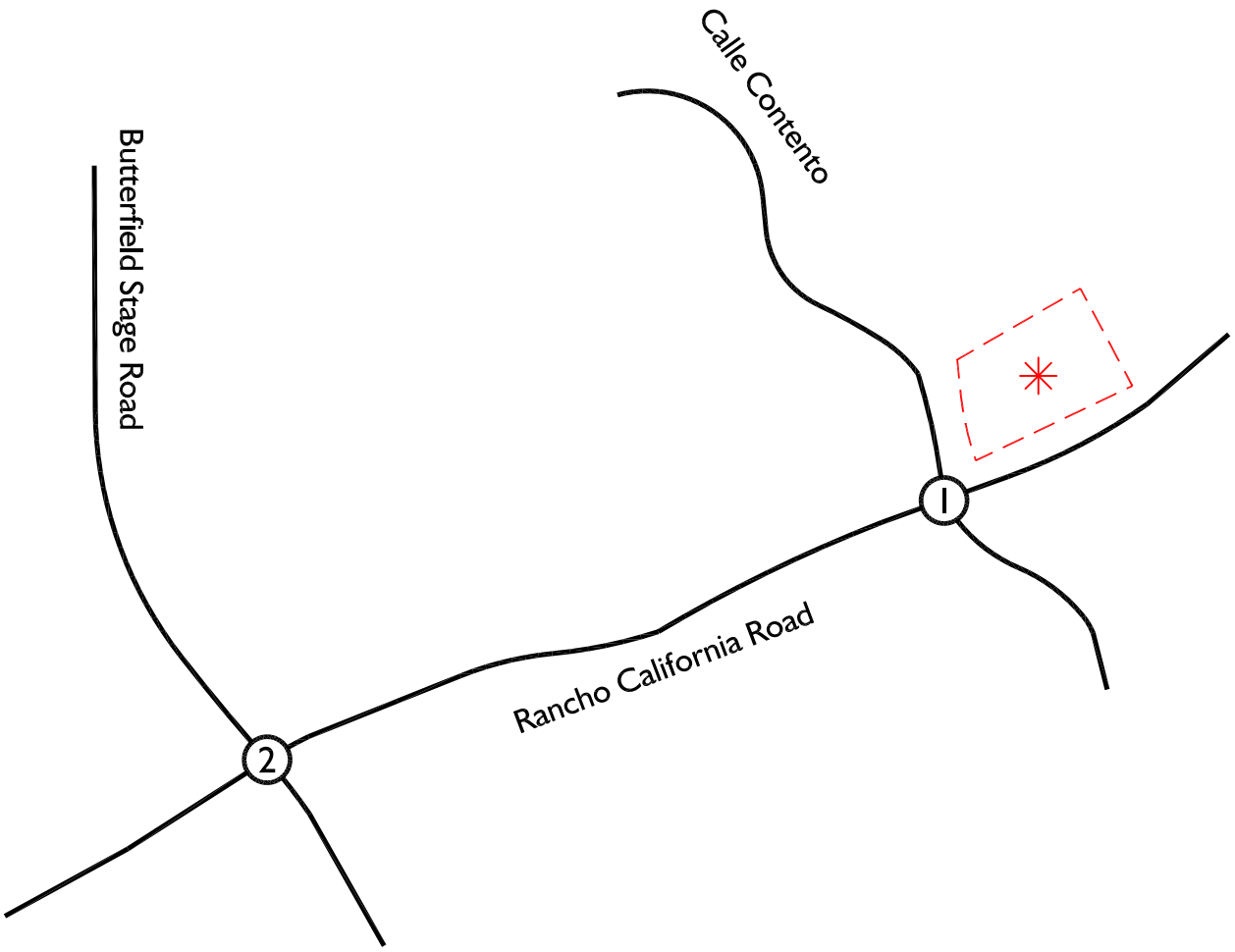
= Project Site Boundary

10 = Saturday Midday Peak Hour Volumes

N

Exhibit 4-7

Planned Intersection Improvements



	Existing Conditions		Opening Year Conditions	
1. Calle Contento (NS) & Rancho California Road (EW)			R	

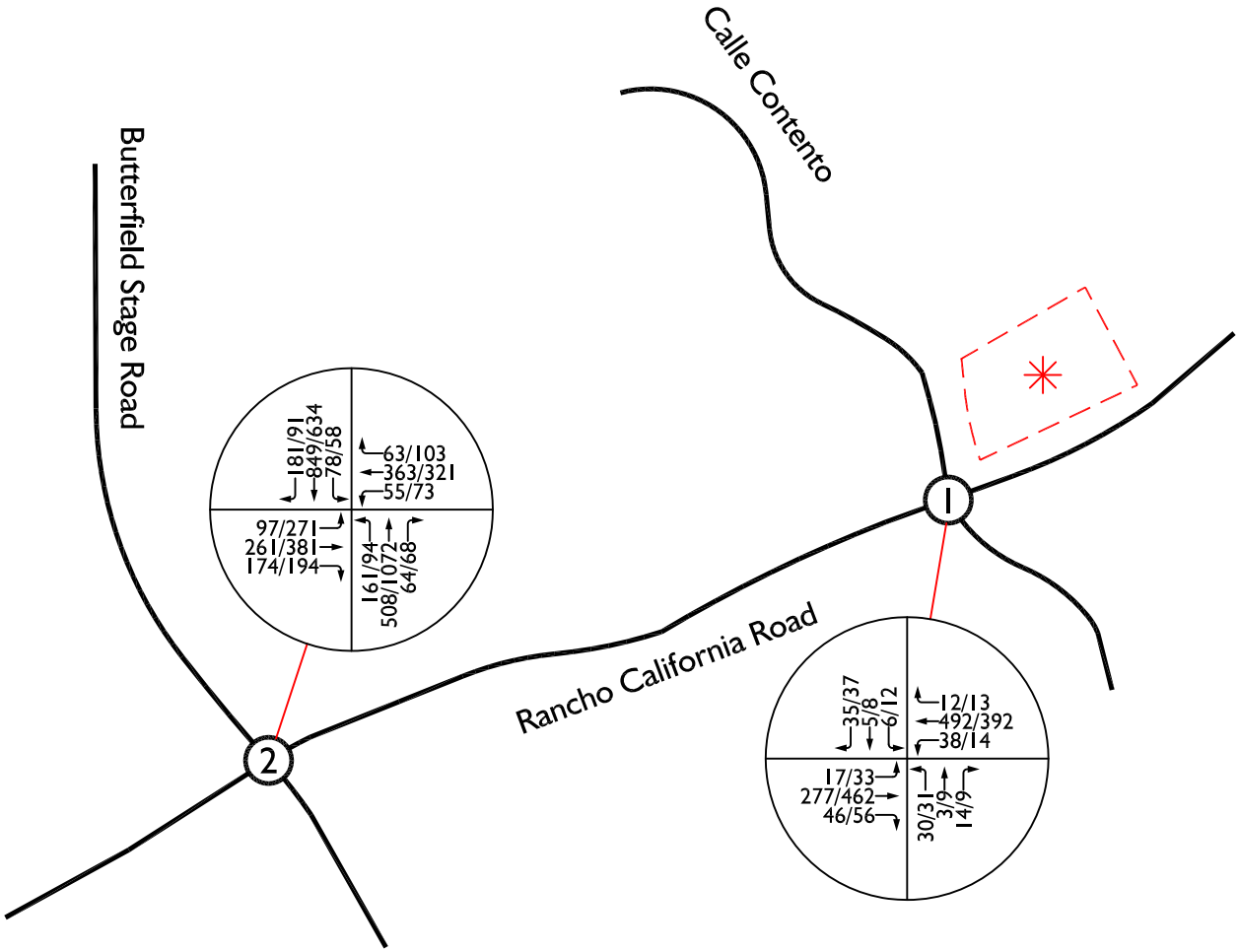
Legend:

- (1) = Study Area Intersection
- = Project Site Boundary
- = Project Site
- (R) = Roundabout
- = Stop Sign
- = Planned Intersection Improvements

N

Exhibit 4-8

Opening Year With Ambient Growth Without Project Conditions Traffic Volumes Weekday



Legend:

(1) = Study Area Intersection

= Project Site

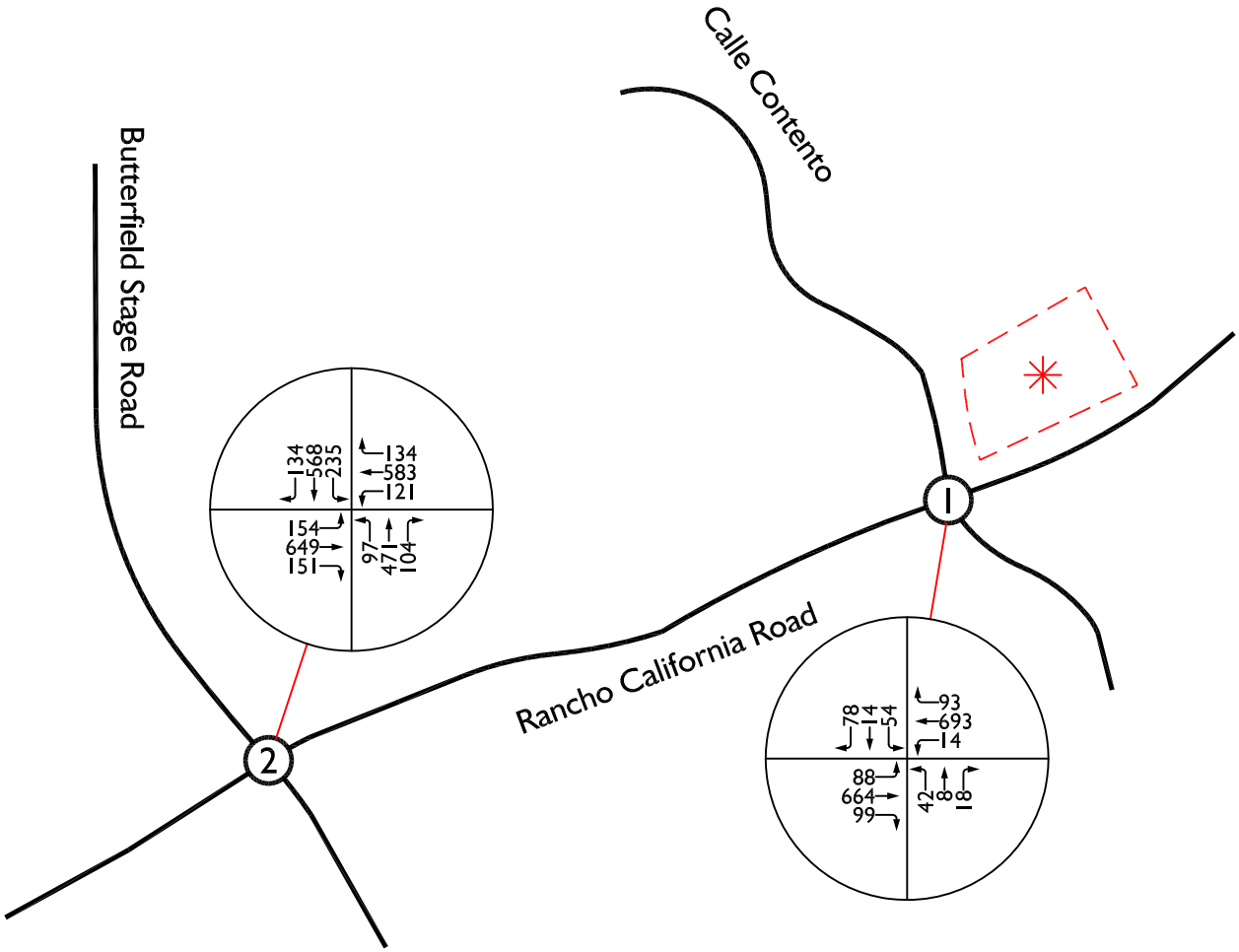
= Project Site Boundary

10/20 = Weekday AM/PM Peak Hour Volumes

N

Exhibit 4-9

Opening Year With Ambient Growth Without Project Conditions Traffic Volumes Saturday



Legend:

(1) = Study Area Intersection

= Project Site

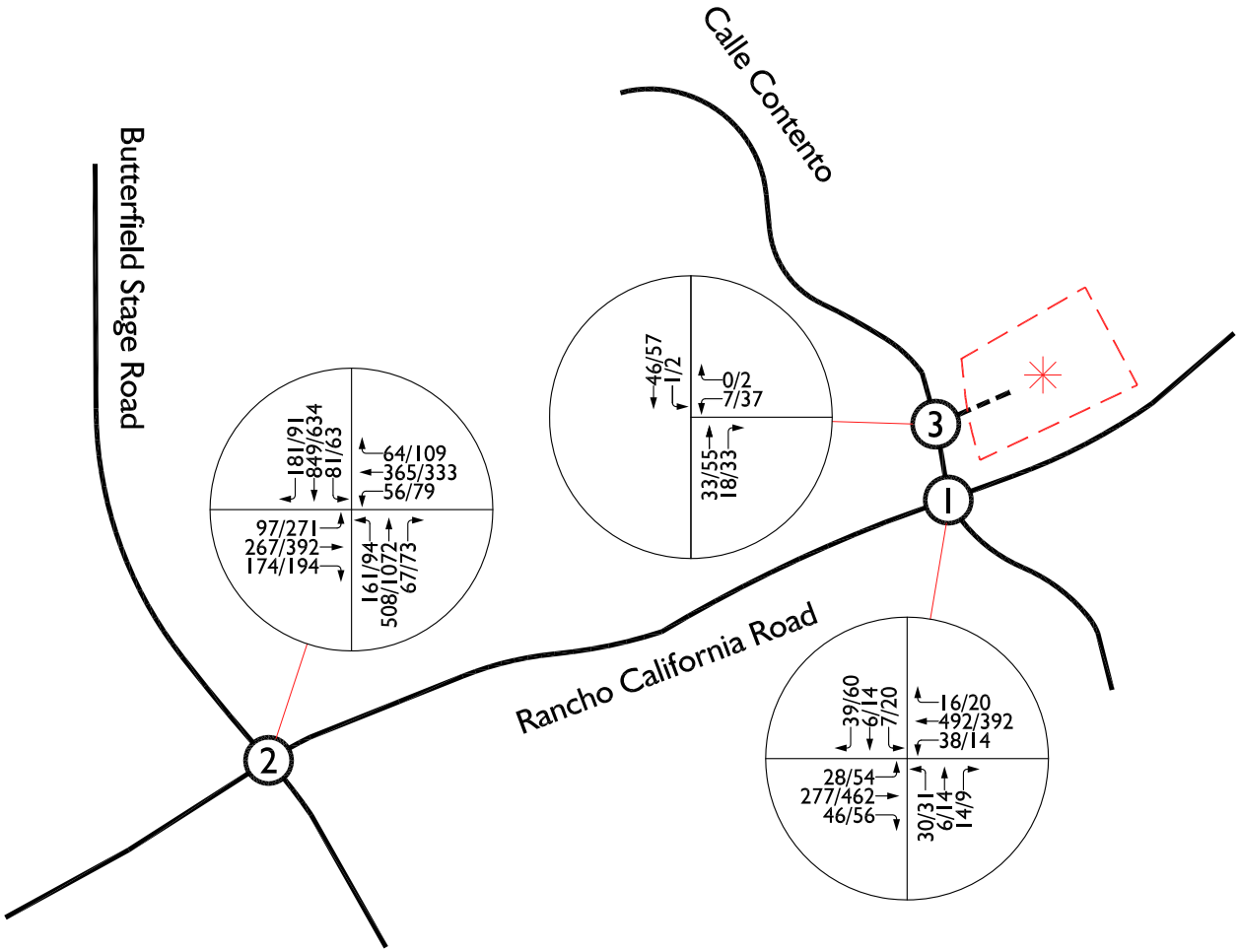
= Project Site Boundary

10 = Saturday Midday Peak Hour Volumes

N

Exhibit 4-10

Opening Year With Ambient Growth With Project Conditions Traffic Volumes Weekday



Legend:

(1) = Study Area Intersection

▪▪▪ = Project Access Driveway

✳ = Project Site

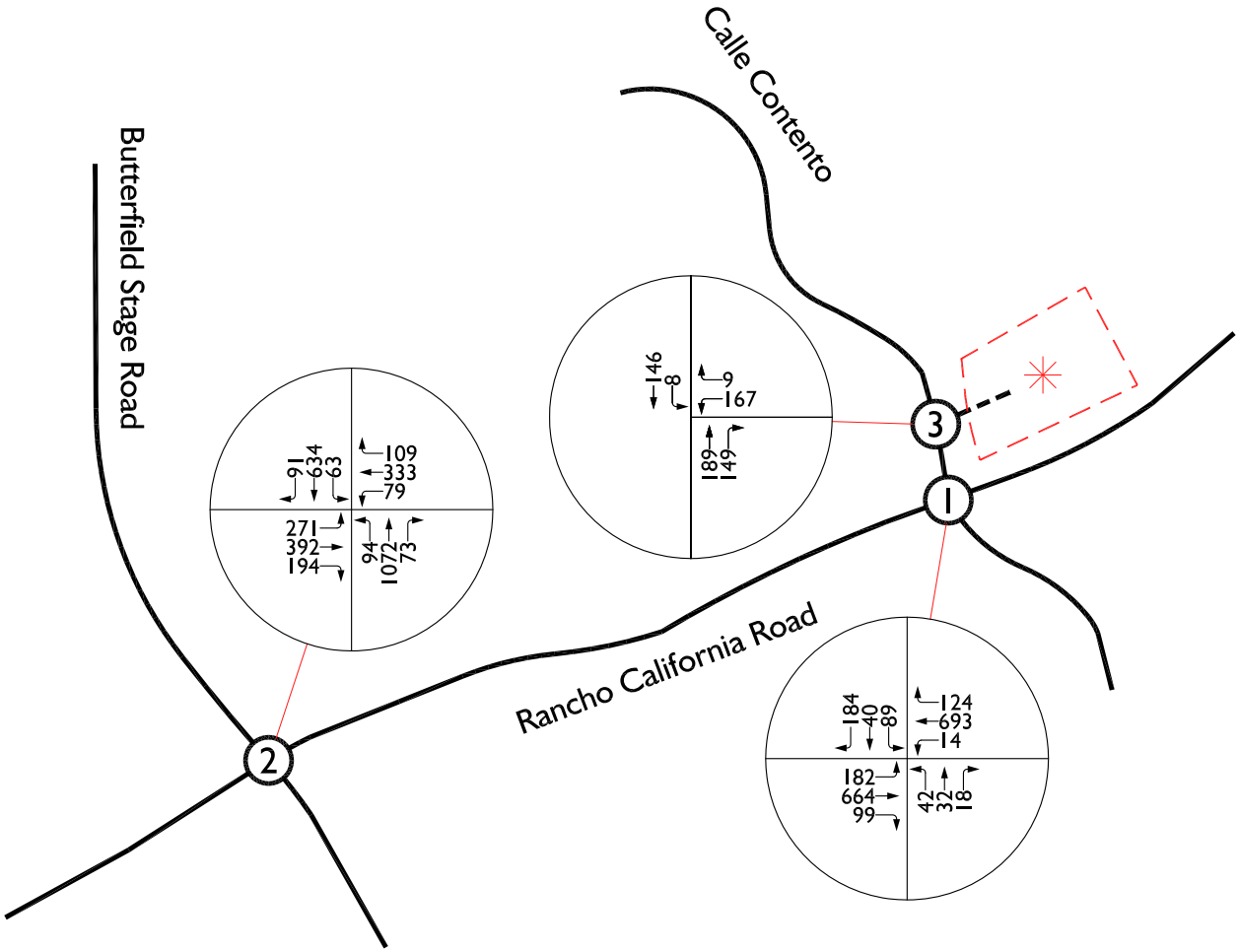
▪▪▪ = Project Site Boundary

10/20 = Weekday AM/PM Peak Hour Volumes

N

Exhibit 4-11

Opening Year With Ambient Growth With Project Conditions Traffic Volumes Saturday



Legend:

(1) = Study Area Intersection

▪▪▪ = Project Access Driveway

✳ = Project Site

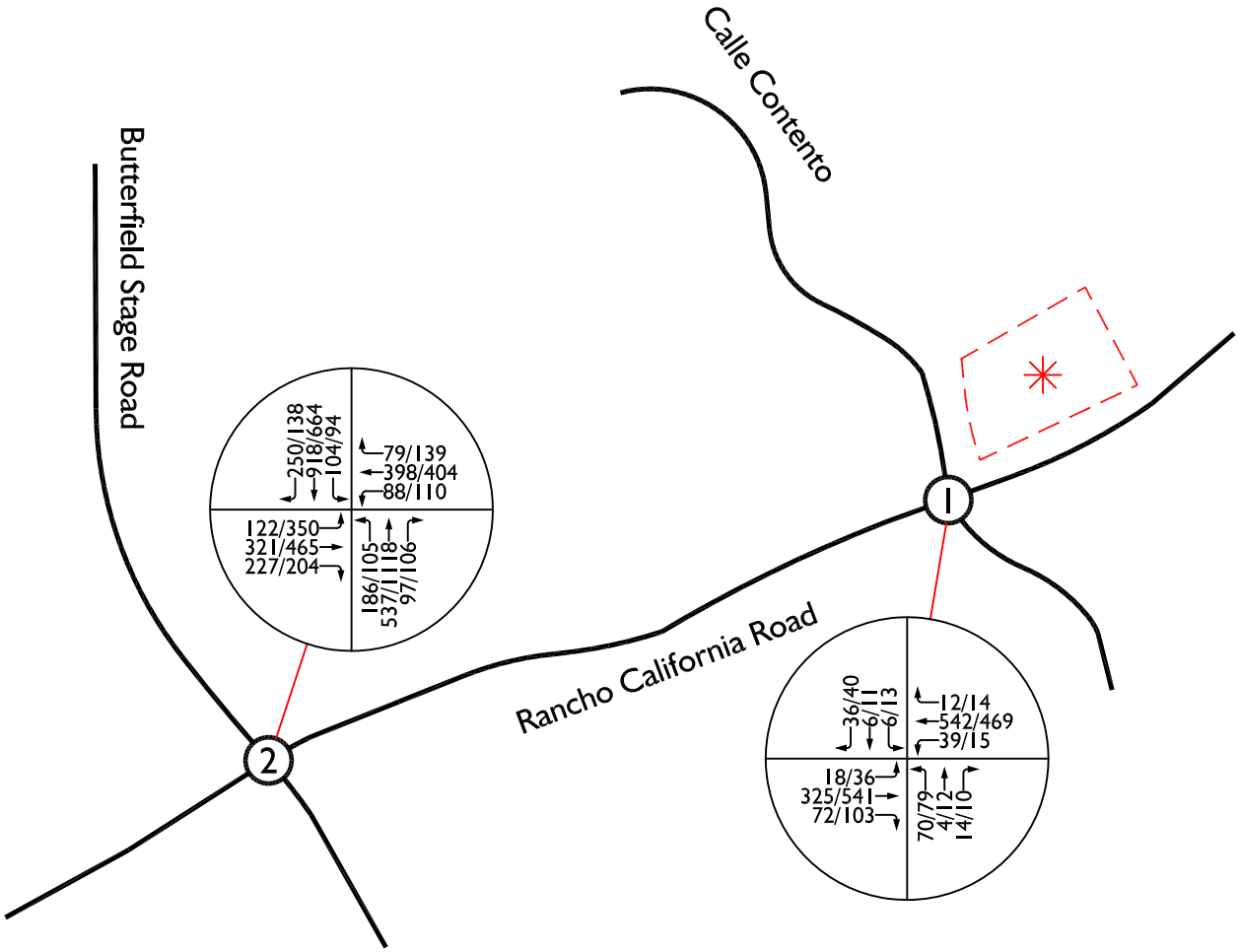
▪▪▪ = Project Site Boundary

10 = Saturday Midday Peak Hour Volumes

N

Exhibit 4-12

Opening Year With Ambient Growth & Cumulative Projects Without Project Conditions Traffic Volumes Weekday



Legend:

(1) = Study Area Intersection

= Project Site

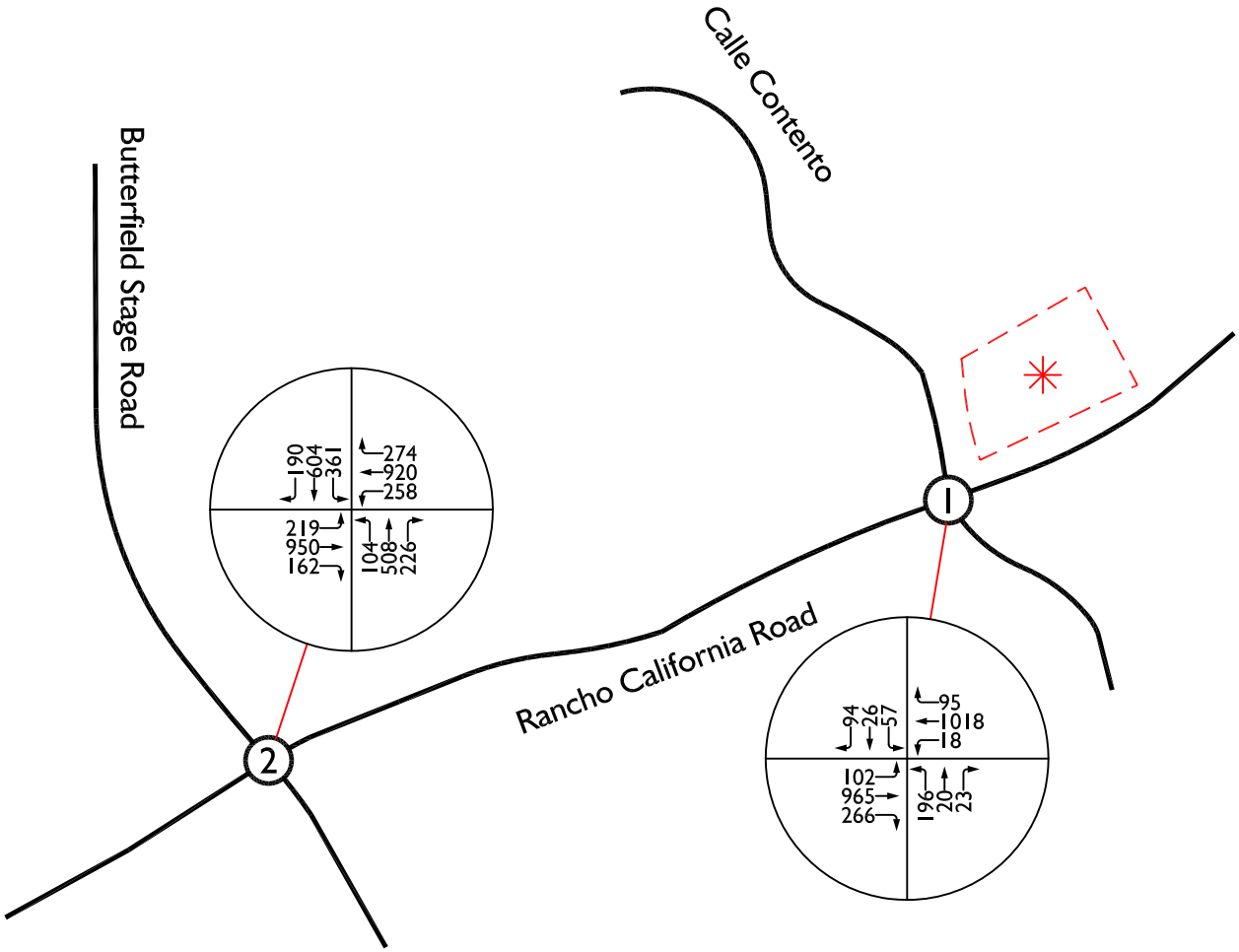
= Project Site Boundary

10/20 = Weekday AM/PM Peak Hour Volumes

N

Exhibit 4-13

Opening Year With Ambient Growth & Cumulative Projects Without Project Conditions Traffic Volumes Saturday



