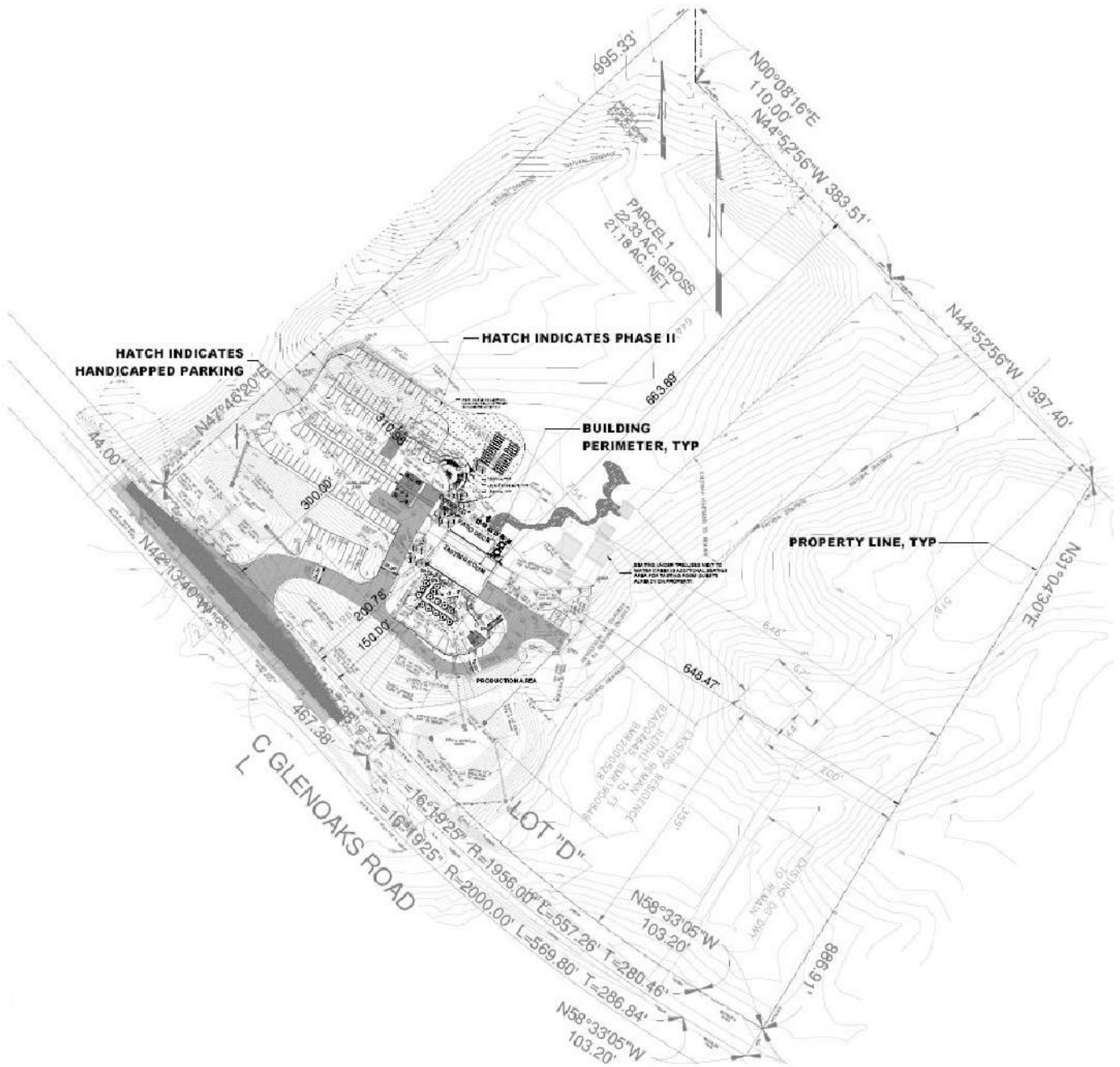


# AUSTIN VINEYARD CLASS V WINERY TRAFFIC IMPACT ANALYSIS County of Riverside, California



**AUSTIN VINEYARD CLASS V WINERY PROJECT  
TRAFFIC IMPACT ANALYSIS  
County of Riverside, California**

**Prepared for:**

TEMECULA VALLEY WINERY MANAGEMENT  
27495 Diaz Road  
Temecula, CA 92590

**Prepared by:**

RK ENGINEERING GROUP, INC.  
4000 Westerly Place, Suite 280  
Newport Beach, CA 92660

**Justin Tucker, P.E.  
Michael Torres, E.I.T.**



**August 09, 2022**

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# 1.0 Introduction

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## 1.1 Purpose of Report and Study Objectives

The purpose of this traffic impact analysis and report is to evaluate and assess the proposed Austin Vineyard Class V Winery Project (hereinafter referred to as “project”) from a traffic and circulation standpoint. Furthermore, this analysis will determine whether the proposed project will have a significant impact on the environment.

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). This study evaluates the potential traffic and environmental impacts associated with the proposed project in accordance with the thresholds of significance.