Legend:

(1) = Study Area Intersection

= Project Site

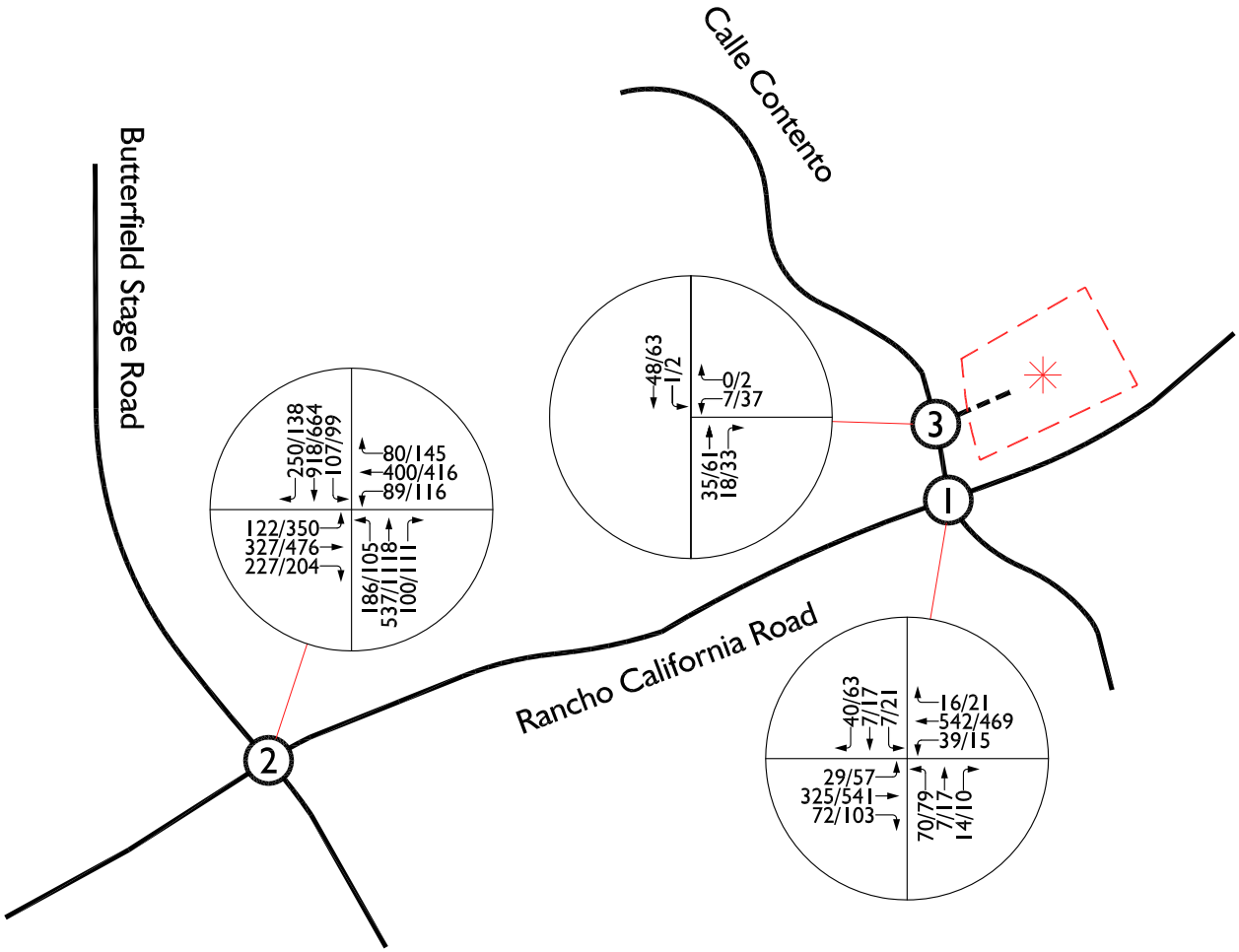
= Project Site Boundary

10 = Saturday Midday Peak Hour Volumes

N

Exhibit 4-14

Opening Year With Ambient Growth & Cumulative Projects With Project Conditions Traffic Volumes Weekday



Legend:

(1) = Study Area Intersection

▪▪▪ = Project Access Driveway

✳ = Project Site

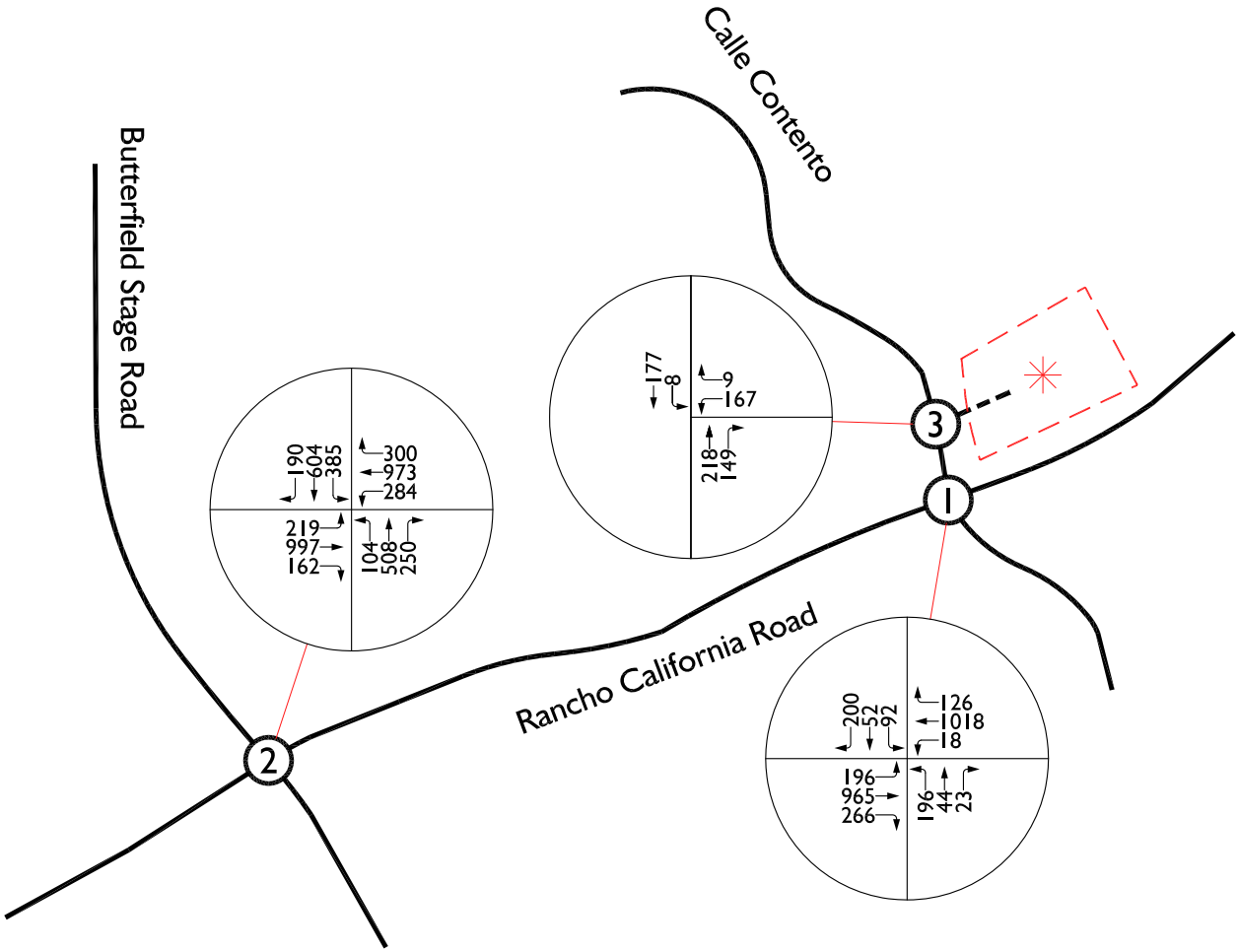
▪▪▪ = Project Site Boundary

10/20 = Weekday AM/PM Peak Hour Volumes

N

Exhibit 4-15

Opening Year With Ambient Growth & Cumulative Projects With Project Conditions Traffic Volumes Saturday



Legend:

(1) = Study Area Intersection

▪▪▪ = Project Access Driveway

✳ = Project Site

▪▪▪ = Project Site Boundary

10 = Saturday Midday Peak Hour Volumes

N

5.0 Study Intersection Peak Hour LOS Analysis

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

Based on the impact criteria above, improvements are identified for any key study intersections deemed to be impacted with the proposed Project. If an intersection is:

- Operating at an acceptable LOS D or better without project traffic, and the addition of project traffic causes the intersection to degrade to an LOS E or F, improvements shall be identified to improve operations to acceptable LOS D or better.

- Already operating at an LOS E or F, improvements shall be identified to improve operations to pre-project LOS and delay.

5.1 Existing Conditions Level of Service

Existing Conditions LOS calculations for the study intersections are shown in Table 5-1 and are based upon the existing weekday AM and PM peak hours traffic volumes shown on Exhibit 3-2, existing Saturday peak hour traffic volumes shown on Exhibit 3-3, and the existing geometry shown on Exhibit 3-1.

As shown in Table 5-1, all study intersections are currently operating at an acceptable LOS (LOS D or better) during the peak hours for Existing Conditions with the exception of the following one (1) study intersection, which is currently operating at a deficient LOS:

- Int. #1 – Calle Contento (NS) / Rancho California Road (EW) – PM Peak Hour and Saturday Midday Peak Hour

Detailed LOS analysis worksheets for Existing Conditions are included in Appendix C.

5.2 Opening Year (2023) With Ambient Growth Without Project Conditions Level of Service

Opening Year (2023) With Ambient Growth Without Project Conditions LOS calculations for the three (3) study intersections are shown in Table 5-2 and are based upon the Opening Year (2023) With Ambient Growth Without Project Conditions traffic volumes

shown on Exhibit 4-8 and Exhibit 4-9, respectively. It should be noted that this traffic scenario assumes the planned roundabout at the intersection of Calle Contento at Rancho California Road in the background.

As shown in Table 5-2, all study intersections are forecast to operate at an acceptable LOS (LOS D or better) during the peak hours for Opening Year (2023) With Ambient Growth Without Project Conditions.

Detailed LOS analysis worksheets for Opening Year (2023) With Ambient Growth Without Project Conditions are included in Appendix D.

5.3 Opening Year (2023) With Ambient Growth With Project Conditions Level of Service

Opening Year (2023) With Ambient Growth With Project Conditions LOS calculations for the three (3) study intersections are also shown in Table 5-2 and are based upon the Opening Year (2023) With Ambient Growth With Project Conditions traffic volumes shown on Exhibit 4-10 and Exhibit 4-11, respectively. It should be noted that this traffic scenario assumes the planned roundabout at the intersection of Calle Contento at Rancho California Road in the background.

As shown in Table 5-2, all study intersections are forecast to operate at an acceptable LOS (LOS D or better) during the peak hours for Opening Year (2023) With Ambient Growth With Project Conditions.

Detailed LOS analysis worksheets for Opening Year (2023) With Ambient Growth With Project Conditions are included in Appendix E.

5.4 Opening Year (2023) With Ambient Growth & Cumulative Projects Without Project Conditions Level of Service

Opening Year (2023) With Ambient Growth & Cumulative Projects Without Project Conditions LOS calculations for the three (3) study intersections are shown in Table 5-3 and are based upon the Opening Year (2023) With Ambient Growth & Cumulative Projects Without Project Conditions traffic volumes shown on Exhibit 4-12 and Exhibit 4-13, respectively. It should be noted that this traffic scenario assumes the planned roundabout at the intersection of Calle Contento at Rancho California Road in the background.

As shown in Table 5-3, all study intersections are forecast to operate at an acceptable LOS (LOS D or better) during the peak hours for Opening Year (2023) With Ambient Growth & Cumulative Projects Without Project Conditions, with the exception of the following study intersection, which is forecast to operate at a deficient LOS:

- Int. #2 – Butterfield Stage Road (NS) / Rancho California Road (EW) – Saturday Midday Peak Hour Only

Detailed LOS analysis worksheets for Opening Year (2023) With Ambient Growth & Cumulative Without Project Conditions are included in Appendix F.

5.5 Opening Year (2023) With Ambient Growth & Cumulative Projects With Project Conditions Level of Service

Opening Year (2023) With Ambient Growth & Cumulative Projects With Project Conditions LOS calculations for the three (3) study intersections are also shown in Table 5-3 and are based upon the Opening Year (2023) With Ambient Growth & Cumulative Projects With Project Conditions traffic volumes shown on Exhibit 4-14 and Exhibit 4-15, respectively. It should be noted that this traffic scenario assumes the planned roundabout at the intersection of Calle Contento at Rancho California Road in the background.

As shown in Table 5-3, all study intersections are forecast to operate at an acceptable LOS (LOS D or better) during the peak hours for Opening Year (2023) With Ambient Growth & Cumulative Projects With Project Conditions, with the exception of the following study intersections, which is forecast to operate at a deficient LOS:

- Int. #2 – Butterfield Stage Road (NS) / Rancho California Road (EW) – Saturday Midday Peak Hour Only

As such, the proposed project is required to contribute to improvements only at key study intersection #2. The following recommended improvements have been identified:

Recommended Improvement #1

Int. #2 – Butterfield Stage Road (NS) / Rancho California Road (EW)

Restripe the westbound approach along Rancho California Road to provide an exclusive westbound right-turn lane. Modify the traffic signal timing to allow for a westbound right-turn-overlap phase.

Detailed LOS analysis worksheets for Opening Year (2023) With Ambient Growth & Cumulative Projects With Project Conditions are included in Appendix G. Detailed LOS analysis worksheets for Opening Year (2023) With Ambient Growth & Cumulative Projects With Project Conditions With Improvements are included in Appendix H.

Recommended improvements are illustrated in Exhibit 5-1.

5.6 Project Fair-Share Contribution

Fair-share contribution is based on project trip contributions relative to the amount of overall growth from existing traffic conditions. Fair-share contributions percentages are provided in Table 5-4.

As shown in Table 5-4, the project fair share percentages for Opening Year (2023) With Ambient Growth & Cumulative Projects With Project Conditions traffic conditions are listed below:

- Int. #2 – Butterfield Stage Road (NS) / Rancho California Road (EW) – 12.2% (Saturday Midday Peak Hour)

Table 5-1
Study Intersection LOS Analysis Summary
Existing Conditions

	Study Intersection	Traffic Control[1]	Methodology	Delay (sec/veh)[2,3]			Level of Service		
				AM	PM	SAT MD	AM	PM	SAT MD
1.	Calle Contento (NS) / Rancho California Road (EW)	CSS	HCM	24.7	**35.1**	**264.3**	C	**E**	**F**
2	Butterfield Stage Road (NS) / Rancho California Road (EW)	TS	HCM	33.6	31.6	41.4	C	C	D
3	Calle Contento (NS) / Site Access (EW)	CSS	HCM	*Does Not Currently Exist*					

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

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

[3] HCM Analysis Software: PTV Vistro, Version 2022

Table 5-2
Study Intersection LOS Analysis Summary
Project Opening Year (2023) With Ambient Growth With Project Conditions

	Study Intersection	Traffic Control[1]	Methodology	Delay (sec/veh)[2,3]			Level of Service			Delay (sec/veh)[2,3]			Increase in Delay			Level of Service			Requires LOS Improvement?		
				AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD
1.	Calle Contento (NS) / Rancho California Road (EW)	R	HCM	4.3	4.6	6.2	A	A	A	4.4	4.8	7.6	0.1	0.2	1.4	A	A	A	No	No	No
2	Butterfield Stage Road (NS) / Rancho California Road (EW)	TS	HCM	33.9	31.9	42.0	C	C	D	34.0	32.4	45.7	0.1	0.5	3.7	C	C	D	No	No	No
3	Calle Contento (NS) / Site Access (EW)	CSS	HCM	*Does Not Currently Exist*						9.0	9.4	14.4	--	--	--	A	A	B	No	No	No

[1] R = Roundabout
CSS = Cross-Street Stop
TS = Traffic Signal

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

[3] HCM Analysis Software: PTV Vistro, Version 2022. Per the Highway Capacity Manual 6th Edition (HCM 6), overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control, and roundabouts. 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.

Table 5-3
Study Intersection LOS Analysis Summary
Project Opening Year (2023) With Ambient Growth & Cumulative Projects With Project Conditions

	Study Intersection	Traffic Control[1]	Methodology	Delay (sec/veh)[2,3]			Level of Service			Delay (sec/veh)[2,3]			Increase in Delay			Level of Service			Requires LOS Improvement?		
				AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD
1.	Calle Contento (NS) / Rancho California Road (EW)	R	HCM	4.7	5.4	11.5	A	A	B	4.8	5.7	16.0	0.1	0.3	4.5	A	A	C	No	No	No
2	Butterfield Stage Road (NS) / Rancho California Road (EW)	TS	HCM	39.1	36.2	**82.7**	D	D	**F**	39.4	36.8	**98.5**	0.3	0.6	**15.8**	D	D	**F**	No	No	**Yes**
	With Improvements	TS	HCM	--	--	--	--	--	--	38.9	35.4	**82.2**	--	--	--	D	D	**F**	--	--	--
3	Calle Contento (NS) / Site Access (EW)	CSS	HCM	*Does Not Currently Exist*						9.0	9.5	15.6	--	--	--	A	A	C	No	No	No

[1] R = Roundabout
CSS = Cross-Street Stop
TS = Traffic Signal

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

[3] HCM Analysis Software: PTV Vistro, Version 2022. Per the Highway Capacity Manual 6th Edition (HCM 6), overall average intersection delay and level of service are shown for intersections with traffic signal or all-way stop control, and roundabouts. 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.

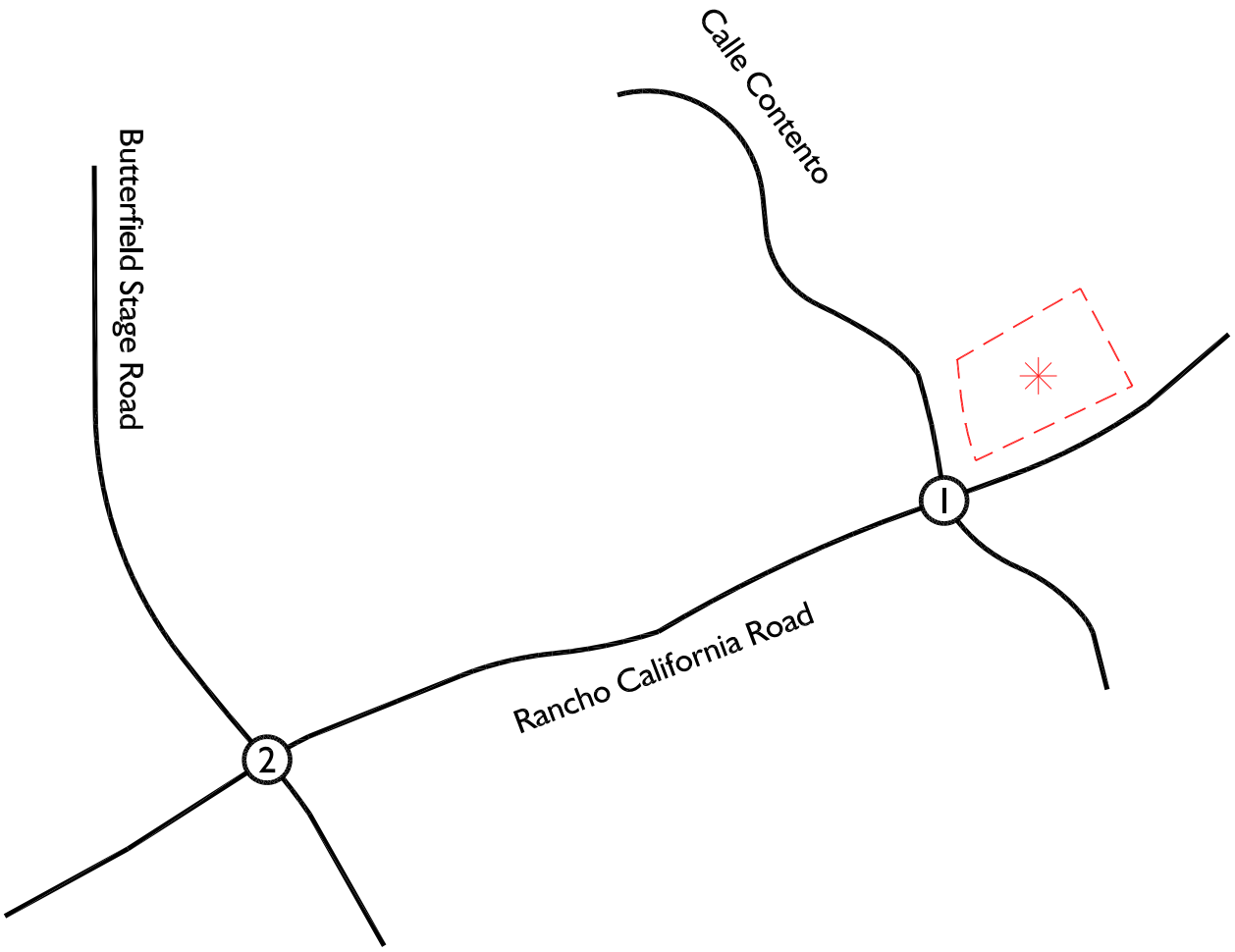
Table 5-4
Project Fair-Share Contribution Summary[1]
Opening Year (2023) With Ambient Growth & Cumululative Projects With Project Conditions

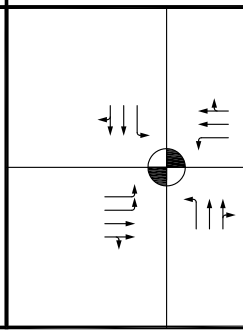
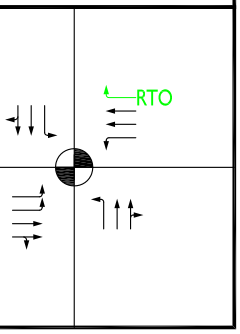
	Intersection	Existing Conditions Traffic			Opening Year (2023) With Ambient Growth & Cumululative Projects With Project Conditions Traffic			Growth in Traffic			Project Traffic			Project Fair-Share		
		AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD
2.	Butterfield Stage Road (NS) / Rancho California Road (EW)	Not Impacted Under This Time Period	Not Impacted Under This Time Period	3,334	Not Impacted Under This Time Period	Not Impacted Under This Time Period	4,976	Not Impacted Under This Time Period	Not Impacted Under This Time Period	1,642	Not Impacted Under This Time Period	Not Impacted Under This Time Period	200	Not Impacted Under This Time Period	Not Impacted Under This Time Period	**12.2%**

[1] Project Fair-Share Contribution represents the project's traffic contribution at each impacted study area intersection as a percentage of the overall growth in traffic for Opening Year With Ambient Growth & Cumulative Projects With Project Conditions
This table is for informational purposes only and is not tied to any mitigation.

Exhibit 5-1

Recommended Improvements



	Existing Conditions	Opening Year With Ambient Growth With Project Conditions	Opening Year With Ambient Growth & Cumulative Projects With Project Conditions
2. Butterfield Stage Road (NS) & Rancho California Road (EW)		No Improvements Required	

Legend:

- (1) = Study Area Intersection
- = Project Site Boundary
- = Project Site
- = Traffic Signal
- RTO = Right Turn Overlap
- = Recommended Improvements

N

6.0 Calle Contento/Rancho California Road Queue Analysis

This section of the report addresses City comments regarding peak hour queuing at the intersection of Calle Contento at Rancho California Road once the County converts this intersection into a roundabout. Specifically, this queuing analysis studies the north leg (southbound approach) movements at the intersection of Calle Contento at Rancho California Road to determine whether traffic will spillback from the future roundabout and block the project access driveway along Calle Contento.

Utilizing Synchro 11.0/SimTraffic 95th percentile delay methodology, RK has conducted a computer micro-simulation of the AM peak hour, PM peak hour, and Saturday Midday Peak Hour traffic based on each future scenario's traffic volume as discussed in *Section 4.0.* The simulation provides a visual aid in evaluating how the traffic flow is expected to perform and visually highlights any areas with potential traffic flow issues such as heavy congestion, weaving, vehicle queues and backups, etc. The reported queues are based on the average of 5 separate simulation runs.

Table 6-1 shows the results of the vehicular queue analysis at the intersection of Calle Contento at Rancho California Road once the County converts this intersection into a roundabout. As shown in Table 6-1, there is adequate storage for the southbound approach at the future roundabout intersection and the calculated queues are not expected to spillback and obstruct the project access driveway along Calle Contento for any of the future analysis scenarios.

Appendix I contains the SimTraffic queuing calculation worksheets for Calle Contento/Rancho California Road.

Table 6-1
Calle Contento/Rancho California Road Queue Analysis Summary

Intersection	Movement[1]	No. of Lanes	Estimated Storage Capacity per Lane (ft)	Opening Year With Ambient Growth Without Project						Opening Year With Ambient Growth With Project						Opening Year With Ambient Growth & Cumulative Projects Without Project						Opening Year With Ambient Growth & Cumulative Projects With Project					
				Vehicular Queue (ft)[3]			Adequate Queue Storage Available?			Vehicular Queue (ft)[3]			Adequate Queue Storage Available?			Vehicular Queue (ft)[3]			Adequate Queue Storage Available?			Vehicular Queue (ft)[3]			Adequate Queue Storage Available?		
				AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD
1. Calle Contento (NS) / Rancho California Road (EW)	SB Through/Left-Turn	1	580[2]	23	26	49	Yes	Yes	Yes	28	31	66	Yes	Yes	Yes	23	27	64	Yes	Yes	Yes	26	34	89	Yes	Yes	Yes
	SB Right-Turn	1	150	0	0	15	Yes	Yes	Yes	0	0	23	Yes	Yes	Yes	10	0	13	Yes	Yes	Yes	7	0	36	Yes	Yes	Yes

[1] SB = Southbound
[2] The storage capacity is measured as distance from the roundabout entrance to the Project Access Driveway.
[3] Queue reported is the 95th percentile queue per lane and is reported in total queue length (feet).

7.0 CEQA Vehicle Miles Traveled (VMT) Analysis

The California Governor's Office of Planning and Research (OPR) issued a Technical Advisory in December 2018 which described their recommended procedures and methodology for VMT analysis. A key element of SB 743, signed in 2013, is the elimination of automobile delay and LOS as the sole basis of determining California Environmental Quality Act (CEQA) impacts. Pursuant to CEQA guidelines, Section 15064.3, VMT is the most appropriate measure of transportation impacts.

Consistent with the recommendations of the *County of Riverside Transportation Analysis Guidelines for Level of Service and Vehicle Miles Traveled*, dated December 2020, screening thresholds may quickly identify whether or not a project should be expected to have a less than significant impact without conducting a detailed project-level assessment.

Per County of Riverside staff direction, a separate VMT screening assessment (*Mexin Teme Winery Vehicle Miles Traveled (VMT) Screening Analysis*, dated May 27, 2022, prepared by RK Engineering Group) has been prepared. The findings of this VMT screening assessment are described below:

The *County of Riverside Transportation Analysis Guidelines for Level of Service and Vehicle Miles Traveled*, dated December 2020, provide screening criteria for land use projects on Figure 3 – Screening Criteria for Development Projects.

The proposed project qualifies for small project screening and may be presumed to have a less than significant impact to VMT based on the following screening criteria:

- Annual Project GHG emissions are less than 3,000 Metric Tons of Carbon Dioxide Equivalent (MTCO2e).

Table 6-1 below summarizes the findings of the screening analysis and shows that the project GHG emissions are below the County of Riverside small project screening criteria. Thus, the project may be presumed to have a less than significant impact to VMT, and therefore can be screened out of a project-level VMT assessment.

Table 7-1

VMT Screening Criteria

Project Type (Small Projects)	Screening Criteria[1]
Project GHG Emissions (Annual)[2]	885.53 MTCO2e
County of Riverside Small Project Screening Criteria	3,000 MTCO2e
Less than Significant?	**Yes**

[1] MTCO2e = Metric Tons of Carbon Dioxide Equivalent

[2] *Mexin Teme Winery Air Quality and Greenhouse Gas Impact Study, February 4, 2022*, prepared by RK.

Based upon the results of this analysis, the project meets the small project screening criteria and may be presumed to have a less than significant VMT impact under CEQA. No further VMT analysis is required.

8.0 Findings, Conclusions & Recommendations

The purpose of this traffic impact analysis is to evaluate the proposed Mexun Teme Winery project from a traffic and circulation standpoint and determine whether the project will have a significant traffic impact. This study has been conducted pursuant to the *County of Riverside Transportation Analysis Guidelines for Level of Service and Vehicle Miles Traveled,* dated December 2020, and the California Environmental Quality Act (CEQA) requirements.

The currently vacant project site is located at 33990 Rancho California Road in the County of Riverside. The proposed project consists of the following land uses:

- 8,836 square feet (SF) wine-tasting room;
- 10-room (6,352 SF) hotel; and
- 4,380 SF of general light industrial.

8.1 Traffic Study Area & Analysis Scenarios

The study area consist of the following three (3) intersections listed below. The jurisdiction where each key study intersection is located is also identified.

1. Calle Contento at Rancho California Road [County of Riverside]
2. Butterfield Stage Rd at Rancho California Rd [County of Riverside/City of Temecula]
3. Calle Contento at Project Access [County of Riverside]

The analysis evaluates traffic conditions of the three (3) study intersections for the following scenarios during the weekday AM (7:00 AM – 9:00 AM), weekday PM (4:00 PM – 6:00 PM), and Saturday midday peak period:

- Existing Conditions;
- Opening Year (2023) With Ambient Growth Without Project Conditions;
- Opening Year (2023) With Ambient Growth With Project Conditions;

- Opening Year (2023) With Ambient Growth & Cumulative Projects Without Project Conditions; and

- Opening Year (2023) With Ambient Growth & Cumulative Projects With Project Conditions.

8.2 ITE Trip Generation

Based on the ITE trip generation rates, the proposed project is forecast to generate approximately 507 weekday daily trips which include approximately 26 weekday AM peak hour trips and approximately 507 weekday PM peak hour trips. Additionally, the proposed project is forecast to generate approximately 1,882 Saturday daily trips which include approximately 333 Saturday midday peak hour trips.

8.3 Planned Intersection Improvements

The County of Riverside is finalizing design plans to convert the intersection of Calle Contento at Rancho California Road, which currently operates as a cross-street stop, into a roundabout.

The existing intersection geometry will be reconfigured with the installation of the roundabout. It is understood the following is the current proposed lane geometries after installation of the roundabout: The southbound approach along Calle Contento is proposed to provide one (1) exclusive southbound right-turn lane and one (1) shared through/left-turn lane. The northbound approach along Calle Contento is proposed to provide one (1) shared left/through/right-turn lane. The eastbound approach along Rancho California Road is proposed to provide one (1) shared eastbound through/left-turn lane and one (1) shared eastbound through/right-turn lane. The westbound approach along Rancho California Road is proposed to provide one (1) shared westbound through/left-turn lane and one (1) shared westbound through/right-turn lane. Appropriate signage and striping should be installed.

8.4 Study Intersection Peak Hour LOS Analysis Summary

For all study scenarios, all study intersections are forecast to operate at an acceptable LOS D or better during the peak hours with the exception of the following study scenarios and deficient study intersections:

- Existing Conditions

    - Int. #1 – Calle Contento (NS) / Rancho California Road (EW) – PM Peak Hour and Saturday Midday Peak Hour

- Opening Year (2023) With Ambient Growth & Cumulative Projects Without Project Conditions

    - Int. #2 – Butterfield Stage Road (NS) / Rancho California Road (EW) – Saturday Midday Peak Hour Only

- Opening Year (2023) With Ambient Growth & Cumulative Projects With Project Conditions

    - Int. #2 – Butterfield Stage Road (NS) / Rancho California Road (EW) – Saturday Midday Peak Hour Only

As discussed in Section 5.0, operation improvements are only required for the "with project" analysis scenarios when the addition of project-related traffic degrades from an LOS D or better to LOS E or F, or if the study intersection was already operating at a deficient LOS in the pre-project conditions.

As such, only the study intersection of Butterfield Stage Road and Rancho California Road (Int. #2) has been identified for operational improvements in order to bring the project-related impacts to a level considered less than significant for the impacted "with project" analysis scenarios

8.5 Recommended Project Improvements

As shown in Section 5.5, the following intersection improvement is recommended for the study intersection of Butterfield Stage Road and Rancho California Road (Int. #2):

- Restripe the westbound approach along Rancho California Road to provide an exclusive westbound right-turn lane.

8.6 Project Fair Share Contribution

The project fair share percentages for Opening Year (2023) With Ambient Growth & Cumulative Projects With Project Conditions traffic conditions are listed below:

- Int. #2 – Butterfield Stage Road (NS) / Rancho California Road (EW) – 12.2% (Saturday Midday Peak Hour)

8.7 Calle Contento/Rancho California Road Queue Analysis

Utilizing Synchro 11.0/SimTraffic 95th percentile delay methodology, there is adequate storage for the southbound approach at the future roundabout intersection and the calculated queues are not expected to spillback and obstruct the project access driveway along Calle Contento for any of the future analysis scenarios.

8.8 CEQA Vehicle Miles Traveled (VMT) Analysis Summary

The proposed project qualifies for small project screening and may be presumed to have a less than significant impact to VMT as Annual Project GHG emissions are forecast to be less than 3,000 Metric Tons of Carbon Dioxide Equivalent (MTCO2e). As such, no further VMT analysis is required.

Appendices

Appendix A

Scope of Work

SCOPING AGREEMENT FOR TRAFFIC IMPACT STUDY

This letter acknowledges the Riverside County Transportation Department requirements for traffic impact analysis of the following project. The analysis must follow the Riverside County Transportation Department Traffic Impact Analysis Preparation Guide dated April 2008.

Case No. **PPT220010**
Related Cases -
SP No.
EIR No.
GPA No.
CZ No.
Project Name: **MEXIM TEME WINERY**
Project Address: **33990 RANCHO CALIFORNIA ROAD, TEMECULA, CA 92591**
Project Description: **18,506 S.F. WINERY**

	Consultant	Developer
Name:	**RK ENGINEERING GROUP, INC.**	**4M ENGINEERING AND DEVELOPMENT**
Address:	**4000 WESTERLY PLACE, STE 280**	**41635 ENTERPRISE CIRCLE, SUITE B**
	NEWPORT BEACH, CA 92660	**TEMECULA, CA 92590**
Telephone:	**949-474-0809**	
Fax:	**949-474-0902**	

A. Trip Generation Source: **ITE 11TH EDITION, 2021**

Current GP Land Use: **AGRICULTURE / WINERY (EXISTING VINEYARDS)** Proposed Land Use: **AGRICULTURE / WINERY (EXISTING VINE**

Current Zoning: **C/V** Proposed Zoning **WC-C**

	Current Trip Generation:			Proposed Trip Generation		
	In	Out	Total	In	Out	Total
AM Trips	**0**	**0**	**0**	**19**	**7**	**26**
PM Trips	**0**	**0**	**0**	**36**	**38**	**74**
Saturday Trips	**0**	**0**	**0**	**158**	**176**	**334**

Internal Trip Allowance Yes ____ No **X** % Trip Discount **0%**
Pass-By Trip Allowance Yes ____ No **X** % Trip Discount **0%**

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

B. Trip Geographic Distribution N **10%** S **30%** E **10%** W **50%**
(See attached exhibit for detailed distribution) ***Distribution will be confirmed after existing counts are taken.**

C. Background Traffic

Project buildout Year: **2023** Annual Ambient Growth Rate: **2%**

Phase Year(s) **SINGLE PHASE**

Other area projects to be analyzed: **TO BE PROVIDED BY COUNTY OF RIVERSIDE STAFF**

Model forecast methodology: **AMBIENT GROWTH PLUS CUMULATIVE PROJECTS**

D. Study Intersections: Note: Subject to revision after other projects, trip generation and distribution are determined, or comments from other agencies.

1	Calle Contento / Rancho California Rd	6	
2	Calle Contento / Site Access	7	
3	Rancho California Rd / Butterfield Stage Rd	8	
4		9	
5		10	

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

1		6	
2		7	
3		8	
4		9	
5		10	

F. Other Jurisdictional Impacts

Is the project within a City's sphere of influence or one-mile radius of City boundaries? Yes _____ No X

If so, name of City or Jurisdiction: _____

G. Site Plan (Copy Attached)

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

SATURDAY PEAK HOUR ANALYSIS
PROJECT DRIVEWAY LOCATION/SPACING ON CALLE CONTENTO
ROUNDABOUT AT RANCHO CALIFORNIA/CALLE CONTENTO

I. Existing Conditions

Traffic count data must be new or recent. Provide traffic count dates if using other than new counts. Date of counts: NEW COUNTS

Note: Traffic Study Submittal Form and appropriate fee must be submitted with, or prior to submittal of this form. Transportation Department staff will not process the Scoping Agreement prior to the fee.

Recommended by:		**Approved by:**	
Bryan Estrada, AICP	4/5/2022		
Consultant's Representative	Date	Transportation Department	Date

Scoping agreement submitted on: 12/21/2021

Scoping agreement revised on: 3/16/2022, 4/5/2022

Mexin Teme Winery Project
Traffic Impact Analysis
Scoping Agreement

April 5, 2022

The following provides information on the proposed project, summarizes the analysis scope, parameters, and assumptions for review and approval, and also includes request for information on items related to the study.

A. Project Description: The project site is located at 33990 Rancho California Road — the northeast corner of the Rancho California Road and Calle Contento intersection— in County of Riverside. The proposed project consists of the following land uses:

- 8,836 square feet of wine-tasting room;
- 6,352 square feet (10 rooms) of hotel; and
- 4,380 square feet of general light industrial.

Access for the project is planned via the following:

- One (1) full-access unsignalized access driveway along Calle Contento

The project is planned to open in 2023 and will be evaluated in one single phase.

Exhibit A shows the location map of the proposed project. Exhibit B shows the proposed site plan.

B. Project Trip Generation: Trip generation represents the amount of traffic that is attracted and produced by a development.

Trip generation is typically estimated based on the trip generation rates from the latest *Institute of Transportation Engineers (ITE) Trip Generation Manual.* The latest and most recent version (11th Edition, 2021) ITE Manual has been utilized for this scoping agreement. This publication provides a comprehensive evaluation of trip generation rates for a variety of land uses.

Table 1 shows the ITE trip generation rates utilized for the trip generation analysis of the proposed project land use. It should be noted that the ITE trip generation manual does not have a Saturday trip generation for General Light Industrial land use; thus, the trip generation used in this analysis is based on its weekday counterpart.

Table 2 shows the trip generation for the proposed project utilizing the trip generation rates shown in Table 1.

As shown in Table 2, based on the preliminary evaluation of the project trip generation utilizing the Institute of Transportation Engineers (ITE) trip generation rates, the proposed project is forecast to generate approximately 507 daily weekday trips, which include approximately 26 AM peak hour trips and 74 PM peak hour trips; and approximately 1,882 daily Saturday trips, which include approximately 334 Saturday peak hour trips.

C. Project Trip Distribution: Proposed distributions will be submitted along with existing traffic counts prior to submitting the Traffic Impact Analysis report.

D. Study Intersections: The analysis will evaluate the following one (1) study intersection:

1. Calle Contento (NS) / Rancho California Road (EW)

2. Calle Contento (NS) / Site Access (EW)

3. Butterfield Stage Road (NS) / Rancho California Road (EW)

E. Analysis Scenarios: The analysis will evaluate traffic conditions for the following scenarios during the weekday AM (7:00 AM to 9:00 AM), weekday PM (4:00 PM to 6:00 PM), and Saturday (Peak Hour to be determined based upon traffic count data) peak hour conditions:

- Existing Conditions;
- Project Opening Year With Ambient Growth Without Project Conditions;
- Project Opening Year With Ambient Growth With Project Conditions;
- Project Opening Year With Ambient Growth & Cumulative Projects Without Project Conditions; and

- Project Opening Year With Ambient Growth & Cumulative Projects With Project Conditions.

F. Traffic Analysis Parameters: The analysis will utilize the following parameters:

- Vistro 2020 analysis software and the Highway Capacity Manual 6th Editions (HCM 6) methodology (electronic files can be provided upon request).

- Optimized Signal Timing.

G. Existing Traffic Counts: The analysis will utilize new traffic counts. The counts will ***not*** be collected by vehicle classification.

- Weekday AM peak period counts will be collected during one typical weekday from 7:00 AM to 9:00 AM.

- Weekday PM peak period counts will be collected during one typical weekday from 4:00 PM to 6:00 PM.

- Saturday two-hour peak period will be determined based on collection of 24-hour ADT counts.

H. Forecast Opening Year (2023) Conditions Traffic Volumes: Opening year (2023) background traffic volumes will be derived by applying an annual growth rate of two percent (2%) per year to existing traffic volumes and addition of traffic associated with specific cumulative projects in the area provided by the City.

I. VMT Analysis: Effective July 1st, 2020, the longstanding metric of roadway level of service (LOS), which is typically measured in terms of vehicle delay, roadway capacity and congestion, will no longer be considered a significant impact under the California Environmental Quality Act (CEQA). Pursuant to CEQA Guidelines, Section 15064.3, VMT is now the most appropriate measure of transportation impacts.

The project is expected to screen out for VMT based on greenhouse gas emissions showing less than 3,000 $MTCO_2e$.

A separate GHG screening report for the proposed project will be provided.

J. Performance Criteria: Acceptable LOS of D or better.

K. Mitigation Measures: If an intersection is operating deficiently, improvements shall be identified to improve intersection operations back to overall level of service prior to the addition of project-related traffic. If a level of service drops from an acceptable LOS to an unacceptable LOS level, then improvements may be necessary to return intersection operations back to an acceptable level.

L. Request for Information: Please provide information on the following for use in the traffic study:

- Information on cumulative projects that need to be included in the traffic analysis (location, land use type(s), and land use quantities); and – (RECEIVED)

- Information on future roadway and circulation system modifications/improvements that are planned within the study area and would potentially affect the analysis.

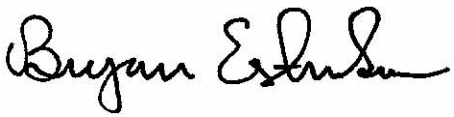
- A roundabout is proposed at the intersection of Rancho California Road / Calle Contento. The exact design and build year is not yet finalized. Driveway location will be reviewed and modified, as needed.

- The final site plan will show the driveway on Calle Contento to be relocated further to the north and tie in at 90 degrees.

If you have any questions, or would like further review, please call us at (949) 474-0809.

Sincerely,

RK ENGINEERING GROUP, INC.



Bryan Estrada, A.I.C.P.
Principal

Attachments

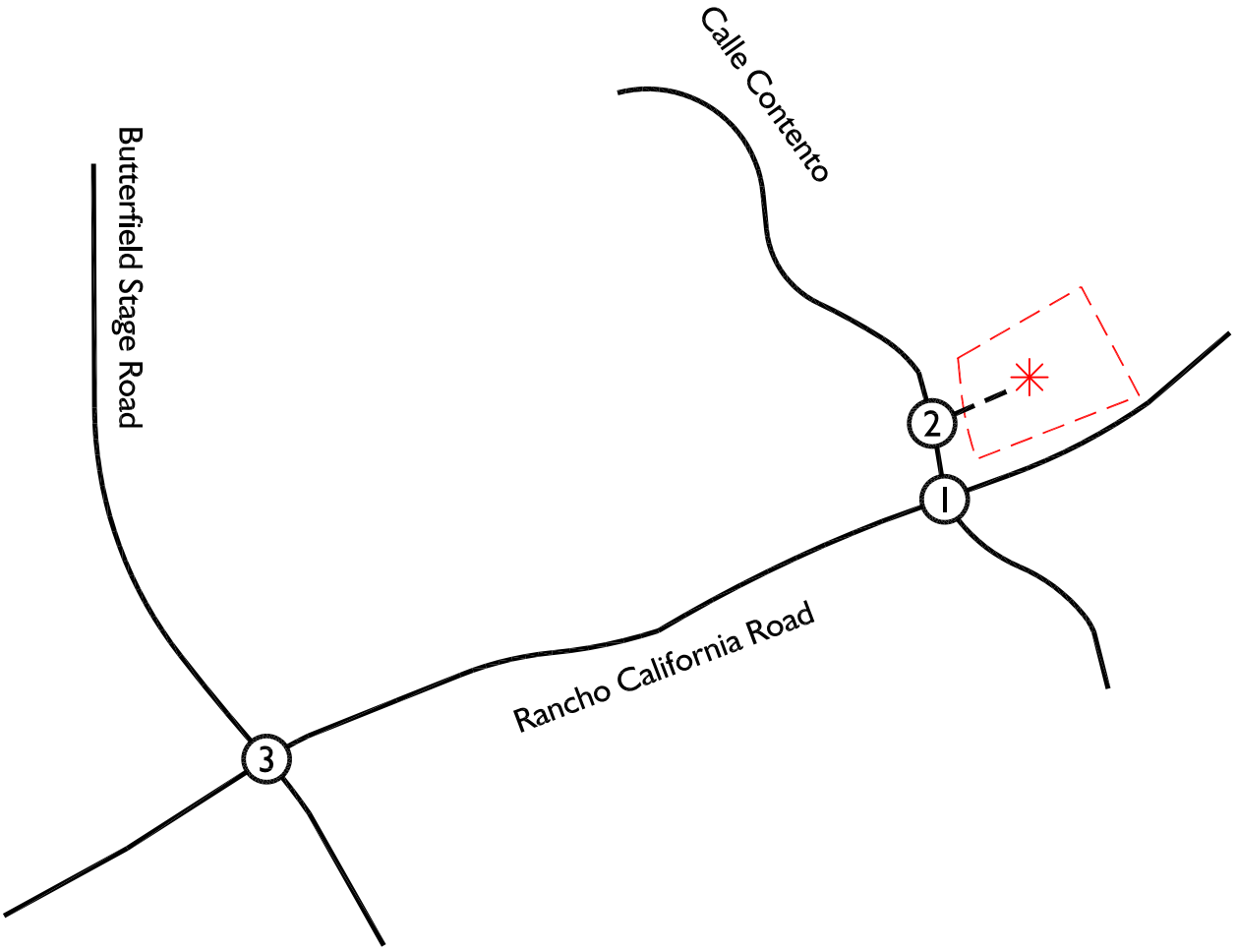
Approved by:

_____
County of Riverside

_____
Date

Attachments

Exhibit A
Location Map



Legend:

(1) = Study Area Intersection

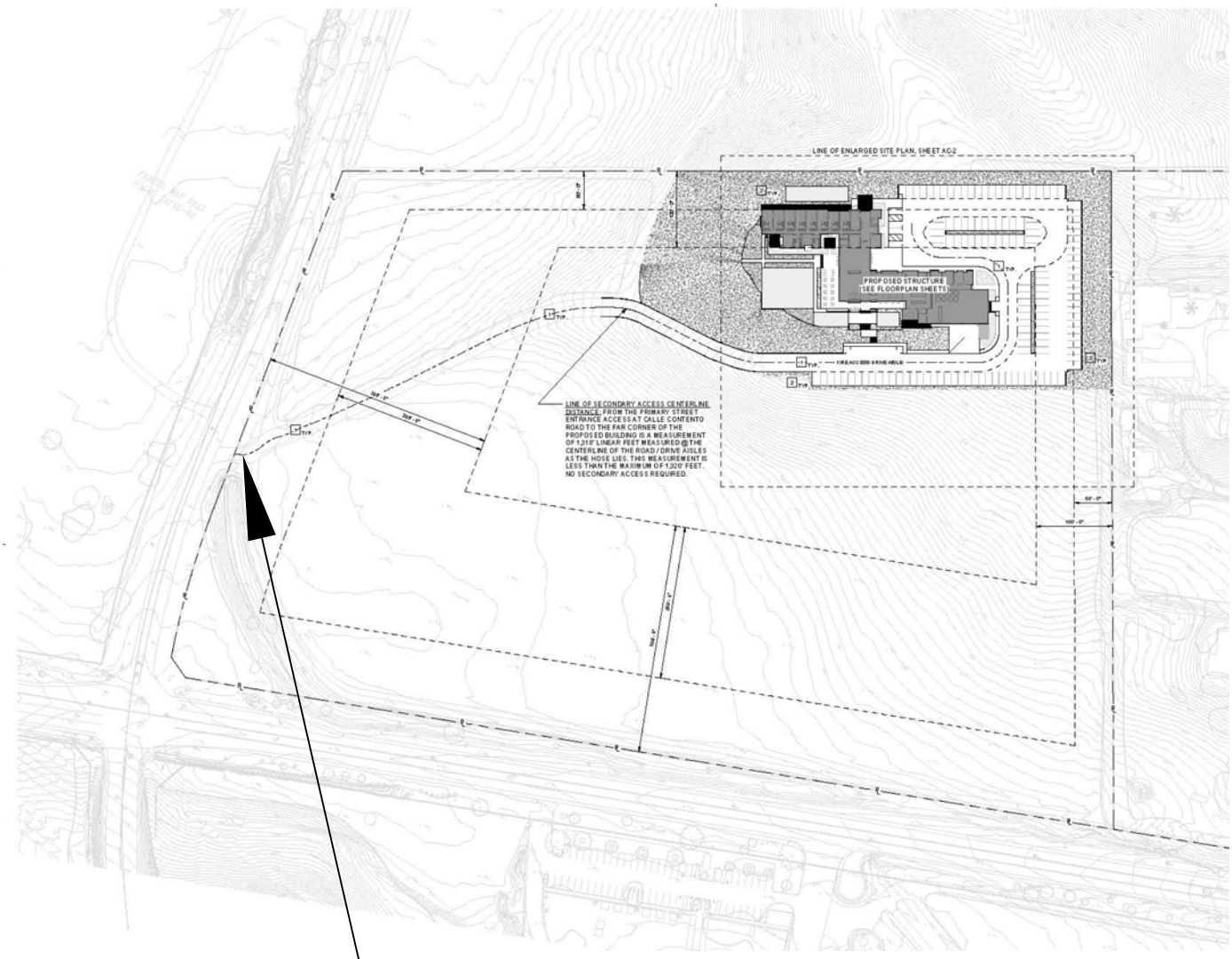
--- = Project Site Boundary

✳ = Project Site

--- = Project Access Driveway

N

Exhibit B
Site Plan



The final site plan will reflect the driveway relocation on Calle Contento further to the north with tie in at 90 degrees.

Table 1
ITE Trip Generation Rates[1]

Land Use	Units	ITE Code	AM			PM			Daily	SATURDAY			Daily
			In	Out	Total	In	Out	Total		In	Out	Total	
Hotel	Rooms	310	0.26	0.20	0.46	0.30	0.29	0.59	7.99	0.40	0.32	0.72	8.07
Wine Tasting Room	TSF	970	1.45	0.62	2.07	3.65	3.66	7.31	45.96	17.15	19.35	36.50	203.48
General Light Industrial	TSF	110	0.65	0.09	0.74	0.09	0.56	0.65	4.87	0.37	0.37	0.74	0.69

[1] Source: *2021 ITE Trip Generation Manual (11th Edition).*

[2] TSF = Thousand Square Feet

Table 2
Proposed Project Trip Generation[1]

Land Use (ITE Code)	Quantity	Units[2]	AM			PM			Daily	SATURDAY			Daily
			In	Out	Total	In	Out	Total		In	Out	Total	
Hotel (310)	10.000	Rooms	3	2	5	3	3	6	80	4	3	7	81
Wine Tasting Room (970)	8.836	TSF	13	5	18	32	32	64	406	152	171	323	1,798
General Light Industrial (110)	4.380	TSF	3	0	3	1	3	4	21	2	2	4	3
		Total	**19**	**7**	**26**	**36**	**38**	**74**	**507**	**158**	**176**	**334**	**1,882**

[1] Source: *2021 ITE Trip Generation Manual (11th Edition).*

[2] TSF = Thousand Square Feet

Appendix B

Traffic Count Worksheets

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

City of Temecula
N/S: Nicholas Valley Road/Calle Contento
E/W: Rancho California Road
Weather: Clear

File Name : 02_CRV_CC_Rancho AM
Site Code : 10522320
Start Date : 4/12/2022

Groups Printed- Total Volume

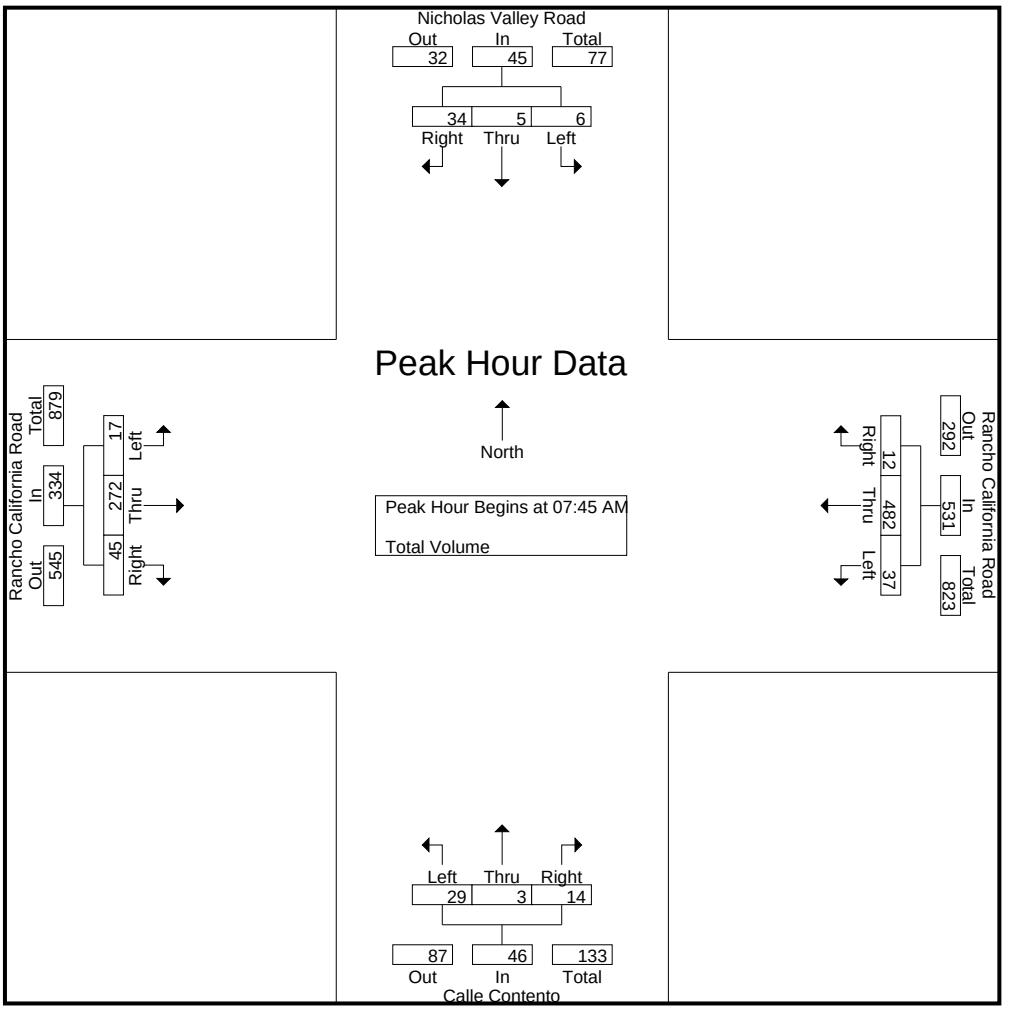
	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	2	1	7	10	2	80	3	85	5	1	4	10	4	78	8	90	195
07:15 AM	0	0	4	4	4	92	2	98	9	0	3	12	5	78	10	93	207
07:30 AM	0	0	9	9	7	89	0	96	4	0	1	5	4	83	2	89	199
07:45 AM	1	0	8	9	9	126	1	136	6	1	2	9	4	83	15	102	256
Total	3	1	28	32	22	387	6	415	24	2	10	36	17	322	35	374	857
08:00 AM	2	2	6	10	9	113	2	124	5	0	4	9	5	70	13	88	231
08:15 AM	1	1	6	8	7	123	3	133	11	1	4	16	3	60	10	73	230
08:30 AM	2	2	14	18	12	120	6	138	7	1	4	12	5	59	7	71	239
08:45 AM	1	1	8	10	5	95	2	102	7	3	4	14	10	75	15	100	226
Total	6	6	34	46	33	451	13	497	30	5	16	51	23	264	45	332	926
Grand Total	9	7	62	78	55	838	19	912	54	7	26	87	40	586	80	706	1783
Apprch %	11.5	9	79.5		6	91.9	2.1		62.1	8	29.9		5.7	83	11.3		
Total %	0.5	0.4	3.5	4.4	3.1	47	1.1	51.1	3	0.4	1.5	4.9	2.2	32.9	4.5	39.6	

	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road 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 07:45 AM																	
07:45 AM	1	0	8	9	9	**126**	1	136	6	**1**	2	9	4	**83**	**15**	**102**	**256**
08:00 AM	**2**	**2**	6	10	9	113	2	124	5	0	**4**	9	**5**	70	13	88	231
08:15 AM	1	1	6	8	7	123	3	133	**11**	1	4	**16**	3	60	10	73	230
08:30 AM	2	2	**14**	**18**	**12**	120	**6**	**138**	7	1	4	12	5	59	7	71	239
Total Volume	6	5	34	45	37	482	12	531	29	3	14	46	17	272	45	334	956
% App. Total	13.3	11.1	75.6		7	90.8	2.3		63	6.5	30.4		5.1	81.4	13.5		
PHF	.750	.625	.607	.625	.771	.956	.500	.962	.659	.750	.875	.719	.850	.819	.750	.819	.934

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

City of Temecula
N/S: Nicholas Valley Road/Calle Contento
E/W: Rancho California Road
Weather: Clear

File Name : 02_CRV_CC_Rancho AM
Site Code : 10522320
Start Date : 4/12/2022
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:

	08:00 AM				07:45 AM				08:00 AM				07:00 AM			
+0 mins.	**2**	**2**	6	10	9	**126**	1	136	5	0	**4**	9	4	78	8	90
+15 mins.	1	1	6	8	9	113	2	124	**11**	1	4	**16**	**5**	78	10	93
+30 mins.	2	2	**14**	**18**	7	123	3	133	7	1	4	12	4	**83**	2	89
+45 mins.	1	1	8	10	**12**	120	**6**	**138**	7	**3**	4	14	4	83	**15**	**102**
Total Volume	6	6	34	46	37	482	12	531	30	5	16	51	17	322	35	374
% App. Total	13	13	73.9		7	90.8	2.3		58.8	9.8	31.4		4.5	86.1	9.4	
PHF	.750	.750	.607	.639	.771	.956	.500	.962	.682	.417	1.000	.797	.850	.970	.583	.917

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

City of Temecula
N/S: Nicholas Valley Road/Calle Contento
E/W: Rancho California Road
Weather: Clear

File Name : 02_CRV_CC_Rancho PM
Site Code : 10522320
Start Date : 4/12/2022

Groups Printed- Total Volume

	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road 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	3	1	11	15	7	115	3	125	3	4	2	9	9	131	19	159	308
04:15 PM	5	0	7	12	2	84	5	91	11	3	1	15	4	111	12	127	245
04:30 PM	4	6	10	20	1	104	2	107	13	0	4	17	8	104	16	128	272
04:45 PM	0	1	8	9	4	81	3	88	3	2	2	7	11	107	8	126	230
Total	12	8	36	56	14	384	13	411	30	9	9	48	32	453	55	540	1055
05:00 PM	2	2	8	12	4	99	5	108	14	1	6	21	5	107	10	122	263
05:15 PM	0	1	10	11	2	92	6	100	9	4	2	15	9	92	9	110	236
05:30 PM	3	2	7	12	2	70	11	83	9	2	5	16	24	92	13	129	240
05:45 PM	2	0	12	14	2	86	4	92	8	1	2	11	17	93	10	120	237
Total	7	5	37	49	10	347	26	383	40	8	15	63	55	384	42	481	976
Grand Total	19	13	73	105	24	731	39	794	70	17	24	111	87	837	97	1021	2031
Apprch %	18.1	12.4	69.5		3	92.1	4.9		63.1	15.3	21.6		8.5	82	9.5		
Total %	0.9	0.6	3.6	5.2	1.2	36	1.9	39.1	3.4	0.8	1.2	5.5	4.3	41.2	4.8	50.3	

	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road 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 04:00 PM																	
04:00 PM	3	1	**11**	15	**7**	**115**	3	**125**	3	**4**	2	9	9	**131**	**19**	**159**	**308**
04:15 PM	**5**	0	7	12	2	84	**5**	91	11	3	1	15	4	111	12	127	245
04:30 PM	4	**6**	10	**20**	1	104	2	107	**13**	0	**4**	**17**	8	104	16	128	272
04:45 PM	0	1	8	9	4	81	3	88	3	2	2	7	**11**	107	8	126	230
Total Volume	12	8	36	56	14	384	13	411	30	9	9	48	32	453	55	540	1055
% App. Total	21.4	14.3	64.3		3.4	93.4	3.2		62.5	18.8	18.8		5.9	83.9	10.2		
PHF	.600	.333	.818	.700	.500	.835	.650	.822	.577	.563	.563	.706	.727	.865	.724	.849	.856

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Weather: Clear

File Name : 02_CRV_CC_Rancho PM
Site Code : 10522320
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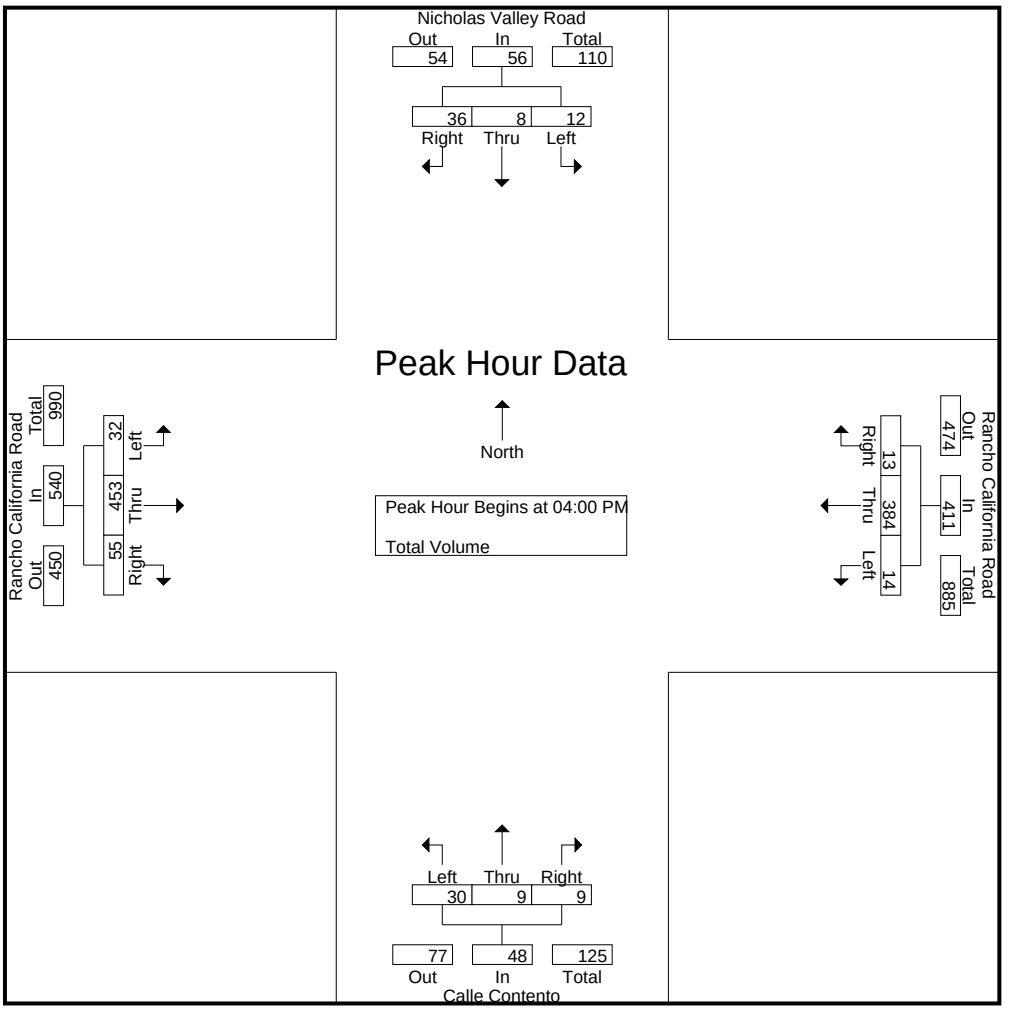

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				05:00 PM				04:00 PM			
+0 mins.	3	1	**11**	15	**7**	**115**	3	**125**	**14**	1	**6**	**21**	9	**131**	**19**	**159**
+15 mins.	**5**	0	7	12	2	84	**5**	91	9	**4**	2	15	4	111	12	127
+30 mins.	4	**6**	10	**20**	1	104	2	107	9	2	5	16	8	104	16	128
+45 mins.	0	1	8	9	4	81	3	88	8	1	2	11	**11**	107	8	126
Total Volume	12	8	36	56	14	384	13	411	40	8	15	63	32	453	55	540
% App. Total	21.4	14.3	64.3		3.4	93.4	3.2		63.5	12.7	23.8		5.9	83.9	10.2	
PHF	.600	.333	.818	.700	.500	.835	.650	.822	.714	.500	.625	.750	.727	.865	.724	.849

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City of Temecula
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E/W: Rancho California Road
Weather: Clear

File Name : 02_CRV_CC_Rancho SAT
Site Code : 10522320
Start Date : 4/9/2022

Groups Printed- Total Volume

	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road 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
02:00 PM	8	2	9	19	3	138	13	154	12	7	4	23	24	144	30	198	394
02:15 PM	12	0	23	35	4	153	11	168	8	2	4	14	19	171	23	213	430
02:30 PM	13	3	22	38	4	172	7	183	12	0	6	18	6	145	39	190	429
02:45 PM	13	1	11	25	2	170	26	198	10	2	3	15	21	182	18	221	459
Total	46	6	65	117	13	633	57	703	42	11	17	70	70	642	110	822	1712
03:00 PM	12	2	22	36	5	187	21	213	14	1	5	20	19	161	28	208	477
03:15 PM	16	7	17	40	4	165	24	193	11	3	5	19	25	150	23	198	450
03:30 PM	12	4	26	42	3	157	20	180	6	2	5	13	21	158	28	207	442
03:45 PM	10	2	24	36	5	157	21	183	9	1	5	15	17	151	18	186	420
Total	50	15	89	154	17	666	86	769	40	7	20	67	82	620	97	799	1789
04:00 PM	11	7	25	43	3	148	20	171	3	4	6	13	21	131	23	175	402
04:15 PM	12	9	23	44	1	192	15	208	6	0	11	17	27	155	24	206	475
04:30 PM	12	1	18	31	5	156	19	180	11	3	2	16	18	139	22	179	406
04:45 PM	6	3	23	32	6	186	22	214	12	3	4	19	16	124	14	154	419
Total	41	20	89	150	15	682	76	773	32	10	23	65	82	549	83	714	1702
Grand Total	137	41	243	421	45	1981	219	2245	114	28	60	202	234	1811	290	2335	5203
Apprch %	32.5	9.7	57.7		2	88.2	9.8		56.4	13.9	29.7		10	77.6	12.4		
Total %	2.6	0.8	4.7	8.1	0.9	38.1	4.2	43.1	2.2	0.5	1.2	3.9	4.5	34.8	5.6	44.9	

	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road 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 02:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:45 PM																	
02:45 PM	13	1	11	25	2	170	**26**	198	10	2	3	15	21	**182**	18	**221**	459
03:00 PM	12	2	22	36	**5**	**187**	21	**213**	**14**	1	**5**	**20**	19	161	**28**	208	**477**
03:15 PM	**16**	**7**	17	40	4	165	24	193	11	**3**	5	19	**25**	150	23	198	450
03:30 PM	12	4	**26**	**42**	3	157	20	180	6	2	5	13	21	158	28	207	442
Total Volume	53	14	76	143	14	679	91	784	41	8	18	67	86	651	97	834	1828
% App. Total	37.1	9.8	53.1		1.8	86.6	11.6		61.2	11.9	26.9		10.3	78.1	11.6		
PHF	.828	.500	.731	.851	.700	.908	.875	.920	.732	.667	.900	.838	.860	.894	.866	.943	.958

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Weather: Clear

File Name : 02_CRV_CC_Rancho SAT
Site Code : 10522320
Start Date : 4/9/2022
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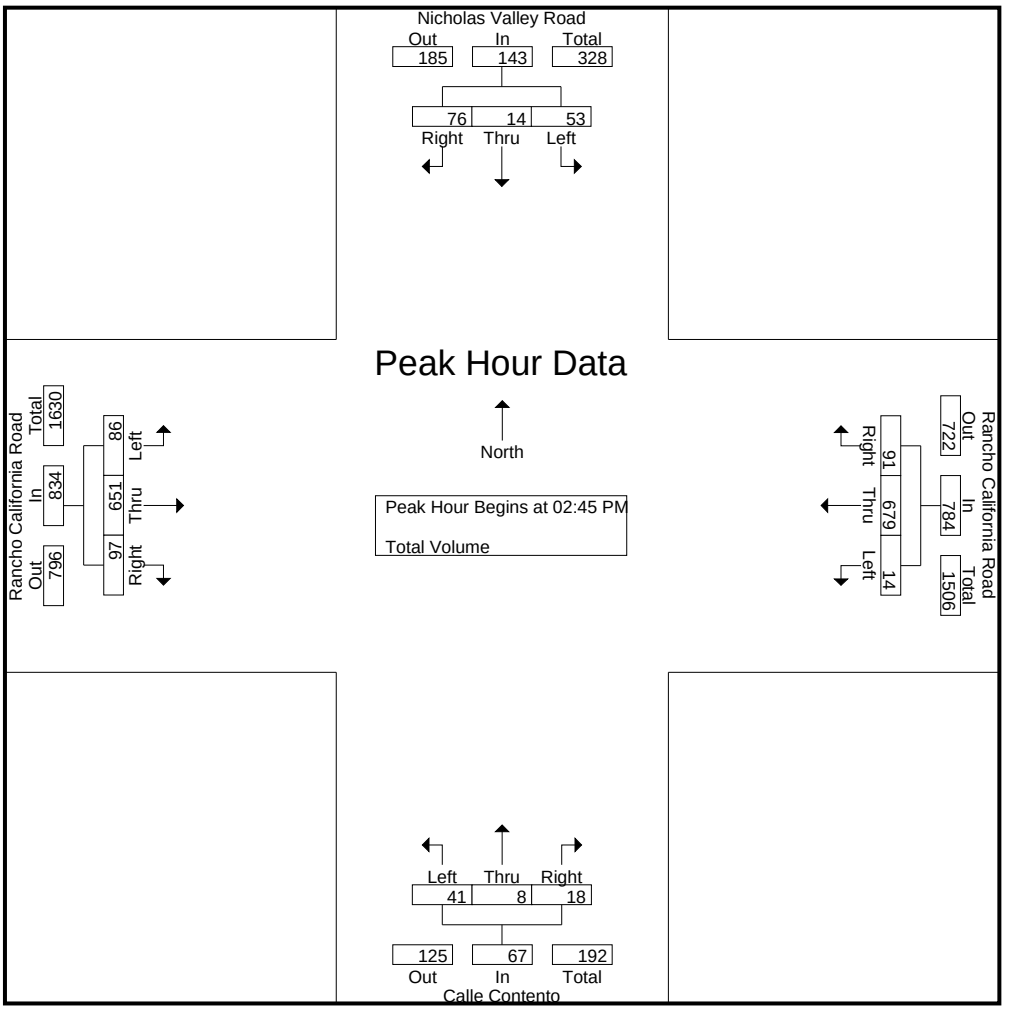

Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:30 PM				02:30 PM				02:30 PM				02:45 PM			
+0 mins.	**12**	4	**26**	42	4	172	7	183	12	0	**6**	18	21	**182**	18	**221**
+15 mins.	10	2	24	36	2	170	**26**	198	10	2	3	15	19	161	**28**	208
+30 mins.	11	7	25	43	**5**	**187**	21	**213**	**14**	1	5	**20**	**25**	150	23	198
+45 mins.	12	**9**	23	**44**	4	165	24	193	11	**3**	5	19	21	158	28	207
Total Volume	45	22	98	165	15	694	78	787	47	6	19	72	86	651	97	834
% App. Total	27.3	13.3	59.4		1.9	88.2	9.9		65.3	8.3	26.4		10.3	78.1	11.6	
PHF	.938	.611	.942	.938	.750	.928	.750	.924	.839	.500	.792	.900	.860	.894	.866	.943

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City of Temecula
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File Name : 01_TEM_Butter_Rancho AM
Site Code : 10522320
Start Date : 4/12/2022
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Groups Printed- Total Volume

	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road 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	29	190	46	265	19	64	9	92	11	62	9	82	16	62	24	102	541
07:15 AM	17	214	52	283	16	83	13	112	18	96	20	134	30	54	26	110	639
07:30 AM	17	199	38	254	9	71	14	94	30	144	16	190	26	61	43	130	668
07:45 AM	22	240	48	310	13	98	20	131	47	149	17	213	19	67	55	141	795
Total	85	843	184	1112	57	316	56	429	106	451	62	619	91	244	148	483	2643
08:00 AM	20	179	39	238	16	104	15	135	63	109	10	182	20	74	47	141	696
08:15 AM	17	168	30	215	28	84	20	132	32	110	6	148	20	52	44	116	611
08:30 AM	18	177	28	223	24	83	14	121	28	91	6	125	26	61	32	119	588
08:45 AM	39	151	47	237	21	110	8	139	36	101	13	150	24	78	22	124	650
Total	94	675	144	913	89	381	57	527	159	411	35	605	90	265	145	500	2545
Grand Total	179	1518	328	2025	146	697	113	956	265	862	97	1224	181	509	293	983	5188
Apprch %	8.8	75	16.2		15.3	72.9	11.8		21.7	70.4	7.9		18.4	51.8	29.8		
Total %	3.5	29.3	6.3	39	2.8	13.4	2.2	18.4	5.1	16.6	1.9	23.6	3.5	9.8	5.6	18.9	

	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road 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	17	214	**52**	283	**16**	83	13	112	18	96	**20**	134	**30**	54	26	110	639
07:30 AM	17	199	38	254	9	71	14	94	30	144	16	190	26	61	43	130	668
07:45 AM	**22**	**240**	48	**310**	13	98	**20**	131	47	**149**	17	**213**	19	67	**55**	**141**	**795**
08:00 AM	20	179	39	238	16	**104**	15	**135**	**63**	109	10	182	20	**74**	47	141	696
Total Volume	76	832	177	1085	54	356	62	472	158	498	63	719	95	256	171	522	2798
% App. Total	7	76.7	16.3		11.4	75.4	13.1		22	69.3	8.8		18.2	49	32.8		
PHF	.864	.867	.851	.875	.844	.856	.775	.874	.627	.836	.788	.844	.792	.865	.777	.926	.880

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File Name : 01_TEM_Butter_Rancho AM
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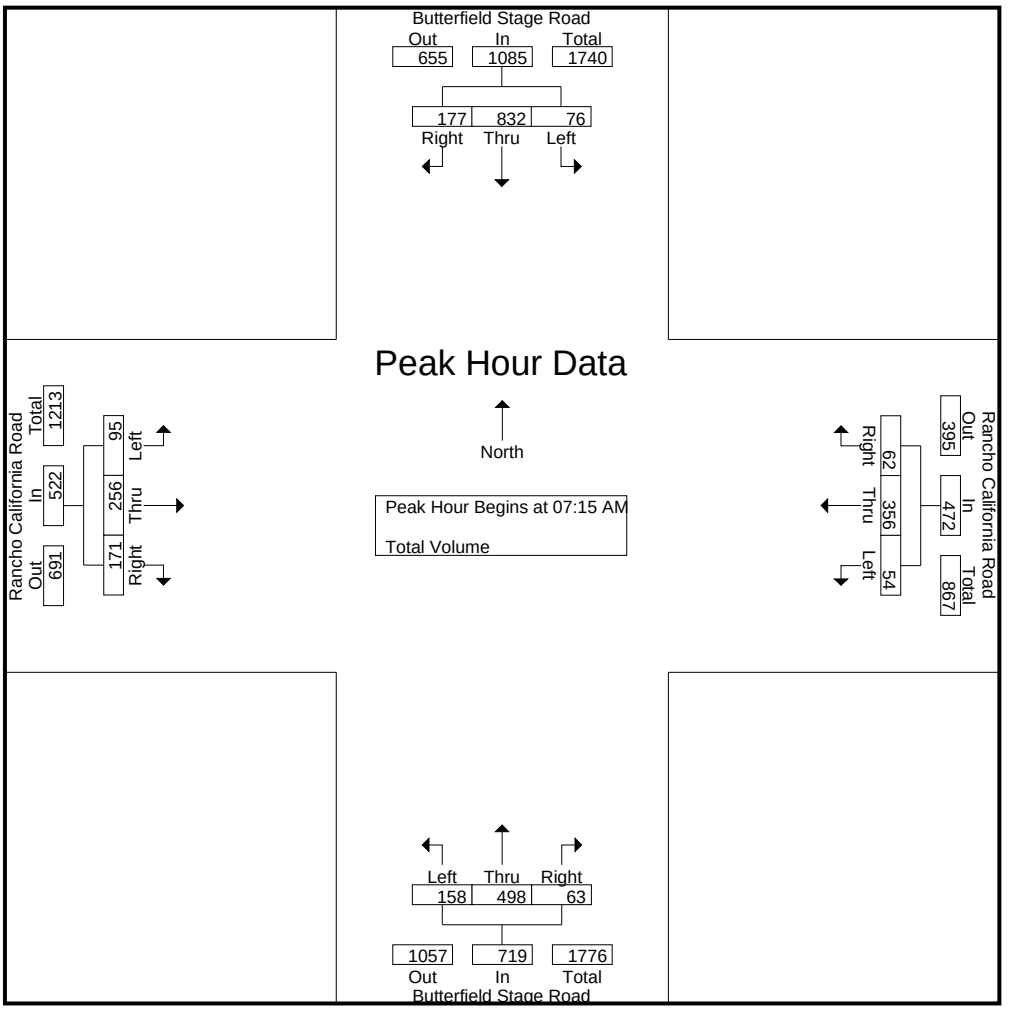

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM				08:00 AM				07:30 AM				07:30 AM			
+0 mins.	**29**	190	46	265	16	104	15	135	30	144	16	190	**26**	61	43	130
+15 mins.	17	214	**52**	283	**28**	84	**20**	132	47	**149**	**17**	**213**	19	67	**55**	**141**
+30 mins.	17	199	38	254	24	83	14	121	**63**	109	10	182	20	**74**	47	141
+45 mins.	22	**240**	48	**310**	21	**110**	8	**139**	32	110	6	148	20	52	44	116
Total Volume	85	843	184	1112	89	381	57	527	172	512	49	733	85	254	189	528
% App. Total	7.6	75.8	16.5		16.9	72.3	10.8		23.5	69.8	6.7		16.1	48.1	35.8	
PHF	.733	.878	.885	.897	.795	.866	.713	.948	.683	.859	.721	.860	.817	.858	.859	.936

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File Name : 01_TEM_Butter_Rancho PM
Site Code : 10522320
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Groups Printed- Total Volume

	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road 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	26	142	27	195	22	81	20	123	26	229	20	275	47	106	36	189	782
04:15 PM	22	147	25	194	12	90	39	141	21	196	20	237	58	103	40	201	773
04:30 PM	18	125	22	165	14	100	27	141	30	231	16	277	68	93	48	209	792
04:45 PM	13	143	23	179	18	67	28	113	33	249	19	301	60	109	37	206	799
Total	79	557	97	733	66	338	114	518	110	905	75	1090	233	411	161	805	3146
05:00 PM	19	171	23	213	18	95	20	133	27	269	14	310	57	86	46	189	845
05:15 PM	12	165	21	198	18	72	31	121	15	267	16	298	72	84	64	220	837
05:30 PM	13	143	22	178	18	81	22	121	17	266	18	301	77	95	43	215	815
05:45 PM	20	117	22	159	14	85	38	137	10	209	11	230	42	108	40	190	716
Total	64	596	88	748	68	333	111	512	69	1011	59	1139	248	373	193	814	3213
Grand Total	143	1153	185	1481	134	671	225	1030	179	1916	134	2229	481	784	354	1619	6359
Apprch %	9.7	77.9	12.5		13	65.1	21.8		8	86	6		29.7	48.4	21.9		
Total %	2.2	18.1	2.9	23.3	2.1	10.6	3.5	16.2	2.8	30.1	2.1	35.1	7.6	12.3	5.6	25.5	

	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road 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 04:45 PM																	
04:45 PM	13	143	**23**	179	**18**	67	28	113	**33**	249	**19**	301	60	**109**	37	206	799
05:00 PM	**19**	**171**	23	**213**	18	**95**	20	**133**	27	**269**	14	**310**	57	86	46	189	**845**
05:15 PM	12	165	21	198	18	72	**31**	121	15	267	16	298	72	84	**64**	**220**	837
05:30 PM	13	143	22	178	18	81	22	121	17	266	18	301	**77**	95	43	215	815
Total Volume	57	622	89	768	72	315	101	488	92	1051	67	1210	266	374	190	830	3296
% App. Total	7.4	81	11.6		14.8	64.5	20.7		7.6	86.9	5.5		32	45.1	22.9		
PHF	.750	.909	.967	.901	1.00	.829	.815	.917	.697	.977	.882	.976	.864	.858	.742	.943	.975

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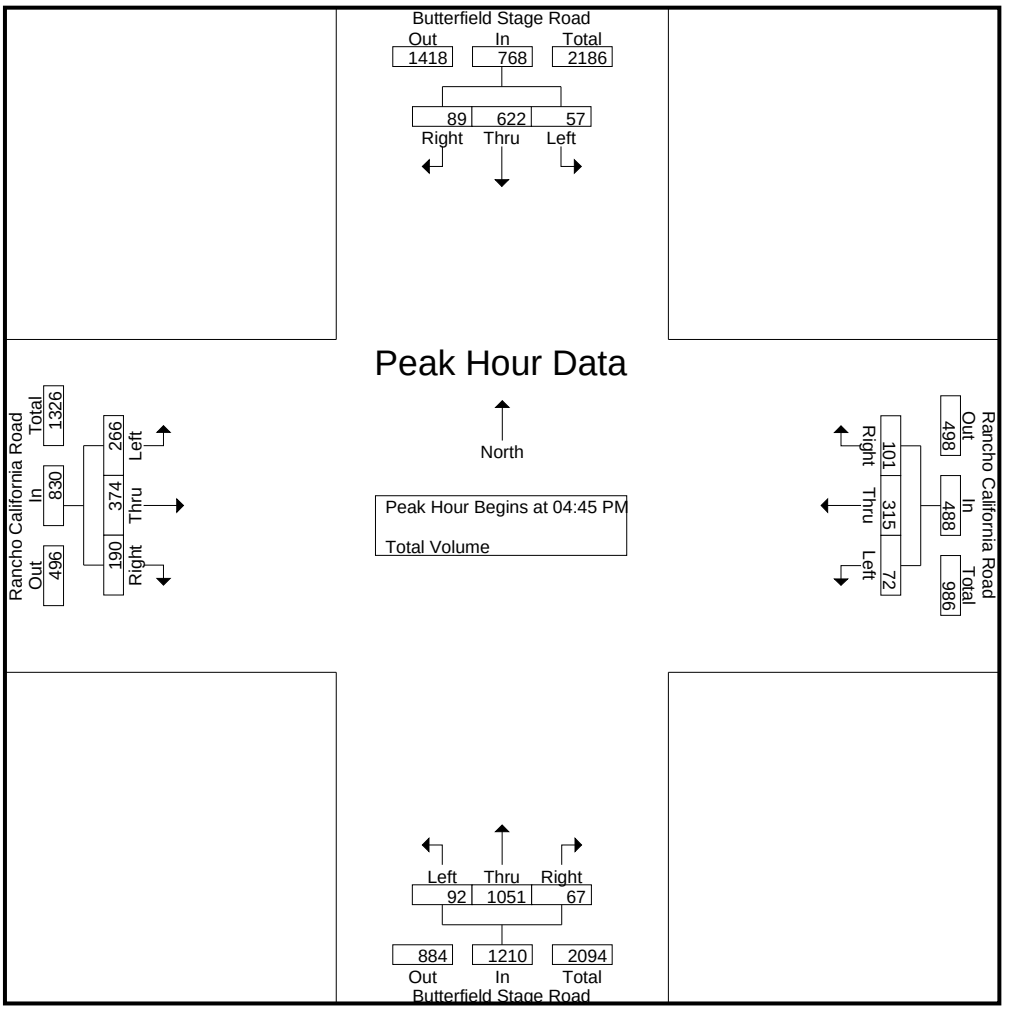

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM				04:15 PM				04:45 PM				04:45 PM			
+0 mins.	13	143	**23**	179	12	90	**39**	**141**	**33**	249	**19**	301	60	**109**	37	206
+15 mins.	**19**	**171**	23	**213**	14	**100**	27	141	27	**269**	14	**310**	57	86	46	189
+30 mins.	12	165	21	198	**18**	67	28	113	15	267	16	298	72	84	**64**	**220**
+45 mins.	13	143	22	178	18	95	20	133	17	266	18	301	**77**	95	43	215
Total Volume	57	622	89	768	62	352	114	528	92	1051	67	1210	266	374	190	830
% App. Total	7.4	81	11.6		11.7	66.7	21.6		7.6	86.9	5.5		32	45.1	22.9	
PHF	.750	.909	.967	.901	.861	.880	.731	.936	.697	.977	.882	.976	.864	.858	.742	.943

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Site Code : 10522320
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Groups Printed- Total Volume

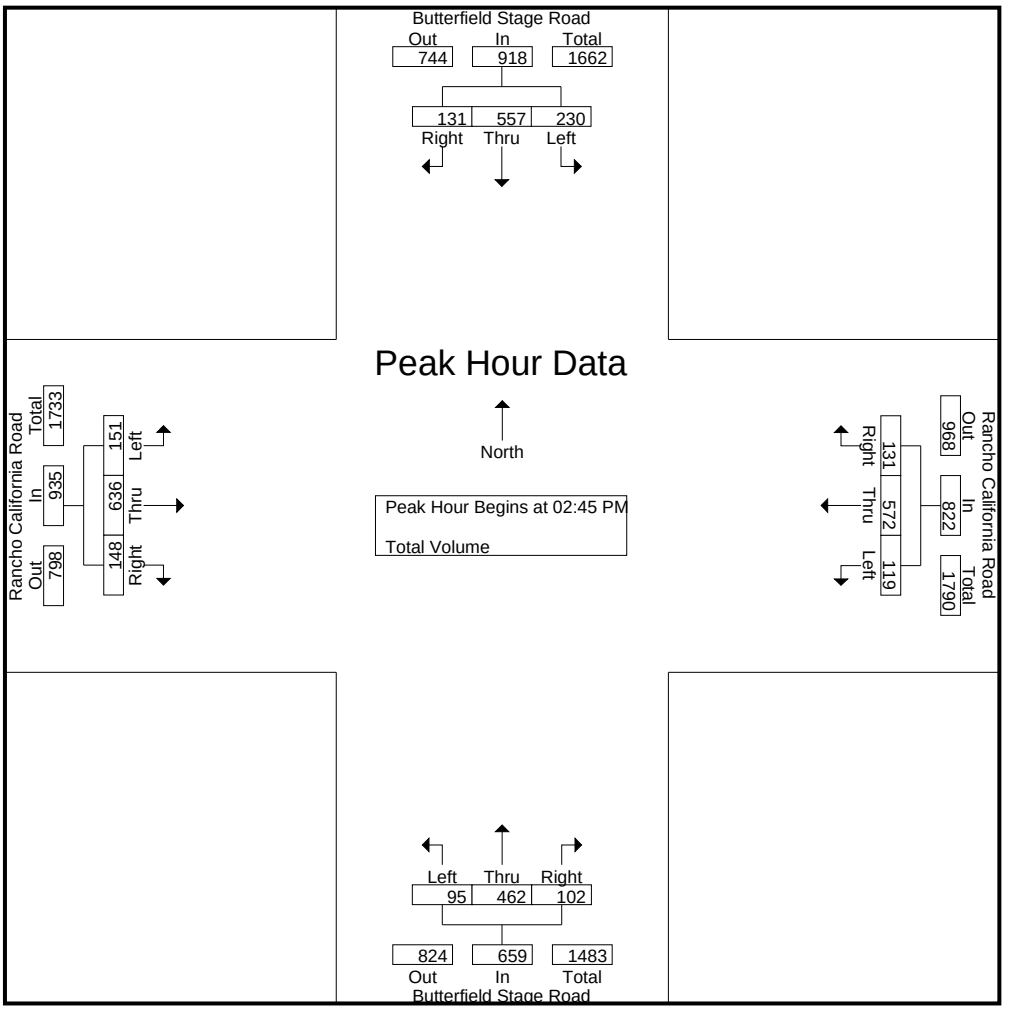
	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
02:00 PM	66	182	44	292	28	96	27	151	24	127	22	173	32	147	40	219	835
02:15 PM	64	147	25	236	22	135	26	183	26	122	27	175	19	164	31	214	808
02:30 PM	65	155	30	250	28	136	25	189	21	138	13	172	35	128	30	193	804
02:45 PM	67	132	37	236	26	144	24	194	25	115	25	165	37	170	44	251	846
Total	262	616	136	1014	104	511	102	717	96	502	87	685	123	609	145	877	3293
03:00 PM	72	145	38	255	33	152	36	221	28	86	30	144	34	161	38	233	853
03:15 PM	44	159	26	229	31	131	33	195	18	132	26	176	41	140	34	215	815
03:30 PM	47	121	30	198	29	145	38	212	24	129	21	174	39	165	32	236	820
03:45 PM	61	114	26	201	31	147	36	214	19	114	18	151	32	140	27	199	765
Total	224	539	120	883	124	575	143	842	89	461	95	645	146	606	131	883	3253
04:00 PM	38	128	24	190	33	137	17	187	25	117	19	161	45	127	25	197	735
04:15 PM	38	107	22	167	28	191	42	261	18	98	19	135	33	150	40	223	786
04:30 PM	37	102	26	165	36	148	46	230	26	126	20	172	39	141	30	210	777
04:45 PM	34	124	26	184	41	172	47	260	34	116	16	166	26	146	28	200	810
Total	147	461	98	706	138	648	152	938	103	457	74	634	143	564	123	830	3108
Grand Total	633	1616	354	2603	366	1734	397	2497	288	1420	256	1964	412	1779	399	2590	9654
Apprch %	24.3	62.1	13.6		14.7	69.4	15.9		14.7	72.3	13		15.9	68.7	15.4		
Total %	6.6	16.7	3.7	27	3.8	18	4.1	25.9	3	14.7	2.7	20.3	4.3	18.4	4.1	26.8	

	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road 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 02:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:45 PM																	
02:45 PM	67	132	37	236	26	144	24	194	25	115	25	165	37	**170**	**44**	**251**	846
03:00 PM	**72**	145	**38**	**255**	**33**	**152**	36	**221**	**28**	86	**30**	144	34	161	38	233	**853**
03:15 PM	44	**159**	26	229	31	131	33	195	18	**132**	26	**176**	**41**	140	34	215	815
03:30 PM	47	121	30	198	29	145	**38**	212	24	129	21	174	39	165	32	236	820
Total Volume	230	557	131	918	119	572	131	822	95	462	102	659	151	636	148	935	3334
% App. Total	25.1	60.7	14.3		14.5	69.6	15.9		14.4	70.1	15.5		16.1	68	15.8		
PHF	.799	.876	.862	.900	.902	.941	.862	.930	.848	.875	.850	.936	.921	.935	.841	.931	.977

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

City of Temecula
N/S: Butterfield Stage Road
E/W: Rancho California Road
Weather: Clear

File Name : 01_TEM_Butter_Rancho SAT
Site Code : 10522320
Start Date : 4/9/2022
Page No : 2



Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM				04:00 PM				02:00 PM				02:45 PM			
+0 mins.	66	**182**	**44**	**292**	33	137	17	187	24	127	22	173	37	**170**	**44**	**251**
+15 mins.	64	147	25	236	28	**191**	42	**261**	**26**	122	**27**	**175**	34	161	38	233
+30 mins.	65	155	30	250	36	148	46	230	21	**138**	13	172	**41**	140	34	215
+45 mins.	**67**	132	37	236	**41**	172	**47**	260	25	115	25	165	39	165	32	236
Total Volume	262	616	136	1014	138	648	152	938	96	502	87	685	151	636	148	935
% App. Total	25.8	60.7	13.4		14.7	69.1	16.2		14	73.3	12.7		16.1	68	15.8	
PHF	.978	.846	.773	.868	.841	.848	.809	.898	.923	.909	.806	.979	.921	.935	.841	.931

Appendix C

Existing Conditions
LOS Analysis Worksheets

Intersection Level Of Service Report
Intersection 1: Calle Contento at Rancho California Road

Control Type:	Two-way stop	Delay (sec / veh):	24.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.146

Intersection Setup

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	29	3	14	6	5	34	17	272	45	37	482	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	29	3	14	6	5	34	17	272	45	37	482	12
Peak Hour Factor	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	1	4	2	1	9	5	73	12	10	129	3
Total Analysis Volume [veh/h]	31	3	15	6	5	36	18	291	48	40	516	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.01	0.02	0.03	0.02	0.06	0.02	0.00	0.00	0.03	0.01	0.00
d_M, Delay for Movement [s/veh]	24.74	22.09	12.61	22.29	21.06	12.52	8.53	0.00	0.00	8.05	0.00	0.00
Movement LOS	C	C	B	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.63	0.63	0.63	0.38	0.38	0.38	0.05	0.00	0.00	0.10	0.00	0.00
95th-Percentile Queue Length [ft/ln]	15.86	15.86	15.86	9.40	9.40	9.40	1.32	0.00	0.00	2.54	0.00	0.00
d_A, Approach Delay [s/veh]	20.86			14.68			0.43			0.57		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	2.14											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	33.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.693

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	158	498	63	76	832	177	95	256	171	54	356	62
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	158	498	63	76	832	177	95	256	171	54	356	62
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	45	141	18	22	236	50	27	73	49	15	101	18
Total Analysis Volume [veh/h]	180	566	72	86	945	201	108	291	194	61	405	70
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	38	0	22	38	0	12	39	0	11	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	63	63	7	57	57	7	18	18	6	17	17
g / C, Green / Cycle	0.12	0.57	0.57	0.06	0.52	0.52	0.06	0.16	0.16	0.05	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.10	0.17	0.17	0.05	0.32	0.32	0.03	0.14	0.14	0.03	0.13	0.13
s, saturation flow rate [veh/h]	1781	1870	1797	1781	1870	1758	3459	1870	1626	1781	1870	1776
c, Capacity [veh/h]	212	1070	1028	112	964	907	215	309	269	97	295	280
d1, Uniform Delay [s]	47.53	12.20	12.20	50.82	18.85	18.89	49.99	44.48	44.62	50.94	44.87	44.94
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.11	0.73	0.76	10.58	2.89	3.10	1.82	5.79	7.34	6.45	5.67	6.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.30	0.30	0.77	0.61	0.61	0.50	0.83	0.85	0.63	0.82	0.83
d, Delay for Lane Group [s/veh]	56.64	12.94	12.97	61.39	21.74	21.99	51.80	50.27	51.96	57.38	50.54	51.21
Lane Group LOS	E	B	B	E	C	C	D	D	D	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.35	4.22	4.07	2.66	11.01	10.46	1.49	7.24	6.55	1.82	6.84	6.61
50th-Percentile Queue Length [ft/ln]	133.84	105.48	101.70	66.45	275.20	261.55	37.31	181.09	163.81	45.46	170.89	165.22
95th-Percentile Queue Length [veh/ln]	9.15	7.59	7.32	4.78	16.45	15.77	2.69	11.66	10.75	3.27	11.12	10.82
95th-Percentile Queue Length [ft/ln]	228.70	189.70	183.06	119.60	411.23	394.17	67.15	291.44	268.75	81.83	278.08	270.62

Movement, Approach, & Intersection Results

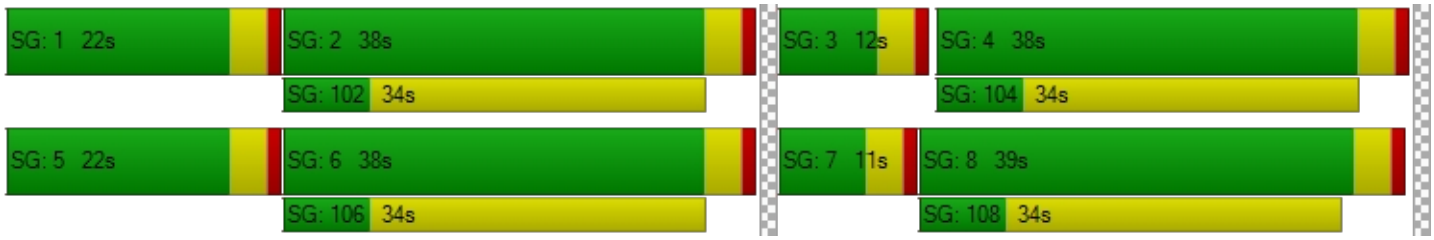
d_M, Delay for Movement [s/veh]	56.64	12.95	12.97	61.39	21.83	21.99	51.80	50.47	51.96	57.38	50.81	51.21
Movement LOS	E	B	B	E	C	C	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	22.57			24.62			51.20			51.61		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	33.60											
Intersection LOS	C											
Intersection V/C	0.693											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.58	44.58	44.58	44.58
l_p,int, Pedestrian LOS Score for Intersection	2.703	2.695	2.687	2.502
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	618	618	636	618
d_b, Bicycle Delay [s]	26.28	26.28	25.59	26.28
l_b,int, Bicycle LOS Score for Intersection	2.234	2.576	2.049	2.002
Bicycle LOS	B	B	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 1: Calle Contento at Rancho California Road

Control Type:	Two-way stop	Delay (sec / veh):	35.1
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.220

Intersection Setup

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	30	9	9	12	8	36	32	453	55	14	384	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	9	9	12	8	36	32	453	55	14	384	13
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	3	3	4	2	11	9	132	16	4	112	4
Total Analysis Volume [veh/h]	35	11	11	14	9	42	37	529	64	16	449	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.22	0.05	0.02	0.09	0.05	0.07	0.03	0.01	0.00	0.02	0.00	0.00
d_M, Delay for Movement [s/veh]	35.13	30.38	19.10	29.71	26.86	13.70	8.40	0.00	0.00	8.72	0.00	0.00
Movement LOS	E	D	C	D	D	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.17	1.17	1.17	0.74	0.74	0.74	0.10	0.00	0.00	0.05	0.00	0.00
95th-Percentile Queue Length [ft/ln]	29.23	29.23	29.23	18.53	18.53	18.53	2.62	0.00	0.00	1.24	0.00	0.00
d_A, Approach Delay [s/veh]	31.12			18.97			0.49			0.29		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	2.81											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	31.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.647

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	92	1051	67	57	622	89	266	374	190	72	315	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	92	1051	67	57	622	89	266	374	190	72	315	101
Peak Hour Factor	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	269	17	15	159	23	68	96	49	18	81	26
Total Analysis Volume [veh/h]	94	1078	69	58	638	91	273	384	195	74	323	104
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	11	38	0	11	38	0	15	43	0	13	41	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	57	57	6	56	56	10	20	20	6	16	16
g / C, Green / Cycle	0.07	0.54	0.54	0.05	0.53	0.53	0.10	0.19	0.19	0.06	0.15	0.15
(v / s)_i Volume / Saturation Flow Rate	0.05	0.31	0.31	0.03	0.20	0.20	0.08	0.16	0.16	0.04	0.12	0.12
s, saturation flow rate [veh/h]	1781	1870	1831	1781	1870	1789	3459	1870	1660	1781	1870	1717
c, Capacity [veh/h]	120	1011	990	99	989	946	339	359	319	107	288	264
d1, Uniform Delay [s]	48.27	16.07	16.08	48.48	14.58	14.59	46.44	41.05	41.07	48.47	42.66	42.77
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.59	2.36	2.42	5.47	1.10	1.15	4.54	5.82	6.56	7.81	4.26	5.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.57	0.57	0.59	0.38	0.38	0.81	0.85	0.86	0.69	0.77	0.78
d, Delay for Lane Group [s/veh]	58.85	18.43	18.50	53.94	15.68	15.73	50.97	46.88	47.63	56.27	46.92	47.78
Lane Group LOS	E	B	B	D	B	B	D	D	D	E	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.77	9.46	9.30	1.63	5.34	5.13	3.69	8.17	7.33	2.13	5.80	5.49
50th-Percentile Queue Length [ft/ln]	69.22	236.52	232.46	40.76	133.45	128.28	92.23	204.26	183.35	53.20	144.89	137.22
95th-Percentile Queue Length [veh/ln]	4.98	14.51	14.30	2.93	9.13	8.85	6.64	12.86	11.78	3.83	9.74	9.33
95th-Percentile Queue Length [ft/ln]	124.60	362.64	357.49	73.37	228.18	221.16	166.01	321.45	294.38	95.76	243.60	233.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	58.85	18.46	18.50	53.94	15.70	15.73	50.97	47.03	47.63	56.27	47.19	47.78
Movement LOS	E	B	B	D	B	B	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	21.52			18.52			48.43			48.66		
Approach LOS	C			B			D			D		
d_I, Intersection Delay [s/veh]	31.63											
Intersection LOS	C											
Intersection V/C	0.647											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.11	42.11	42.11	42.11
l_p,int, Pedestrian LOS Score for Intersection	2.726	2.744	2.681	2.504
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	647	647	742	704
d_b, Bicycle Delay [s]	24.03	24.03	20.77	22.05
l_b,int, Bicycle LOS Score for Intersection	2.583	2.209	2.263	1.973
Bicycle LOS	B	B	B	A

Sequence

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

Intersection Level Of Service Report
Intersection 1: Calle Contento at Rancho California Road

Control Type:	Two-way stop	Delay (sec / veh):	264.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.889

Intersection Setup

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	41	8	18	53	14	76	86	651	97	14	679	91
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	41	8	18	53	14	76	86	651	97	14	679	91
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	2	5	14	4	20	22	170	25	4	177	24
Total Analysis Volume [veh/h]	43	8	19	55	15	79	90	680	101	15	709	95
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.92	0.10	0.04	0.89	0.19	0.18	0.11	0.01	0.00	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	258.01	225.29	188.91	264.25	250.84	214.38	9.93	0.00	0.00	9.38	0.00	0.00
Movement LOS	F	F	F	F	F	F	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	5.38	5.38	5.38	9.62	9.62	9.62	0.37	0.00	0.00	0.05	0.00	0.00
95th-Percentile Queue Length [ft/ln]	134.58	134.58	134.58	240.44	240.44	240.44	9.21	0.00	0.00	1.37	0.00	0.00
d_A, Approach Delay [s/veh]	235.52			236.46			1.03			0.17		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	27.63											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	41.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.676

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	95	462	102	230	557	131	151	636	148	119	572	131
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	95	462	102	230	557	131	151	636	148	119	572	131
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	118	26	59	143	34	39	163	38	30	146	34
Total Analysis Volume [veh/h]	97	473	104	235	570	134	155	651	151	122	585	134
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	38	0	21	38	0	11	43	0	13	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	45	45	17	54	54	7	28	28	9	30	30
g / C, Green / Cycle	0.07	0.39	0.39	0.15	0.47	0.47	0.06	0.25	0.25	0.08	0.26	0.26
(v / s)_i Volume / Saturation Flow Rate	0.05	0.16	0.16	0.13	0.19	0.19	0.04	0.22	0.22	0.07	0.20	0.20
s, saturation flow rate [veh/h]	1781	1870	1755	1781	1870	1748	3459	1870	1750	1781	1870	1751
c, Capacity [veh/h]	124	724	680	263	870	814	213	462	432	141	495	463
d1, Uniform Delay [s]	52.70	25.67	25.70	48.17	20.41	20.41	53.05	41.90	41.90	52.41	38.84	38.85
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.21	0.21	0.11	0.13	0.13
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.37	1.71	1.84	10.32	1.48	1.58	4.69	11.18	11.82	14.61	2.86	3.08
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.41	0.41	0.89	0.42	0.42	0.73	0.90	0.90	0.87	0.75	0.75
d, Delay for Lane Group [s/veh]	63.07	27.38	27.54	58.49	21.89	21.99	57.74	53.07	53.71	67.02	41.70	41.93
Lane Group LOS	E	C	C	E	C	C	E	D	D	E	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.11	6.23	5.91	7.35	6.76	6.34	2.34	12.71	11.97	4.05	9.94	9.35
50th-Percentile Queue Length [ft/ln]	77.80	155.69	147.69	183.72	168.97	158.59	58.47	317.65	299.15	101.22	248.52	233.72
95th-Percentile Queue Length [veh/ln]	5.60	10.32	9.89	11.79	11.02	10.47	4.21	18.55	17.64	7.29	15.11	14.36
95th-Percentile Queue Length [ft/ln]	140.04	258.00	247.34	294.87	275.57	261.85	105.25	463.80	440.98	182.20	377.79	359.08

Movement, Approach, & Intersection Results

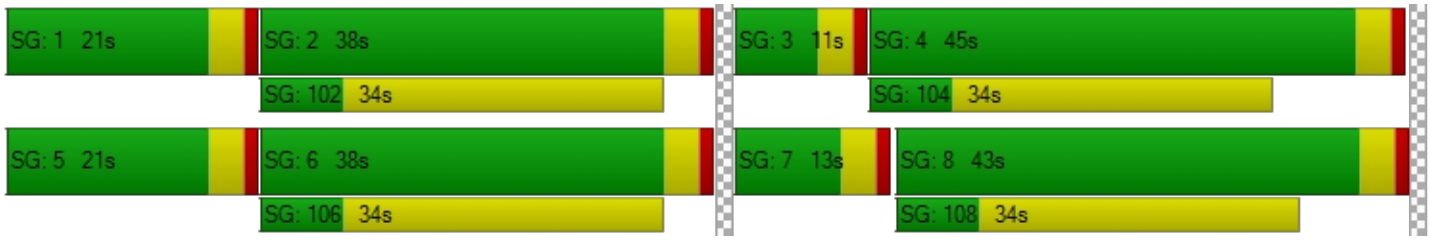
d_M, Delay for Movement [s/veh]	63.07	27.44	27.54	58.49	21.92	21.99	57.74	53.31	53.71	67.02	41.78	41.93
Movement LOS	E	C	C	E	C	C	E	D	D	E	D	D
d_A, Approach Delay [s/veh]	32.58			31.08			54.09			45.47		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	41.38											
Intersection LOS	D											
Intersection V/C	0.676											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.05	47.05	47.05	47.05
l_p,int, Pedestrian LOS Score for Intersection	2.607	2.643	2.753	2.669
Crosswalk LOS	B	B	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	591	591	678	713
d_b, Bicycle Delay [s]	28.54	28.54	25.13	23.83
l_b,int, Bicycle LOS Score for Intersection	2.116	2.334	2.349	2.253
Bicycle LOS	B	B	B	B

Sequence

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



Appendix D

Opening Year (2023) With Ambient Growth Without Project Conditions
LOS Analysis Worksheets

Intersection Level Of Service Report
Intersection 1: Calle Contento at Rancho California Road

Control Type:	Roundabout	Delay (sec / veh):	4.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	30	3	14	6	5	35	17	277	46	38	492	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	3	14	6	5	35	17	277	46	38	492	12
Peak Hour Factor	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	1	4	2	1	9	5	74	12	10	132	3
Total Analysis Volume [veh/h]	32	3	15	6	5	37	18	297	49	41	527	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	327			612			53			54		
Exiting Flow Rate [veh/h]	97			35			608			324		
Demand Flow Rate [veh/h]	30	3	14	6	5	35	17	277	46	38	492	12
Adjusted Demand Flow Rate [veh/h]	32	3	15	6	5	37	18	297	49	41	527	13

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	51	12	38	175	197	279	315
Capacity of Entry and Bypass Lanes [veh/h]	989	814	814	1354	1354	1352	1352
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	969	798	798	1327	1327	1326	1326
X, volume / capacity	0.05	0.01	0.05	0.13	0.15	0.21	0.23

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.16	0.04	0.15	0.44	0.51	0.77	0.90
95th-Percentile Queue Length [ft]	4.08	1.05	3.64	11.07	12.72	19.35	22.54
Approach Delay [s/veh]	4.18	4.89		3.84		4.58	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	4.32						
Intersection LOS	A						

Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	33.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.708

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	161	508	64	78	849	181	97	261	174	55	363	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	161	508	64	78	849	181	97	261	174	55	363	63
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	144	18	22	241	51	28	74	49	16	103	18
Total Analysis Volume [veh/h]	183	577	73	89	965	206	110	297	198	63	413	72
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	38	0	22	38	0	12	39	0	11	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	62	62	7	56	56	7	18	18	6	18	18
g / C, Green / Cycle	0.12	0.57	0.57	0.06	0.51	0.51	0.06	0.17	0.17	0.05	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.10	0.18	0.18	0.05	0.32	0.32	0.03	0.14	0.14	0.04	0.13	0.13
s, saturation flow rate [veh/h]	1781	1870	1797	1781	1870	1758	3459	1870	1626	1781	1870	1775
c, Capacity [veh/h]	215	1060	1018	115	955	898	215	314	273	98	301	286
d1, Uniform Delay [s]	47.44	12.56	12.57	50.69	19.44	19.49	50.00	44.32	44.46	50.94	44.65	44.72
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.12	0.77	0.80	10.41	3.16	3.40	1.87	5.81	7.33	6.75	5.57	6.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.31	0.31	0.77	0.63	0.63	0.51	0.84	0.85	0.64	0.82	0.83
d, Delay for Lane Group [s/veh]	56.56	13.34	13.37	61.10	22.60	22.89	51.87	50.13	51.78	57.68	50.23	50.87
Lane Group LOS	E	B	B	E	C	C	D	D	D	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.44	4.39	4.23	2.74	11.54	10.98	1.52	7.39	6.68	1.88	6.97	6.73
50th-Percentile Queue Length [ft/ln]	136.02	109.67	105.74	68.56	288.38	274.54	38.03	184.84	166.90	47.08	174.14	168.17
95th-Percentile Queue Length [veh/ln]	9.27	7.82	7.60	4.94	17.11	16.42	2.74	11.85	10.91	3.39	11.29	10.98
95th-Percentile Queue Length [ft/ln]	231.65	195.55	190.06	123.42	427.63	410.40	68.46	296.33	272.83	84.74	282.35	274.51

Movement, Approach, & Intersection Results

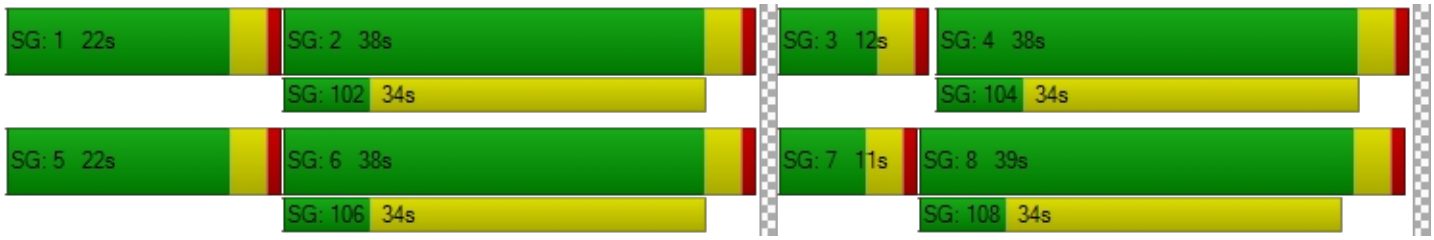
d_M, Delay for Movement [s/veh]	56.56	13.35	13.37	61.10	22.71	22.89	51.87	50.32	51.78	57.68	50.48	50.87
Movement LOS	E	B	B	E	C	C	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	22.84			25.45			51.08			51.36		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	33.93											
Intersection LOS	C											
Intersection V/C	0.708											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.58	44.58	44.58	44.58
l_p,int, Pedestrian LOS Score for Intersection	2.711	2.703	2.691	2.506
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	618	618	636	618
d_b, Bicycle Delay [s]	26.28	26.28	25.59	26.28
l_b,int, Bicycle LOS Score for Intersection	2.247	2.599	2.059	2.012
Bicycle LOS	B	B	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 1: Calle Contento at Rancho California Road

Control Type:	Roundabout	Delay (sec / veh):	4.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	31	9	9	12	8	37	33	462	56	14	392	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	9	9	12	8	37	33	462	56	14	392	13
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	3	3	4	2	11	10	135	16	4	114	4
Total Analysis Volume [veh/h]	36	11	11	14	9	43	39	540	65	16	458	15
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	605			520			40			88		
Exiting Flow Rate [veh/h]	92			66			548			576		
Demand Flow Rate [veh/h]	31	9	9	12	8	37	33	462	56	14	392	13
Adjusted Demand Flow Rate [veh/h]	36	11	11	14	9	43	39	540	65	16	458	15

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	60	24	44	309	349	235	265
Capacity of Entry and Bypass Lanes [veh/h]	745	885	885	1370	1370	1312	1312
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	731	868	868	1343	1343	1286	1286
X, volume / capacity	0.08	0.03	0.05	0.23	0.25	0.18	0.20

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.26	0.08	0.16	0.87	1.01	0.65	0.75
95th-Percentile Queue Length [ft]	6.45	2.04	3.91	21.68	25.36	16.25	18.83
Approach Delay [s/veh]	5.75	4.54		4.73		4.42	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	4.65						
Intersection LOS	A						

Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	31.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.659

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	94	1072	68	58	634	91	271	381	194	73	321	103
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	94	1072	68	58	634	91	271	381	194	73	321	103
Peak Hour Factor	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	275	17	15	163	23	69	98	50	19	82	26
Total Analysis Volume [veh/h]	96	1099	70	59	650	93	278	391	199	75	329	106
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	39	0	11	38	0	15	42	0	13	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	57	57	6	55	55	10	20	20	6	16	16
g / C, Green / Cycle	0.07	0.54	0.54	0.06	0.53	0.53	0.10	0.19	0.19	0.06	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.05	0.32	0.32	0.03	0.20	0.20	0.08	0.17	0.17	0.04	0.12	0.12
s, saturation flow rate [veh/h]	1781	1870	1831	1781	1870	1789	3459	1870	1660	1781	1870	1717
c, Capacity [veh/h]	122	1004	983	99	980	937	343	365	324	107	292	268
d1, Uniform Delay [s]	48.18	16.47	16.49	48.47	14.95	14.96	46.37	40.89	40.90	48.47	42.56	42.67
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.40	2.52	2.59	5.57	1.16	1.21	4.58	5.83	6.56	8.01	4.30	5.05
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.59	0.59	0.59	0.39	0.39	0.81	0.86	0.86	0.70	0.77	0.79
d, Delay for Lane Group [s/veh]	58.58	18.99	19.07	54.04	16.11	16.17	50.95	46.72	47.45	56.48	46.87	47.72
Lane Group LOS	E	B	B	D	B	B	D	D	D	E	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.82	9.84	9.68	1.66	5.54	5.32	3.76	8.32	7.46	2.16	5.91	5.59
50th-Percentile Queue Length [ft/ln]	70.50	246.00	241.92	41.50	138.52	133.10	93.94	208.05	186.59	54.03	147.67	139.73
95th-Percentile Queue Length [veh/ln]	5.08	14.98	14.78	2.99	9.40	9.11	6.76	13.05	11.94	3.89	9.89	9.47
95th-Percentile Queue Length [ft/ln]	126.90	374.61	369.46	74.70	235.03	227.71	169.09	326.32	298.60	97.25	247.32	236.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	58.58	19.03	19.07	54.04	16.13	16.17	50.95	46.87	47.45	56.48	47.14	47.72
Movement LOS	E	B	B	D	B	B	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	22.03			18.93			48.31			48.63		
Approach LOS	C			B			D			D		
d_I, Intersection Delay [s/veh]	31.87											
Intersection LOS	C											
Intersection V/C	0.659											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.11	42.11	42.11	42.11
l_p,int, Pedestrian LOS Score for Intersection	2.734	2.753	2.685	2.508
Crosswalk LOS	B	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	666	647	723	685
d_b, Bicycle Delay [s]	23.36	24.03	21.40	22.70
l_b,int, Bicycle LOS Score for Intersection	2.603	2.221	2.276	1.980
Bicycle LOS	B	B	B	A

Sequence

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

Intersection Level Of Service Report
Intersection 1: Calle Contento at Rancho California Road

Control Type:	Roundabout	Delay (sec / veh):	6.2
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	42	8	18	54	14	78	88	664	99	14	693	93
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	8	18	54	14	78	88	664	99	14	693	93
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	2	5	14	4	20	23	173	26	4	181	24
Total Analysis Volume [veh/h]	44	8	19	56	15	81	92	693	103	15	723	97
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	858			798			88			147		
Exiting Flow Rate [veh/h]	136			201			865			783		
Demand Flow Rate [veh/h]	42	8	18	54	14	78	88	664	99	14	693	93
Adjusted Demand Flow Rate [veh/h]	44	8	19	56	15	81	92	693	103	15	723	97

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	73	73	83	426	481	401	452
Capacity of Entry and Bypass Lanes [veh/h]	576	688	688	1312	1312	1243	1243
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	565	674	674	1286	1286	1218	1218
X, volume / capacity	0.13	0.11	0.12	0.32	0.37	0.32	0.36

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.43	0.35	0.41	1.42	1.70	1.41	1.68
95th-Percentile Queue Length [ft]	10.73	8.79	10.19	35.60	42.61	35.17	42.07
Approach Delay [s/veh]	7.93	6.59		6.02		6.22	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	6.22						
Intersection LOS	A						

Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	42.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.690

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	97	471	104	235	568	134	154	649	151	121	583	134
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	471	104	235	568	134	154	649	151	121	583	134
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	121	27	60	145	34	39	166	39	31	149	34
Total Analysis Volume [veh/h]	99	482	106	241	581	137	158	664	155	124	597	137
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	38	0	22	45	0	11	42	0	13	44	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	44	44	17	53	53	7	29	29	9	31	31
g / C, Green / Cycle	0.07	0.38	0.38	0.15	0.46	0.46	0.06	0.25	0.25	0.08	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.06	0.16	0.16	0.14	0.20	0.20	0.05	0.23	0.23	0.07	0.20	0.20
s, saturation flow rate [veh/h]	1781	1870	1755	1781	1870	1748	3459	1870	1749	1781	1870	1751
c, Capacity [veh/h]	126	708	664	270	859	803	216	470	440	142	502	470
d1, Uniform Delay [s]	52.64	26.53	26.56	47.93	21.00	21.00	53.05	41.72	41.72	52.43	38.64	38.65
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.23	0.23	0.11	0.16	0.16
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.15	1.88	2.03	9.92	1.58	1.69	4.76	12.52	13.23	15.14	3.33	3.57
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.43	0.43	0.89	0.43	0.43	0.73	0.90	0.90	0.87	0.75	0.76
d, Delay for Lane Group [s/veh]	62.78	28.41	28.58	57.85	22.58	22.69	57.81	54.24	54.94	67.57	41.96	42.21
Lane Group LOS	E	C	C	E	C	C	E	D	D	E	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.17	6.49	6.15	7.50	7.03	6.59	2.39	13.15	12.38	4.14	10.20	9.59
50th-Percentile Queue Length [ft/ln]	79.23	162.23	153.82	187.58	175.68	164.85	59.67	328.65	309.55	103.39	255.06	239.84
95th-Percentile Queue Length [veh/ln]	5.70	10.67	10.22	12.00	11.37	10.81	4.30	19.09	18.15	7.44	15.44	14.67
95th-Percentile Queue Length [ft/ln]	142.62	266.67	255.51	299.88	284.37	270.13	107.41	477.30	453.82	186.11	386.02	366.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.78	28.48	28.58	57.85	22.62	22.69	57.81	54.50	54.94	67.57	42.06	42.21
Movement LOS	E	C	C	E	C	C	E	D	D	E	D	D
d_A, Approach Delay [s/veh]	33.44			31.49			55.10			45.77		
Approach LOS	C			C			E			D		
d_I, Intersection Delay [s/veh]	42.02											
Intersection LOS	D											
Intersection V/C	0.690											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.07	47.07	47.07	47.07
l_p,int, Pedestrian LOS Score for Intersection	2.613	2.650	2.759	2.676
Crosswalk LOS	B	B	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	591	713	660	695
d_b, Bicycle Delay [s]	28.56	23.84	25.81	24.49
l_b,int, Bicycle LOS Score for Intersection	2.126	2.351	2.366	2.267
Bicycle LOS	B	B	B	B

Sequence

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

Appendix E

Opening Year (2023) With Ambient Growth With Project Conditions
LOS Analysis Worksheets

Intersection Level Of Service Report
Intersection 1: Calle Contento at Rancho California Road

Control Type:	Roundabout	Delay (sec / veh):	4.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	30	6	14	7	6	39	28	277	46	38	492	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	6	14	7	6	39	28	277	46	38	492	16
Peak Hour Factor	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	2	4	2	2	10	7	74	12	10	132	4
Total Analysis Volume [veh/h]	32	6	15	7	6	42	30	297	49	41	527	17
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	341			612			55			69		
Exiting Flow Rate [veh/h]	98			54			613			325		
Demand Flow Rate [veh/h]	30	6	14	7	6	39	28	277	46	38	492	16
Adjusted Demand Flow Rate [veh/h]	32	6	15	7	6	42	30	297	49	41	527	17

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	55	14	43	181	204	281	317
Capacity of Entry and Bypass Lanes [veh/h]	975	814	814	1351	1351	1334	1334
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	956	798	798	1325	1325	1308	1308
X, volume / capacity	0.06	0.02	0.05	0.13	0.15	0.21	0.24

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.18	0.05	0.17	0.46	0.53	0.79	0.93
95th-Percentile Queue Length [ft]	4.40	1.24	4.16	11.51	13.24	19.86	23.15
Approach Delay [s/veh]	4.26	4.94		3.88		4.67	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	4.39						
Intersection LOS	A						

Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	34.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.710

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	161	508	67	81	849	181	97	267	174	56	365	64
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	161	508	67	81	849	181	97	267	174	56	365	64
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	144	19	23	241	51	28	76	49	16	104	18
Total Analysis Volume [veh/h]	183	577	76	92	965	206	110	303	198	64	415	73
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	22	38	0	22	38	0	12	39	0	11	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	13	62	62	7	56	56	7	19	19	6	18	18
g / C, Green / Cycle	0.12	0.56	0.56	0.07	0.51	0.51	0.06	0.17	0.17	0.06	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.10	0.18	0.18	0.05	0.32	0.32	0.03	0.14	0.14	0.04	0.13	0.13
s, saturation flow rate [veh/h]	1781	1870	1795	1781	1870	1758	3459	1870	1628	1781	1870	1774
c, Capacity [veh/h]	215	1052	1010	119	951	894	215	317	276	99	305	289
d1, Uniform Delay [s]	47.44	12.80	12.81	50.57	19.59	19.64	50.00	44.23	44.37	50.94	44.50	44.56
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.12	0.79	0.82	10.25	3.20	3.45	1.87	5.82	7.31	6.91	5.37	5.92
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.32	0.32	0.78	0.63	0.64	0.51	0.84	0.85	0.65	0.82	0.83
d, Delay for Lane Group [s/veh]	56.56	13.59	13.63	60.82	22.79	23.09	51.87	50.06	51.67	57.84	49.87	50.48
Lane Group LOS	E	B	B	E	C	C	D	D	D	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	5.44	4.47	4.30	2.83	11.59	11.04	1.52	7.48	6.76	1.92	6.99	6.74
50th-Percentile Queue Length [ft/ln]	136.02	111.64	107.49	70.68	289.84	275.98	38.03	186.97	168.88	47.90	174.64	168.54
95th-Percentile Queue Length [veh/ln]	9.27	7.93	7.70	5.09	17.18	16.49	2.74	11.96	11.02	3.45	11.32	11.00
95th-Percentile Queue Length [ft/ln]	231.65	198.29	192.50	127.23	429.45	412.21	68.46	299.09	275.44	86.21	283.01	274.99

Movement, Approach, & Intersection Results

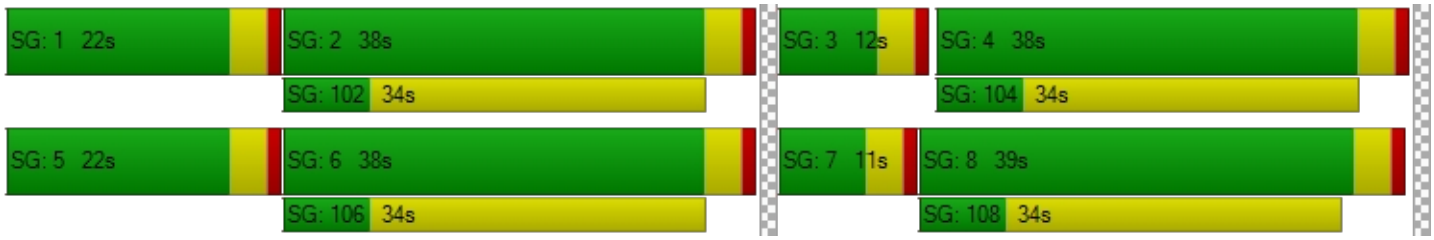
d_M, Delay for Movement [s/veh]	56.56	13.61	13.63	60.82	22.91	23.09	51.87	50.26	51.67	57.84	50.11	50.48
Movement LOS	E	B	B	E	C	C	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	23.01			25.70			51.01			51.06		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	34.04											
Intersection LOS	C											
Intersection V/C	0.710											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.58	44.58	44.58	44.58
l_p,int, Pedestrian LOS Score for Intersection	2.712	2.704	2.692	2.509
Crosswalk LOS	B	B	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	618	618	636	618
d_b, Bicycle Delay [s]	26.28	26.28	25.59	26.28
l_b,int, Bicycle LOS Score for Intersection	2.249	2.602	2.064	2.015
Bicycle LOS	B	B	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 3: Calle Contento at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Calle Contento		Calle Contento		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Calle Contento		Calle Contento		Site Access	
Base Volume Input [veh/h]	33	18	1	46	7	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	33	18	1	46	7	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	5	0	12	2	0
Total Analysis Volume [veh/h]	35	19	1	48	7	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.32	0.00	9.01	8.54
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.05	0.05	0.58	0.58
d_A, Approach Delay [s/veh]	0.00		0.15		9.01	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.64					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 1: Calle Contento at Rancho California Road

Control Type:	Roundabout	Delay (sec / veh):	4.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	31	14	9	20	14	60	54	462	56	14	392	20
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	31	14	9	20	14	60	54	462	56	14	392	20
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	4	3	6	4	18	16	135	16	4	114	6
Total Analysis Volume [veh/h]	36	16	11	23	16	70	63	540	65	16	458	23
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	639			520			56			117		
Exiting Flow Rate [veh/h]	99			104			575			585		
Demand Flow Rate [veh/h]	31	14	9	20	14	60	54	462	56	14	392	20
Adjusted Demand Flow Rate [veh/h]	36	16	11	23	16	70	63	540	65	16	458	23

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	65	40	72	321	362	239	269
Capacity of Entry and Bypass Lanes [veh/h]	720	885	885	1350	1350	1277	1277
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	706	868	868	1323	1323	1252	1252
X, volume / capacity	0.09	0.04	0.08	0.24	0.27	0.19	0.21

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.29	0.14	0.26	0.93	1.09	0.68	0.79
95th-Percentile Queue Length [ft]	7.33	3.53	6.57	23.17	27.16	17.12	19.87
Approach Delay [s/veh]	6.05	4.79		4.91		4.59	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	4.84						
Intersection LOS	A						

Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	32.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.672

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	94	1072	73	63	634	91	271	392	194	79	333	109
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	94	1072	73	63	634	91	271	392	194	79	333	109
Peak Hour Factor	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	275	19	16	163	23	69	101	50	20	85	28
Total Analysis Volume [veh/h]	96	1099	75	65	650	93	278	402	199	81	342	112
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	39	0	11	38	0	15	42	0	13	40	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	7	56	56	6	55	55	10	21	21	6	17	17
g / C, Green / Cycle	0.07	0.53	0.53	0.06	0.52	0.52	0.10	0.20	0.20	0.06	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.05	0.32	0.32	0.04	0.20	0.20	0.08	0.17	0.17	0.05	0.13	0.13
s, saturation flow rate [veh/h]	1781	1870	1828	1781	1870	1789	3459	1870	1664	1781	1870	1715
c, Capacity [veh/h]	122	993	970	103	972	930	343	370	330	109	299	275
d1, Uniform Delay [s]	48.18	16.95	16.96	48.45	15.22	15.22	46.37	40.72	40.73	48.52	42.40	42.51
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.40	2.65	2.73	6.30	1.18	1.24	4.58	5.83	6.53	9.46	4.52	5.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.60	0.60	0.63	0.39	0.39	0.81	0.86	0.86	0.74	0.78	0.80
d, Delay for Lane Group [s/veh]	58.58	19.60	19.69	54.75	16.40	16.46	50.95	46.55	47.26	57.98	46.92	47.78
Lane Group LOS	E	B	B	D	B	B	D	D	D	E	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.82	10.09	9.91	1.84	5.60	5.38	3.76	8.46	7.60	2.37	6.19	5.84
50th-Percentile Queue Length [ft/ln]	70.50	252.21	247.78	46.04	140.10	134.60	93.94	211.55	190.03	59.20	154.69	145.96
95th-Percentile Queue Length [veh/ln]	5.08	15.30	15.07	3.31	9.49	9.19	6.76	13.23	12.12	4.26	10.27	9.80
95th-Percentile Queue Length [ft/ln]	126.90	382.43	376.86	82.86	237.15	229.74	169.09	330.82	303.06	106.56	256.68	245.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	58.58	19.64	19.69	54.75	16.42	16.46	50.95	46.70	47.26	57.98	47.19	47.78
Movement LOS	E	B	B	D	B	B	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	22.59			19.51			48.17			48.95		
Approach LOS	C			B			D			D		
d_I, Intersection Delay [s/veh]	32.35											
Intersection LOS	C											
Intersection V/C	0.672											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.11	42.11	42.11	42.11
l_p,int, Pedestrian LOS Score for Intersection	2.736	2.755	2.689	2.517
Crosswalk LOS	B	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	666	647	723	685
d_b, Bicycle Delay [s]	23.36	24.03	21.40	22.70
l_b,int, Bicycle LOS Score for Intersection	2.607	2.226	2.285	2.001
Bicycle LOS	B	B	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 3: Calle Contento at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.046

Intersection Setup

Name	Calle Contento		Calle Contento		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Calle Contento		Calle Contento		Site Access	
Base Volume Input [veh/h]	55	33	2	57	37	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	55	33	2	57	37	2
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	9	1	15	10	1
Total Analysis Volume [veh/h]	58	35	2	60	39	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.40	0.00	9.43	8.86
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.15	0.15
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.10	0.10	3.76	3.76
d_A, Approach Delay [s/veh]	0.00		0.24		9.41	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.04					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 1: Calle Contento at Rancho California Road

Control Type:	Roundabout	Delay (sec / veh):	7.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	42	32	18	89	40	184	182	664	99	14	693	124
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	42	32	18	89	40	184	182	664	99	14	693	124
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	8	5	23	10	48	47	173	26	4	181	32
Total Analysis Volume [veh/h]	44	33	19	93	42	192	190	693	103	15	723	129
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	996			798			153			272		
Exiting Flow Rate [veh/h]	163			359			978			821		
Demand Flow Rate [veh/h]	42	32	18	89	40	184	182	664	99	14	693	124
Adjusted Demand Flow Rate [veh/h]	44	33	19	93	42	192	190	693	103	15	723	129

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	98	138	196	473	534	416	469
Capacity of Entry and Bypass Lanes [veh/h]	500	688	688	1236	1236	1109	1109
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	491	674	674	1212	1212	1087	1087
X, volume / capacity	0.20	0.20	0.29	0.38	0.43	0.38	0.42

Movement, Approach, & Intersection Results

Lane LOS	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.72	0.74	1.17	1.82	2.22	1.76	2.14
95th-Percentile Queue Length [ft]	18.01	18.59	29.32	45.59	55.48	44.09	53.50
Approach Delay [s/veh]	10.11	8.39		7.06		7.52	
Approach LOS	B	A		A		A	
Intersection Delay [s/veh]	7.55						
Intersection LOS	A						

Intersection Level Of Service Report

Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	45.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.746

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	97	471	128	259	568	134	154	696	151	147	636	160
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	97	471	128	259	568	134	154	696	151	147	636	160
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	121	33	66	145	34	39	178	39	38	163	41
Total Analysis Volume [veh/h]	99	482	131	265	581	137	158	712	155	150	651	164
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	115
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	15	38	0	22	45	0	11	42	0	13	44	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	42	42	18	52	52	7	30	30	9	32	32
g / C, Green / Cycle	0.07	0.36	0.36	0.16	0.45	0.45	0.06	0.26	0.26	0.08	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.06	0.17	0.17	0.15	0.20	0.20	0.05	0.24	0.24	0.08	0.23	0.23
s, saturation flow rate [veh/h]	1781	1870	1734	1781	1870	1748	3459	1870	1756	1781	1870	1742
c, Capacity [veh/h]	126	675	626	280	837	782	216	492	462	142	525	489
d1, Uniform Delay [s]	52.64	28.31	28.34	48.06	21.94	21.94	53.05	41.07	41.08	53.00	38.49	38.49
k, delay calibration	0.11	0.50	0.50	0.14	0.50	0.50	0.11	0.26	0.26	0.11	0.21	0.21
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.15	2.34	2.54	17.87	1.70	1.82	4.76	14.05	14.79	51.62	5.46	5.84
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.47	0.47	0.95	0.44	0.44	0.73	0.91	0.91	1.06	0.80	0.80
d, Delay for Lane Group [s/veh]	62.78	30.65	30.88	65.93	23.65	23.76	57.81	55.12	55.87	104.62	43.95	44.33
Lane Group LOS	E	C	C	E	C	C	E	E	E	F	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.17	7.13	6.69	8.88	7.23	6.78	2.39	14.06	13.30	6.12	11.75	10.99
50th-Percentile Queue Length [ft/ln]	79.23	178.37	167.31	222.07	180.70	169.57	59.67	351.43	332.39	153.04	293.69	274.83
95th-Percentile Queue Length [veh/ln]	5.70	11.52	10.94	13.77	11.64	11.05	4.30	20.21	19.28	10.38	17.37	16.43
95th-Percentile Queue Length [ft/ln]	142.62	287.89	273.38	344.26	290.92	276.34	107.41	505.15	481.89	259.42	434.22	410.77

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	62.78	30.73	30.88	65.93	23.69	23.76	57.81	55.40	55.87	104.62	44.08	44.33
Movement LOS	E	C	C	E	C	C	E	E	E	F	D	D
d_A, Approach Delay [s/veh]	35.21			35.09			55.84			53.54		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	45.72											
Intersection LOS	D											
Intersection V/C	0.746											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	47.07	47.07	47.07	47.07
l_p,int, Pedestrian LOS Score for Intersection	2.623	2.660	2.775	2.716
Crosswalk LOS	B	B	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	591	713	660	695
d_b, Bicycle Delay [s]	28.56	23.84	25.81	24.49
l_b,int, Bicycle LOS Score for Intersection	2.147	2.371	2.405	2.356
Bicycle LOS	B	B	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 3: Calle Contento at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	14.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.312

Intersection Setup

Name	Calle Contento		Calle Contento		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Calle Contento		Calle Contento		Site Access	
Base Volume Input [veh/h]	189	149	8	146	167	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	189	149	8	146	167	9
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	39	2	38	44	2
Total Analysis Volume [veh/h]	199	157	8	154	176	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.31	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.01	0.00	14.36	12.71
Movement LOS	A	A	A	A	B	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	1.39	1.39
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.50	0.50	34.87	34.87
d_A, Approach Delay [s/veh]	0.00		0.40		14.28	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	3.85					
Intersection LOS	B					

Appendix F

Opening Year (2023) With Ambient Growth & Cumulative Projects
Without Project Conditions
LOS Analysis Worksheets

Intersection Level Of Service Report
Intersection 1: Calle Contento at Rancho California Road

Control Type:	Roundabout	Delay (sec / veh):	4.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	70	4	14	6	6	36	18	325	72	39	542	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	4	14	6	6	36	18	325	72	39	542	12
Peak Hour Factor	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	1	4	2	2	10	5	87	19	10	145	3
Total Analysis Volume [veh/h]	75	4	15	6	6	39	19	348	77	42	580	13
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	380			711			55			100		
Exiting Flow Rate [veh/h]	128			37			708			376		
Demand Flow Rate [veh/h]	70	4	14	6	6	36	18	325	72	39	542	12
Adjusted Demand Flow Rate [veh/h]	75	4	15	6	6	39	19	348	77	42	580	13

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	96	13	40	213	241	305	344
Capacity of Entry and Bypass Lanes [veh/h]	937	744	744	1351	1351	1297	1297
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	918	729	729	1325	1325	1272	1272
X, volume / capacity	0.10	0.02	0.05	0.16	0.18	0.23	0.26

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.34	0.05	0.17	0.56	0.65	0.91	1.07
95th-Percentile Queue Length [ft]	8.53	1.25	4.23	13.98	16.13	22.84	26.76
Approach Delay [s/veh]	4.88	5.40		4.11		5.03	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	4.70						
Intersection LOS	A						

Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	39.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.849

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	186	537	97	104	918	250	122	321	227	88	398	79
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	186	537	97	104	918	250	122	321	227	88	398	79
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	153	28	30	261	71	35	91	64	25	113	22
Total Analysis Volume [veh/h]	211	610	110	118	1043	284	139	365	258	100	452	90
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	38	0	21	38	0	13	40	0	11	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	55	55	9	50	50	7	23	23	7	23	23
g / C, Green / Cycle	0.14	0.50	0.50	0.08	0.45	0.45	0.06	0.21	0.21	0.06	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.12	0.20	0.20	0.07	0.37	0.37	0.04	0.18	0.18	0.06	0.15	0.15
s, saturation flow rate [veh/h]	1781	1870	1772	1781	1870	1735	3459	1870	1616	1781	1870	1764
c, Capacity [veh/h]	242	939	889	148	840	779	220	384	332	115	386	364
d1, Uniform Delay [s]	46.64	17.02	17.02	49.59	26.32	26.58	50.30	42.30	42.35	51.06	40.74	40.79
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.12	0.13	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.44	1.24	1.31	9.48	8.46	9.81	3.00	6.76	8.18	17.68	2.55	2.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.39	0.39	0.80	0.81	0.83	0.63	0.87	0.87	0.87	0.72	0.73
d, Delay for Lane Group [s/veh]	56.07	18.26	18.33	59.07	34.78	36.38	53.30	49.06	50.54	68.73	43.29	43.55
Lane Group LOS	E	B	B	E	C	D	D	D	D	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.27	6.00	5.70	3.57	16.95	16.40	1.96	9.40	8.32	3.29	7.26	6.92
50th-Percentile Queue Length [ft/ln]	156.73	149.93	142.49	89.22	423.83	410.06	48.91	235.08	207.89	82.22	181.43	172.95
95th-Percentile Queue Length [veh/ln]	10.38	10.01	9.62	6.42	23.71	23.04	3.52	14.43	13.05	5.92	11.68	11.23
95th-Percentile Queue Length [ft/ln]	259.39	250.33	240.38	160.59	592.65	576.11	88.04	360.81	326.13	148.00	291.88	280.80

Movement, Approach, & Intersection Results

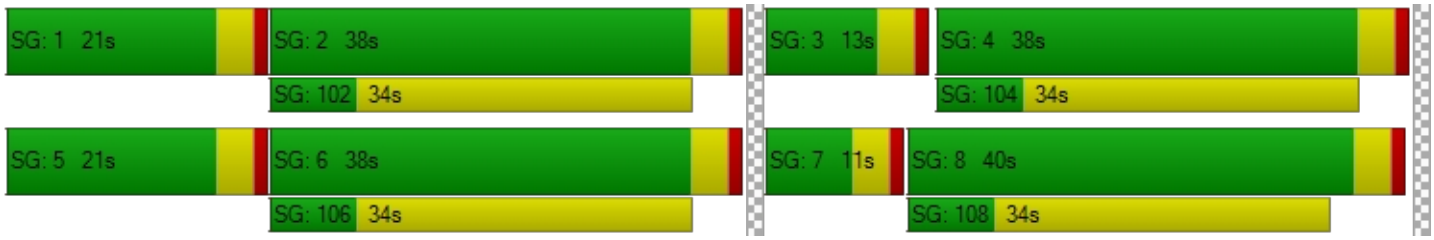
d_M, Delay for Movement [s/veh]	56.07	18.29	18.33	59.07	35.33	36.38	53.30	49.19	50.54	68.73	43.39	43.55
Movement LOS	E	B	B	E	D	D	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	26.85			37.48			50.39			47.36		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	39.14											
Intersection LOS	D											
Intersection V/C	0.849											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.58	44.58	44.58	44.58
l_p,int, Pedestrian LOS Score for Intersection	2.764	2.755	2.740	2.550
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	618	618	654	618
d_b, Bicycle Delay [s]	26.28	26.28	24.91	26.28
l_b,int, Bicycle LOS Score for Intersection	2.328	2.752	2.188	2.089
Bicycle LOS	B	C	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 1: Calle Contento at Rancho California Road

Control Type:	Roundabout	Delay (sec / veh):	5.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	79	12	10	13	11	40	36	541	103	15	469	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	79	12	10	13	11	40	36	541	103	15	469	14
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	4	3	4	3	12	11	158	30	4	137	4
Total Analysis Volume [veh/h]	92	14	12	15	13	47	42	632	120	18	548	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	703			671			47			151		
Exiting Flow Rate [veh/h]	154			73			701			672		
Demand Flow Rate [veh/h]	79	12	10	13	11	40	36	541	103	15	469	14
Adjusted Demand Flow Rate [veh/h]	92	14	12	15	13	47	42	632	120	18	548	16

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	121	29	48	381	430	280	315
Capacity of Entry and Bypass Lanes [veh/h]	674	771	771	1361	1361	1238	1238
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	661	756	756	1334	1334	1214	1214
X, volume / capacity	0.18	0.04	0.06	0.28	0.32	0.23	0.25

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.65	0.12	0.20	1.15	1.37	0.87	1.01
95th-Percentile Queue Length [ft]	16.16	2.88	4.96	28.85	34.15	21.67	25.34
Approach Delay [s/veh]	7.52	5.29		5.34		5.11	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	5.42						
Intersection LOS	A						

Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	36.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.774

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	105	1118	106	94	664	138	350	465	204	110	404	139
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	1118	106	94	664	138	350	465	204	110	404	139
Peak Hour Factor	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	287	27	24	170	35	90	119	52	28	104	36
Total Analysis Volume [veh/h]	108	1147	109	96	681	142	359	477	209	113	414	143
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	39	0	11	38	0	17	43	0	12	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	50	50	7	49	49	13	24	24	8	19	19
g / C, Green / Cycle	0.08	0.48	0.48	0.07	0.47	0.47	0.12	0.23	0.23	0.08	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.06	0.34	0.34	0.05	0.23	0.23	0.10	0.19	0.19	0.06	0.16	0.16
s, saturation flow rate [veh/h]	1781	1870	1814	1781	1870	1759	3459	1870	1679	1781	1870	1709
c, Capacity [veh/h]	136	889	862	120	872	821	422	427	383	137	342	313
d1, Uniform Delay [s]	47.75	21.93	21.98	48.31	19.34	19.35	45.21	38.82	38.82	47.82	41.52	41.58
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.03	4.91	5.14	11.44	1.93	2.06	4.91	4.73	5.25	11.65	5.80	6.61
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.72	0.72	0.80	0.49	0.49	0.85	0.85	0.85	0.82	0.85	0.85
d, Delay for Lane Group [s/veh]	57.78	26.83	27.12	59.76	21.28	21.40	50.12	43.55	44.07	59.47	47.31	48.19
Lane Group LOS	E	C	C	E	C	C	D	D	D	E	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.15	13.16	12.91	2.85	7.41	7.00	4.84	9.36	8.47	3.35	7.74	7.21
50th-Percentile Queue Length [ft/ln]	78.69	329.09	322.71	71.29	185.19	174.98	121.10	234.05	211.69	83.67	193.61	180.31
95th-Percentile Queue Length [veh/ln]	5.67	19.11	18.80	5.13	11.87	11.34	8.45	14.38	13.24	6.02	12.31	11.62
95th-Percentile Queue Length [ft/ln]	141.65	477.84	470.01	128.33	296.78	283.45	211.34	359.50	330.99	150.61	307.71	290.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.78	26.96	27.12	59.76	21.33	21.40	50.12	43.67	44.07	59.47	47.58	48.19
Movement LOS	E	C	C	E	C	C	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	29.41			25.35			45.97			49.71		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	36.21											
Intersection LOS	D											
Intersection V/C	0.774											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.11	42.11	42.11	42.11
l_p,int, Pedestrian LOS Score for Intersection	2.769	2.808	2.738	2.571
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	666	647	742	647
d_b, Bicycle Delay [s]	23.36	24.03	20.77	24.03
l_b,int, Bicycle LOS Score for Intersection	2.685	2.318	2.422	2.112
Bicycle LOS	B	B	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 1: Calle Contento at Rancho California Road

Control Type:	Roundabout	Delay (sec / veh):	11.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

Intersection Setup

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	196	20	23	57	26	94	102	965	266	18	1018	95
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	196	20	23	57	26	94	102	965	266	18	1018	95
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	5	6	15	7	25	27	252	69	5	266	25
Total Analysis Volume [veh/h]	205	21	24	59	27	98	106	1007	278	19	1063	99
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	1195			1313			107			339		
Exiting Flow Rate [veh/h]	330			231			1393			1112		
Demand Flow Rate [veh/h]	196	20	23	57	26	94	102	965	266	18	1018	95
Adjusted Demand Flow Rate [veh/h]	205	21	24	59	27	98	106	1007	278	19	1063	99

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	255	88	100	667	752	567	639
Capacity of Entry and Bypass Lanes [veh/h]	408	431	431	1289	1289	1044	1044
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	400	422	422	1263	1263	1023	1023
X, volume / capacity	0.63	0.20	0.23	0.52	0.58	0.54	0.61

Movement, Approach, & Intersection Results

Lane LOS	D	B	B	A	A	B	B
95th-Percentile Queue Length [veh]	4.11	0.76	0.89	3.09	3.97	3.37	4.35
95th-Percentile Queue Length [ft]	102.71	18.88	22.23	77.36	99.20	84.13	108.72
Approach Delay [s/veh]	26.03	12.02		9.11		11.19	
Approach LOS	D	B		A		B	
Intersection Delay [s/veh]	11.51						
Intersection LOS	B						

Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	82.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.016

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	104	508	226	361	604	190	219	950	162	258	920	274
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	508	226	361	604	190	219	950	162	258	920	274
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	130	58	92	155	49	56	243	41	66	235	70
Total Analysis Volume [veh/h]	106	520	231	369	618	194	224	972	166	264	942	280
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	23	38	0	25	40	0	12	38	0	19	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	34	34	21	46	46	8	34	34	15	41	41
g / C, Green / Cycle	0.07	0.28	0.28	0.18	0.38	0.38	0.07	0.28	0.28	0.13	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.06	0.21	0.21	0.21	0.23	0.23	0.06	0.31	0.31	0.15	0.34	0.34
s, saturation flow rate [veh/h]	1781	1870	1678	1781	1870	1719	3459	1870	1776	1781	1870	1726
c, Capacity [veh/h]	132	532	477	312	720	662	231	528	501	223	637	588
d1, Uniform Delay [s]	54.69	38.98	39.00	49.50	29.30	29.33	55.88	43.07	43.07	52.50	39.31	39.57
k, delay calibration	0.11	0.50	0.50	0.33	0.50	0.50	0.11	0.50	0.50	0.15	0.45	0.47
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.69	9.12	10.14	102.27	3.48	3.81	21.24	69.76	73.82	96.94	30.97	38.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.74	0.75	1.18	0.59	0.59	0.97	1.10	1.11	1.19	0.99	1.01
d, Delay for Lane Group [s/veh]	65.38	48.10	49.14	151.77	32.78	33.14	77.12	112.83	116.89	149.44	70.28	77.71
Lane Group LOS	E	D	D	F	C	C	E	F	F	F	E	F
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.55	11.88	10.81	18.16	10.31	9.58	4.06	25.69	24.97	12.69	23.56	23.24
50th-Percentile Queue Length [ft/ln]	88.64	296.94	270.20	453.91	257.78	239.55	101.54	642.32	624.35	317.17	588.90	581.01
95th-Percentile Queue Length [veh/ln]	6.38	17.53	16.20	27.27	15.58	14.66	7.31	36.10	35.37	19.87	31.52	31.34
95th-Percentile Queue Length [ft/ln]	159.55	438.24	404.99	681.69	389.43	366.46	182.76	902.56	884.19	496.64	787.90	783.52

Movement, Approach, & Intersection Results

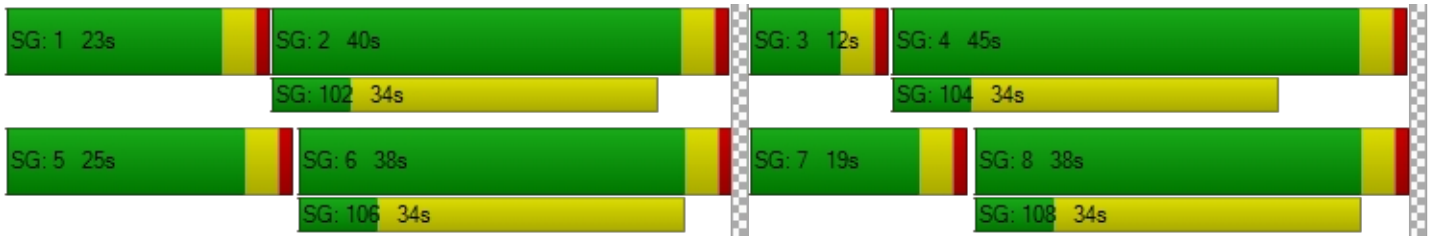
d_M, Delay for Movement [s/veh]	65.38	48.35	49.14	151.77	32.89	33.14	77.12	114.46	116.89	149.44	72.75	77.71
Movement LOS	E	D	D	F	C	C	E	F	F	F	E	E
d_A, Approach Delay [s/veh]	50.67			70.08			108.62			87.31		
Approach LOS	D			E			F			F		
d_I, Intersection Delay [s/veh]	82.66											
Intersection LOS	F											
Intersection V/C	1.016											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	2.685	2.744	2.890	2.910
Crosswalk LOS	B	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	600	567	683
d_b, Bicycle Delay [s]	30.82	29.40	30.82	26.01
l_b,int, Bicycle LOS Score for Intersection	2.267	2.534	2.683	2.786
Bicycle LOS	B	B	B	C

Sequence

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



Appendix G

Opening Year (2023) With Ambient Growth & Cumulative Projects
With Project Conditions
LOS Analysis Worksheets

Intersection Level Of Service Report
Intersection 1: Calle Contento at Rancho California Road

Control Type:	Roundabout	Delay (sec / veh):	4.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	70	7	14	7	7	40	29	325	72	39	542	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	7	14	7	7	40	29	325	72	39	542	16
Peak Hour Factor	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340	0.9340
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	2	4	2	2	11	8	87	19	10	145	4
Total Analysis Volume [veh/h]	75	7	15	7	7	43	31	348	77	42	580	17
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	394			711			57			115		
Exiting Flow Rate [veh/h]	129			56			712			377		
Demand Flow Rate [veh/h]	70	7	14	7	7	40	29	325	72	39	542	16
Adjusted Demand Flow Rate [veh/h]	75	7	15	7	7	43	31	348	77	42	580	17

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	99	15	44	219	247	307	346
Capacity of Entry and Bypass Lanes [veh/h]	924	744	744	1349	1349	1279	1279
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	906	729	729	1322	1322	1254	1254
X, volume / capacity	0.11	0.02	0.06	0.16	0.18	0.24	0.27

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.36	0.06	0.19	0.58	0.67	0.94	1.10
95th-Percentile Queue Length [ft]	8.97	1.47	4.69	14.46	16.70	23.45	27.50
Approach Delay [s/veh]	4.99	5.44		4.16		5.14	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	4.78						
Intersection LOS	A						

Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	39.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.852

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	186	537	100	107	918	250	122	327	227	89	400	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	186	537	100	107	918	250	122	327	227	89	400	80
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	153	28	30	261	71	35	93	64	25	114	23
Total Analysis Volume [veh/h]	211	610	114	122	1043	284	139	372	258	101	455	91
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	21	38	0	21	38	0	13	40	0	11	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	15	55	55	9	49	49	7	23	23	7	23	23
g / C, Green / Cycle	0.14	0.50	0.50	0.08	0.45	0.45	0.06	0.21	0.21	0.06	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.12	0.20	0.20	0.07	0.37	0.37	0.04	0.18	0.18	0.06	0.15	0.15
s, saturation flow rate [veh/h]	1781	1870	1769	1781	1870	1735	3459	1870	1619	1781	1870	1763
c, Capacity [veh/h]	242	931	880	152	836	776	220	388	335	115	389	367
d1, Uniform Delay [s]	46.64	17.34	17.34	49.44	26.49	26.76	50.30	42.20	42.25	51.09	40.60	40.65
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.13	0.13	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.44	1.28	1.36	9.41	8.65	10.04	3.00	7.00	8.40	18.59	2.52	2.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.40	0.40	0.80	0.82	0.83	0.63	0.87	0.87	0.88	0.72	0.72
d, Delay for Lane Group [s/veh]	56.07	18.62	18.70	58.86	35.14	36.81	53.30	49.19	50.65	69.68	43.12	43.37
Lane Group LOS	E	B	B	E	D	D	D	D	D	E	D	D
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.27	6.11	5.80	3.68	17.05	16.51	1.96	9.52	8.43	3.35	7.30	6.96
50th-Percentile Queue Length [ft/ln]	156.73	152.78	144.98	92.08	426.17	412.68	48.91	238.11	210.77	83.68	182.49	173.88
95th-Percentile Queue Length [veh/ln]	10.38	10.17	9.75	6.63	23.82	23.17	3.52	14.59	13.19	6.02	11.73	11.28
95th-Percentile Queue Length [ft/ln]	259.39	254.13	243.71	165.75	595.46	579.26	88.04	364.65	329.81	150.62	293.26	282.01

Movement, Approach, & Intersection Results

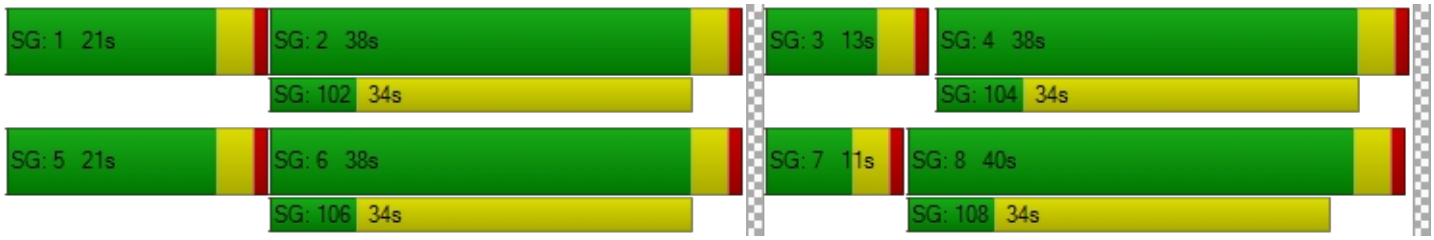
d_M, Delay for Movement [s/veh]	56.07	18.65	18.70	58.86	35.72	36.81	53.30	49.33	50.65	69.68	43.22	43.37
Movement LOS	E	B	B	E	D	D	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	27.10			37.88			50.49			47.37		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	39.40											
Intersection LOS	D											
Intersection V/C	0.852											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.58	44.58	44.58	44.58
l_p,int, Pedestrian LOS Score for Intersection	2.765	2.756	2.742	2.554
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	618	618	654	618
d_b, Bicycle Delay [s]	26.28	26.28	24.91	26.28
l_b,int, Bicycle LOS Score for Intersection	2.331	2.755	2.194	2.093
Bicycle LOS	B	C	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 3: Calle Contento at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	9.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

Intersection Setup

Name	Calle Contento		Calle Contento		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Calle Contento		Calle Contento		Site Access	
Base Volume Input [veh/h]	35	18	1	48	7	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	35	18	1	48	7	0
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	5	0	13	2	0
Total Analysis Volume [veh/h]	37	19	1	51	7	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.33	0.00	9.04	8.55
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.02	0.02
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.05	0.05	0.59	0.59
d_A, Approach Delay [s/veh]	0.00		0.14		9.04	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.61					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 1: Calle Contento at Rancho California Road

Control Type:	Roundabout	Delay (sec / veh):	5.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

Intersection Setup

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	79	17	10	21	17	63	57	541	103	15	469	21
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	79	17	10	21	17	63	57	541	103	15	469	21
Peak Hour Factor	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560	0.8560
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	5	3	6	5	18	17	158	30	4	137	6
Total Analysis Volume [veh/h]	92	20	12	25	20	74	67	632	120	18	548	25
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	738			671			64			183		
Exiting Flow Rate [veh/h]	161			114			728			682		
Demand Flow Rate [veh/h]	79	17	10	21	17	63	57	541	103	15	469	21
Adjusted Demand Flow Rate [veh/h]	92	20	12	25	20	74	67	632	120	18	548	25

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	127	46	76	393	443	284	320
Capacity of Entry and Bypass Lanes [veh/h]	650	771	771	1340	1340	1203	1203
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	638	756	756	1314	1314	1180	1180
X, volume / capacity	0.19	0.06	0.10	0.29	0.33	0.24	0.27

Movement, Approach, & Intersection Results

Lane LOS	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.72	0.19	0.32	1.23	1.46	0.92	1.07
95th-Percentile Queue Length [ft]	17.93	4.74	8.11	30.78	36.55	22.93	26.87
Approach Delay [s/veh]	7.99	5.61		5.55		5.34	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	5.66						
Intersection LOS	A						

Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	36.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.786

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	105	1118	111	99	664	138	350	476	204	116	416	145
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	1118	111	99	664	138	350	476	204	116	416	145
Peak Hour Factor	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	287	28	25	170	35	90	122	52	30	107	37
Total Analysis Volume [veh/h]	108	1147	114	102	681	142	359	488	209	119	427	149
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	12	39	0	11	38	0	17	43	0	12	38	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	8	49	49	7	49	49	13	25	25	8	20	20
g / C, Green / Cycle	0.08	0.47	0.47	0.07	0.46	0.46	0.12	0.23	0.23	0.08	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.06	0.34	0.34	0.06	0.23	0.23	0.10	0.20	0.20	0.07	0.16	0.16
s, saturation flow rate [veh/h]	1781	1870	1811	1781	1870	1759	3459	1870	1682	1781	1870	1707
c, Capacity [veh/h]	136	879	851	120	862	811	422	437	393	137	352	322
d1, Uniform Delay [s]	47.75	22.44	22.50	48.49	19.74	19.74	45.21	38.41	38.42	47.99	41.23	41.29
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.03	5.23	5.49	14.94	2.00	2.13	4.91	4.56	5.07	14.98	5.82	6.59
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.73	0.73	0.85	0.49	0.49	0.85	0.84	0.84	0.87	0.85	0.86
d, Delay for Lane Group [s/veh]	57.78	27.67	27.99	63.43	21.74	21.87	50.12	42.97	43.49	62.97	47.05	47.88
Lane Group LOS	E	C	C	E	C	C	D	D	D	E	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.15	13.46	13.20	3.13	7.51	7.09	4.84	9.45	8.56	3.64	8.01	7.44
50th-Percentile Queue Length [ft/ln]	78.69	336.61	329.95	78.31	187.64	177.29	121.10	236.19	214.03	90.97	200.17	185.94
95th-Percentile Queue Length [veh/ln]	5.67	19.48	19.16	5.64	12.00	11.46	8.45	14.49	13.36	6.55	12.65	11.91
95th-Percentile Queue Length [ft/ln]	141.65	487.06	478.89	140.95	299.96	286.47	211.34	362.21	334.00	163.75	316.18	297.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.78	27.81	27.99	63.43	21.79	21.87	50.12	43.10	43.49	62.97	47.29	47.88
Movement LOS	E	C	C	E	C	C	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	30.19			26.39			45.56			50.10		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	36.76											
Intersection LOS	D											
Intersection V/C	0.786											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.11	42.11	42.11	42.11
l_p,int, Pedestrian LOS Score for Intersection	2.771	2.810	2.742	2.580
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	666	647	742	647
d_b, Bicycle Delay [s]	23.36	24.03	20.77	24.03
l_b,int, Bicycle LOS Score for Intersection	2.689	2.323	2.431	2.133
Bicycle LOS	B	B	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 3: Calle Contento at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.046

Intersection Setup

Name	Calle Contento		Calle Contento		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Calle Contento		Calle Contento		Site Access	
Base Volume Input [veh/h]	61	33	2	63	37	2
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	33	2	63	37	2
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	9	1	17	10	1
Total Analysis Volume [veh/h]	64	35	2	66	39	2
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.41	0.00	9.51	8.90
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.15	0.15
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.10	0.10	3.82	3.82
d_A, Approach Delay [s/veh]	0.00		0.22		9.48	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.94					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 1: Calle Contento at Rancho California Road

Control Type:	Roundabout	Delay (sec / veh):	16.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

Intersection Setup

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Calle Contento			Calle Contento			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	196	44	23	92	52	200	196	965	266	18	1018	126
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	196	44	23	92	52	200	196	965	266	18	1018	126
Peak Hour Factor	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580	0.9580
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	11	6	24	14	52	51	252	69	5	266	33
Total Analysis Volume [veh/h]	205	46	24	96	54	209	205	1007	278	19	1063	132
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	1334			1313			172			465		
Exiting Flow Rate [veh/h]	358			391			1507			1150		
Demand Flow Rate [veh/h]	196	44	23	92	52	200	196	965	266	18	1018	126
Adjusted Demand Flow Rate [veh/h]	205	46	24	96	54	209	205	1007	278	19	1063	132

Lanes

Overwrite Calculated Critical Headway	No	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Overwrite Calculated Follow-Up Time	No	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1420.00	1420.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00091	0.00091	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	281	154	214	715	806	582	657
Capacity of Entry and Bypass Lanes [veh/h]	354	431	431	1214	1214	930	930
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	347	422	422	1191	1191	912	912
X, volume / capacity	0.79	0.36	0.50	0.59	0.66	0.63	0.71

Movement, Approach, & Intersection Results

Lane LOS	E	B	C	B	B	B	C
95th-Percentile Queue Length [veh]	6.61	1.58	2.68	4.03	5.35	4.54	6.09
95th-Percentile Queue Length [ft]	165.23	39.58	66.98	100.63	133.66	113.38	152.22
Approach Delay [s/veh]	44.35	17.38		11.20		14.98	
Approach LOS	E	C		B		B	
Intersection Delay [s/veh]	15.97						
Intersection LOS	C						

Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	98.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.074

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	104	508	250	385	604	190	219	997	162	284	973	300
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	508	250	385	604	190	219	997	162	284	973	300
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	130	64	99	155	49	56	255	41	73	249	77
Total Analysis Volume [veh/h]	106	520	256	394	618	194	224	1020	166	291	996	307
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	23	38	0	25	40	0	12	38	0	19	45	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	C
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	9	34	34	21	46	46	8	34	34	15	41	41
g / C, Green / Cycle	0.07	0.28	0.28	0.18	0.38	0.38	0.07	0.28	0.28	0.13	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.06	0.22	0.22	0.22	0.23	0.23	0.06	0.32	0.33	0.16	0.36	0.37
s, saturation flow rate [veh/h]	1781	1870	1664	1781	1870	1719	3459	1870	1780	1781	1870	1723
c, Capacity [veh/h]	132	532	473	312	720	662	231	528	503	223	637	587
d1, Uniform Delay [s]	54.69	39.38	39.39	49.50	29.30	29.34	55.88	43.06	43.06	52.50	39.57	39.57
k, delay calibration	0.11	0.50	0.50	0.37	0.50	0.50	0.11	0.50	0.50	0.20	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.69	10.41	11.62	136.45	3.47	3.82	21.24	85.89	90.96	150.40	48.80	61.51
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.77	0.77	1.26	0.59	0.59	0.97	1.15	1.16	1.31	1.05	1.08
d, Delay for Lane Group [s/veh]	65.38	49.79	51.01	185.95	32.77	33.15	77.12	128.96	134.03	202.90	88.36	101.07
Lane Group LOS	E	D	D	F	C	C	E	F	F	F	F	F
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.55	12.57	11.36	21.12	10.30	9.59	4.06	28.06	27.42	15.99	27.06	27.01
50th-Percentile Queue Length [ft/ln]	88.64	314.31	284.02	527.88	257.62	239.72	101.54	701.52	685.56	399.85	676.60	675.25
95th-Percentile Queue Length [veh/ln]	6.38	18.39	16.89	31.94	15.57	14.67	7.31	39.90	39.29	25.05	36.77	37.48
95th-Percentile Queue Length [ft/ln]	159.55	459.69	422.21	798.60	389.24	366.68	182.76	997.54	982.35	626.18	919.26	937.10

Movement, Approach, & Intersection Results

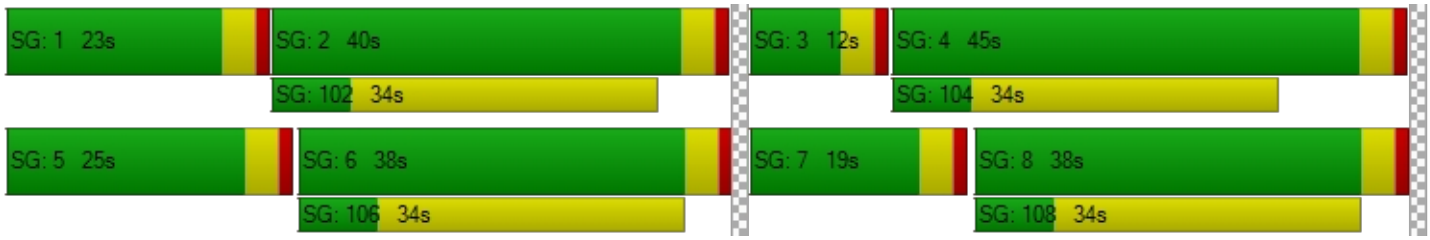
d_M, Delay for Movement [s/veh]	65.38	50.05	51.01	185.95	32.89	33.15	77.12	131.02	134.03	202.90	92.55	101.07
Movement LOS	E	D	D	F	C	C	E	F	F	F	F	F
d_A, Approach Delay [s/veh]	52.17			82.94			122.81			114.34		
Approach LOS	D			F			F			F		
d_I, Intersection Delay [s/veh]	98.48											
Intersection LOS	F											
Intersection V/C	1.074											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	2.695	2.754	2.906	2.950
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	600	567	683
d_b, Bicycle Delay [s]	30.82	29.40	30.82	26.01
l_b,int, Bicycle LOS Score for Intersection	2.287	2.555	2.723	2.875
Bicycle LOS	B	B	B	C

Sequence

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



Intersection Level Of Service Report
Intersection 3: Calle Contento at Site Access

Control Type:	Two-way stop	Delay (sec / veh):	15.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.339

Intersection Setup

Name	Calle Contento		Calle Contento		Site Access	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Calle Contento		Calle Contento		Site Access	
Base Volume Input [veh/h]	218	149	8	177	167	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	218	149	8	177	167	9
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	39	2	47	44	2
Total Analysis Volume [veh/h]	229	157	8	186	176	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.34	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.09	0.00	15.58	13.56
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.02	1.56	1.56
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.52	0.52	39.12	39.12
d_A, Approach Delay [s/veh]	0.00		0.33		15.48	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.83					
Intersection LOS	C					

Appendix H

Opening Year (2023) With Ambient Growth & Cumulative Projects
With Project Conditions With Improvements
LOS Analysis Worksheets

Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	38.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.852

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	186	537	100	107	918	250	122	327	227	89	400	80
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	186	537	100	107	918	250	122	327	227	89	400	80
Peak Hour Factor	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800	0.8800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	153	28	30	261	71	35	93	64	25	114	23
Total Analysis Volume [veh/h]	211	610	114	122	1043	284	139	372	258	101	455	91
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	110
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	1	6	0	5	2	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,5
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	7
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	20	38	0	20	38	0	14	40	0	12	38	38
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	27
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	110	110	110	110	110	110	110	110	110	110	110	110
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	15	54	54	9	49	49	7	23	23	8	24	37
g / C, Green / Cycle	0.14	0.49	0.49	0.09	0.44	0.44	0.06	0.21	0.21	0.07	0.22	0.34
(v / s)_i Volume / Saturation Flow Rate	0.12	0.20	0.20	0.07	0.37	0.37	0.04	0.18	0.18	0.06	0.13	0.06
s, saturation flow rate [veh/h]	1781	1870	1769	1781	1870	1735	3459	1870	1619	1781	3560	1589
c, Capacity [veh/h]	241	915	866	154	824	764	220	388	336	127	767	537
d1, Uniform Delay [s]	46.68	17.92	17.92	49.32	27.15	27.42	50.30	42.19	42.24	50.31	38.86	25.58
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.12	0.13	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.61	1.34	1.42	8.79	9.43	10.97	3.00	6.87	8.25	10.53	0.74	0.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.87	0.41	0.41	0.79	0.83	0.84	0.63	0.87	0.87	0.79	0.59	0.17
d, Delay for Lane Group [s/veh]	56.29	19.26	19.34	58.11	36.57	38.40	53.30	49.06	50.50	60.84	39.60	25.73
Lane Group LOS	E	B	B	E	D	D	D	D	D	E	D	C
Critical Lane Group	Yes	No	No	No	No	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	6.28	6.24	5.92	3.66	17.42	16.88	1.96	9.51	8.42	3.10	5.58	1.70
50th-Percentile Queue Length [ft/ln]	157.05	155.95	147.99	91.43	435.40	422.09	48.91	237.76	210.41	77.60	139.62	42.46
95th-Percentile Queue Length [veh/ln]	10.39	10.33	9.91	6.58	24.26	23.62	3.52	14.57	13.17	5.59	9.46	3.06
95th-Percentile Queue Length [ft/ln]	259.81	258.35	247.75	164.58	606.50	590.55	88.04	364.20	329.36	139.68	236.52	76.43

Movement, Approach, & Intersection Results

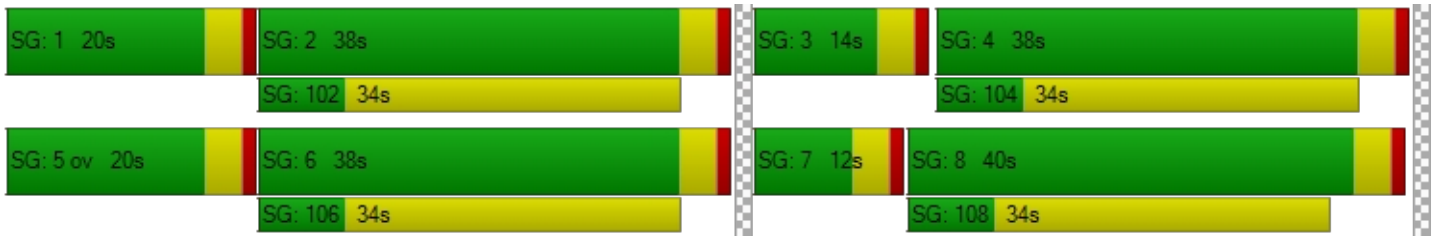
d_M, Delay for Movement [s/veh]	56.29	19.29	19.34	58.11	37.20	38.40	53.30	49.19	50.50	60.84	39.60	25.73
Movement LOS	E	B	B	E	D	D	D	D	D	E	D	C
d_A, Approach Delay [s/veh]	27.64			39.20			50.37			40.97		
Approach LOS	C			D			D			D		
d_I, Intersection Delay [s/veh]	38.92											
Intersection LOS	D											
Intersection V/C	0.852											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	44.58	44.58	44.58	44.58
l_p,int, Pedestrian LOS Score for Intersection	2.765	2.756	2.742	2.666
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	618	618	654	618
d_b, Bicycle Delay [s]	26.28	26.28	24.91	26.28
l_b,int, Bicycle LOS Score for Intersection	2.331	2.755	2.194	2.093
Bicycle LOS	B	C	B	B

Sequence

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



Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	35.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.783

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	105	1118	111	99	664	138	350	476	204	116	416	145
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	1118	111	99	664	138	350	476	204	116	416	145
Peak Hour Factor	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750	0.9750
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	287	28	25	170	35	90	122	52	30	107	37
Total Analysis Volume [veh/h]	108	1147	114	102	681	142	359	488	209	119	427	149
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	105
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	1	6	0	5	2	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,5
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	7
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	12	39	0	11	38	0	17	43	0	12	38	38
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	27
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	105	105	105	105	105	105	105	105	105	105	105	105
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	8	50	50	7	49	49	13	24	24	8	19	30
g / C, Green / Cycle	0.08	0.48	0.48	0.07	0.47	0.47	0.12	0.22	0.22	0.08	0.18	0.28
(v / s)_i Volume / Saturation Flow Rate	0.06	0.34	0.34	0.06	0.23	0.23	0.10	0.20	0.20	0.07	0.12	0.09
s, saturation flow rate [veh/h]	1781	1870	1811	1781	1870	1759	3459	1870	1682	1781	3560	1589
c, Capacity [veh/h]	136	895	867	120	878	827	422	420	378	137	640	453
d1, Uniform Delay [s]	47.75	21.71	21.77	48.49	19.11	19.11	45.21	39.29	39.29	47.99	40.18	29.63
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.03	4.84	5.07	14.94	1.90	2.01	4.91	5.94	6.59	14.98	1.21	0.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.80	0.71	0.72	0.85	0.48	0.48	0.85	0.87	0.87	0.87	0.67	0.33
d, Delay for Lane Group [s/veh]	57.78	26.54	26.84	63.43	21.01	21.13	50.12	45.23	45.88	62.97	41.38	30.04
Lane Group LOS	E	C	C	E	C	C	D	D	D	E	D	C
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.15	13.14	12.88	3.13	7.35	6.94	4.84	9.70	8.80	3.64	5.22	3.01
50th-Percentile Queue Length [ft/ln]	78.69	328.59	322.02	78.31	183.75	173.60	121.10	242.61	220.12	90.97	130.42	75.28
95th-Percentile Queue Length [veh/ln]	5.67	19.09	18.77	5.64	11.80	11.27	8.45	14.81	13.67	6.55	8.96	5.42
95th-Percentile Queue Length [ft/ln]	141.65	477.23	469.17	140.95	294.90	281.64	211.34	370.33	341.77	163.75	224.06	135.50

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.78	26.67	26.84	63.43	21.05	21.13	50.12	45.39	45.88	62.97	41.38	30.04
Movement LOS	E	C	C	E	C	C	D	D	D	E	D	C
d_A, Approach Delay [s/veh]	29.14			25.74			47.10			42.65		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	35.37											
Intersection LOS	D											
Intersection V/C	0.783											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	42.11	42.11	42.11	42.11
l_p,int, Pedestrian LOS Score for Intersection	2.771	2.810	2.742	2.687
Crosswalk LOS	C	C	B	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	666	647	742	647
d_b, Bicycle Delay [s]	23.36	24.03	20.77	24.03
l_b,int, Bicycle LOS Score for Intersection	2.689	2.323	2.431	2.133
Bicycle LOS	B	B	B	B

Sequence

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

Intersection Level Of Service Report
Intersection 2: Butterfield Stage Road at Rancho California Road

Control Type:	Signalized	Delay (sec / veh):	82.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.074

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	104	508	250	385	604	190	219	997	162	284	973	300
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	508	250	385	604	190	219	997	162	284	973	300
Peak Hour Factor	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770	0.9770
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	130	64	99	155	49	56	255	41	73	249	77
Total Analysis Volume [veh/h]	106	520	256	394	618	194	224	1020	166	291	996	307
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	16.00

Phasing & Timing

Control Type	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Overlap
Signal Group	1	6	0	5	2	0	3	8	0	7	4	4
Auxiliary Signal Groups												4,5
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	7	7	0	7	7	0	7	7	0	7	7	7
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	30
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	1.0
Split [s]	13	38	0	25	50	0	13	38	0	19	44	44
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	3.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	7
Pedestrian Clearance [s]	0	27	0	0	27	0	0	27	0	0	27	27
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	2.0
Minimum Recall	No	No		No	No		No	No		No	No	No
Maximum Recall	No	No		No	No		No	No		No	No	No
Pedestrian Recall	No	No		No	No		No	No		No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

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

Lane Group Calculations

Lane Group	L	C	C	L	C	C	L	C	C	L	C	R
C, Cycle Length [s]	120	120	120	120	120	120	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	0.00
g_i, Effective Green Time [s]	9	34	34	21	46	46	9	34	34	15	40	65
g / C, Green / Cycle	0.07	0.28	0.28	0.18	0.39	0.39	0.08	0.28	0.28	0.13	0.33	0.54
(v / s)_i Volume / Saturation Flow Rate	0.06	0.22	0.22	0.22	0.23	0.23	0.06	0.32	0.33	0.16	0.28	0.19
s, saturation flow rate [veh/h]	1781	1870	1664	1781	1870	1719	3459	1870	1780	1781	3560	1589
c, Capacity [veh/h]	130	532	473	312	722	664	260	528	503	223	1183	859
d1, Uniform Delay [s]	54.80	39.38	39.39	49.50	29.21	29.25	54.89	43.06	43.06	52.50	37.14	15.69
k, delay calibration	0.11	0.50	0.50	0.37	0.50	0.50	0.11	0.50	0.50	0.20	0.11	0.15
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	11.43	10.41	11.62	136.45	3.45	3.78	8.29	85.89	90.96	150.40	1.71	0.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.77	0.77	1.26	0.58	0.59	0.86	1.15	1.16	1.31	0.84	0.36
d, Delay for Lane Group [s/veh]	66.23	49.79	51.01	185.95	32.65	33.03	63.18	128.96	134.03	202.90	38.85	16.04
Lane Group LOS	E	D	D	F	C	C	E	F	F	F	D	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.57	12.57	11.36	21.12	10.28	9.57	3.65	28.06	27.42	15.99	13.66	4.81
50th-Percentile Queue Length [ft/ln]	89.27	314.31	284.02	527.88	257.08	239.21	91.15	701.52	685.56	399.85	341.62	120.13
95th-Percentile Queue Length [veh/ln]	6.43	18.39	16.89	31.94	15.54	14.64	6.56	39.90	39.29	25.05	19.73	8.40
95th-Percentile Queue Length [ft/ln]	160.69	459.69	422.21	798.60	388.56	366.04	164.08	997.54	982.35	626.18	493.18	210.01

Movement, Approach, & Intersection Results

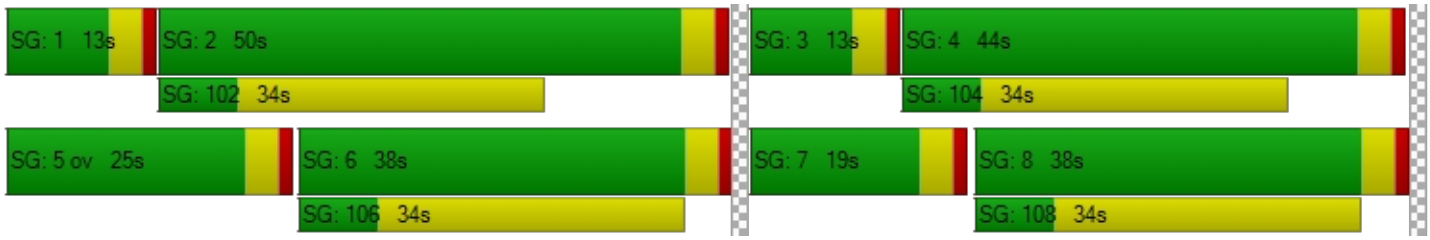
d_M, Delay for Movement [s/veh]	66.23	50.05	51.01	185.95	32.77	33.03	63.18	131.02	134.03	202.90	38.85	16.04
Movement LOS	E	D	D	F	C	C	E	F	F	F	D	B
d_A, Approach Delay [s/veh]	52.27			82.86			120.60			64.41		
Approach LOS	D			F			F			E		
d_I, Intersection Delay [s/veh]	82.23											
Intersection LOS	F											
Intersection V/C	1.074											

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	49.51	49.51	49.51	49.51
l_p,int, Pedestrian LOS Score for Intersection	2.695	2.754	2.906	2.997
Crosswalk LOS	B	C	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	567	767	567	667
d_b, Bicycle Delay [s]	30.82	22.82	30.82	26.67
l_b,int, Bicycle LOS Score for Intersection	2.287	2.555	2.723	2.875
Bicycle LOS	B	B	B	C

Sequence

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



Appendix I

Calle Contento/Rancho California Road
Queue Analysis Worksheets

Intersection: 1: Calle Contento & Rancho California Road

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LT
Maximum Queue (ft)	52	4	86	28	49	33
Average Queue (ft)	8	0	26	2	9	5
95th Queue (ft)	32	2	72	18	37	23
Link Distance (ft)	300		198		1372	1012
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150		150		
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Calle Contento & Rancho California Road

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LT
Maximum Queue (ft)	104	15	68	13	54	28
Average Queue (ft)	15	1	20	0	12	7
95th Queue (ft)	55	9	56	8	41	26
Link Distance (ft)	300		198		1372	1012
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150		150		
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Calle Contento & Rancho California Road

Movement	EB	EB	B6	WB	WB	B7	NB	SB	SB
Directions Served	LT	TR	T	LT	TR	T	LTR	LT	R
Maximum Queue (ft)	364	240	128	212	182	13	59	55	23
Average Queue (ft)	113	39	8	77	31	0	21	23	1
95th Queue (ft)	285	174	66	161	120	8	52	49	15
Link Distance (ft)	300		304	198		493	1372	1012	
Upstream Blk Time (%)	3			1	0				
Queuing Penalty (veh)	0			0	0				
Storage Bay Dist (ft)		150			150				150
Storage Blk Time (%)	14	0		2	0				
Queuing Penalty (veh)	60	2		10	0				

Network Summary

Network wide Queuing Penalty: 72

Intersection: 1: Calle Contento & Rancho California Road

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LT
Maximum Queue (ft)	62	8	87	61	43	38
Average Queue (ft)	10	1	30	3	7	7
95th Queue (ft)	38	7	74	24	31	28
Link Distance (ft)	300		198		1372	1012
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150		150		
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Calle Contento & Rancho California Road

Movement	EB	EB	WB	NB	SB
Directions Served	LT	TR	LT	LTR	LT
Maximum Queue (ft)	74	22	85	53	33
Average Queue (ft)	21	1	26	14	9
95th Queue (ft)	59	10	68	43	31
Link Distance (ft)	300		198	1372	1012
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		150			
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Calle Contento & Rancho California Road

Movement	EB	EB	B6	WB	WB	B7	NB	SB	SB
Directions Served	LT	TR	T	LT	TR	T	LTR	LT	R
Maximum Queue (ft)	409	240	356	290	198	276	114	81	34
Average Queue (ft)	338	206	258	161	100	36	35	34	4
95th Queue (ft)	505	342	472	293	234	194	86	66	23
Link Distance (ft)	300		304	198		493	1372	1012	
Upstream Blk Time (%)	69		69	10	2	0			
Queuing Penalty (veh)	0		0	0	0	0			
Storage Bay Dist (ft)		150			150				150
Storage Blk Time (%)	84	2		22	1				
Queuing Penalty (veh)	363	10		102	3				

Network Summary

Network wide Queuing Penalty: 479

Intersection: 1: Calle Contento & Rancho California Road

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	LT	TR	LT	TR	LTR	LT	R
Maximum Queue (ft)	58	7	111	69	63	38	22
Average Queue (ft)	12	0	41	6	21	5	1
95th Queue (ft)	40	4	95	37	53	23	10
Link Distance (ft)	300		198		1372	1012	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		150		150			150
Storage Blk Time (%)			0				
Queuing Penalty (veh)			0				

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Calle Contento & Rancho California Road

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LT
Maximum Queue (ft)	116	19	101	46	66	34
Average Queue (ft)	25	1	33	2	29	7
95th Queue (ft)	77	10	78	19	58	27
Link Distance (ft)	300		198		1372	1012
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150		150		
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Calle Contento & Rancho California Road

Movement	EB	EB	B6	WB	WB	B7	NB	SB	SB
Directions Served	LT	TR	T	LT	TR	T	LTR	LT	R
Maximum Queue (ft)	412	240	362	312	198	551	148	84	23
Average Queue (ft)	379	240	325	279	198	508	63	32	1
95th Queue (ft)	411	242	387	300	198	597	116	64	13
Link Distance (ft)	300		304	198		493	1372	1012	
Upstream Blk Time (%)	69		80	62	12	85			
Queuing Penalty (veh)	0		0	0	0	0			
Storage Bay Dist (ft)		150			150				150
Storage Blk Time (%)	97	4		91	5				
Queuing Penalty (veh)	729	22		552	25				

Network Summary

Network wide Queuing Penalty: 1328

Intersection: 1: Calle Contento & Rancho California Road

Movement	EB	EB	WB	WB	B7	NB	SB	SB
Directions Served	LT	TR	LT	TR	T	LTR	LT	R
Maximum Queue (ft)	62	15	165	96	6	61	33	11
Average Queue (ft)	14	0	46	7	0	20	7	0
95th Queue (ft)	43	7	108	47	4	53	26	7
Link Distance (ft)	300		198		493	1372	1012	
Upstream Blk Time (%)			0	0				
Queuing Penalty (veh)			0	0				
Storage Bay Dist (ft)		150		150				150
Storage Blk Time (%)			0					
Queuing Penalty (veh)			1					

Network Summary

Network wide Queuing Penalty: 1

Intersection: 1: Calle Contento & Rancho California Road

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LT
Maximum Queue (ft)	116	14	114	51	69	34
Average Queue (ft)	33	1	44	4	30	11
95th Queue (ft)	91	10	92	28	56	34
Link Distance (ft)	300		198		1372	1012
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		150		150		
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Calle Contento & Rancho California Road

Movement	EB	EB	B6	WB	WB	B7	NB	SB	SB
Directions Served	LT	TR	T	LT	TR	T	LTR	LT	R
Maximum Queue (ft)	412	240	367	312	198	553	220	104	47
Average Queue (ft)	381	240	328	280	198	515	79	47	8
95th Queue (ft)	402	241	365	301	198	586	155	89	36
Link Distance (ft)	300		304	198		493	1372	1012	
Upstream Blk Time (%)	79		90	66	12	90			
Queuing Penalty (veh)	0		0	0	0	0			
Storage Bay Dist (ft)		150			150				150
Storage Blk Time (%)	99	3		94	5			0	
Queuing Penalty (veh)	741	22		596	24			0	

Network Summary

Network wide Queuing Penalty: 1382