## 1.2 Site Location & Project Description

The proposed project is located at 35620 Glen Oaks Road, in the Temecula Valley Wine Country Community Plan area of the unincorporated County of Riverside. The proposed project consists of the construction and operation of a Class V winery that would include a 4,506 square foot (SF) tasting room, a 2,970 SF tasting patio, a 4,000 SF cellar, a 616 SF covered entry patio, a 2,200 SF outdoor production area, and an outdoor wedding reception area.

Access to the project site will be provided via one (1) full-access unsignalized driveway located along Glen Oaks Road.

The project is planned to open in 2024 and will be evaluated in one (1) single phase. The project site location map is shown in 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’s location map and traffic analysis study area.

The study area included in this analysis has been determined based on existing and future transportation facilities within the vicinity of the site where the project may contribute a significant amount of traffic.

The study area consists of the following five (5) intersections listed below. The jurisdiction where each study intersection is located is also identified.

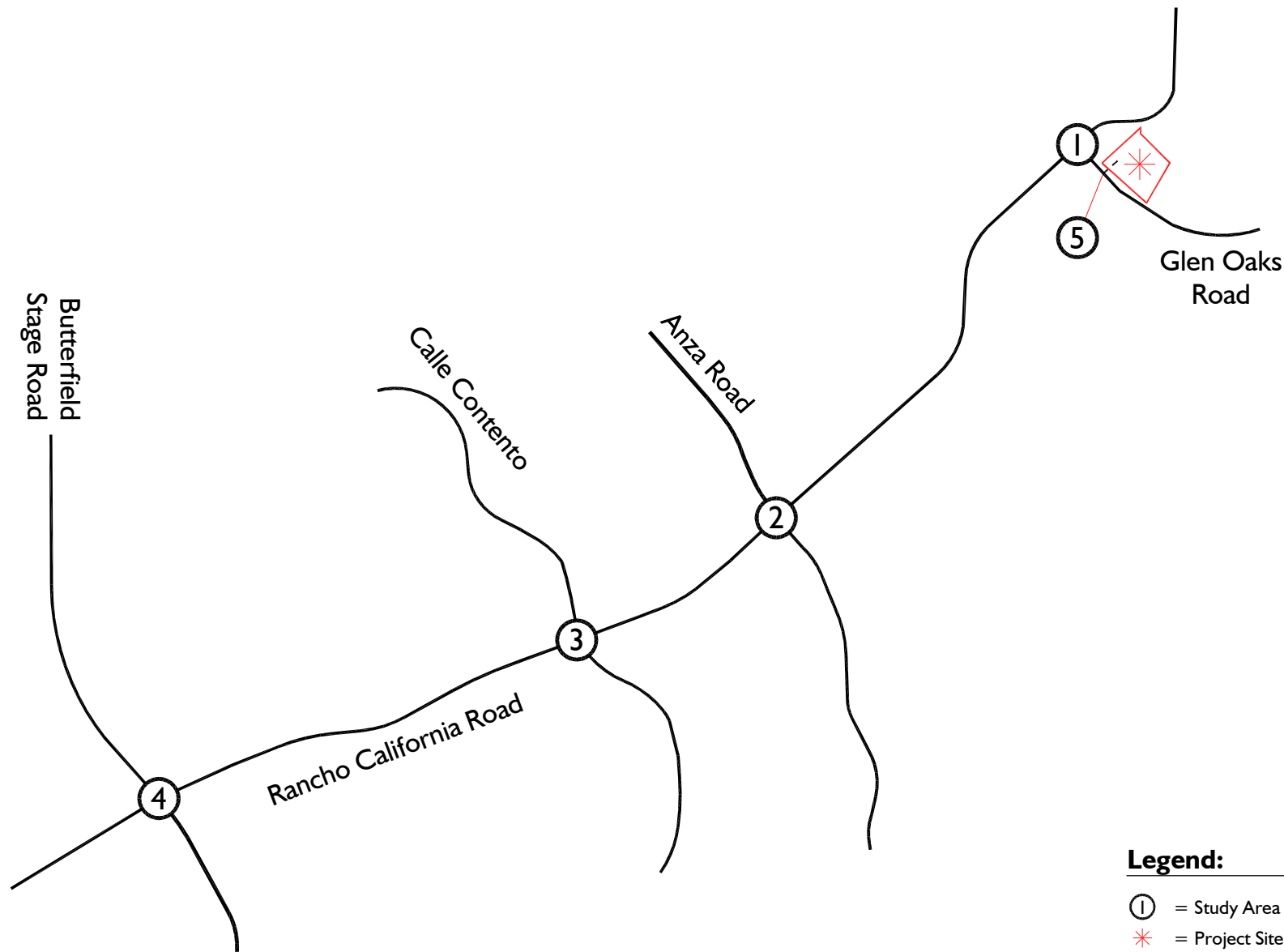


1. Glen Oaks Road (NS) at Rancho California Road (EW) [County of Riverside]
2. Anza Road (NS) at Rancho California Road (EW) [County of Riverside]
3. Nicholas Valley Rd/Calle Contento (NS) at Rancho California Road (EW) [County of Riv.]
4. Butterfield Stage Rd (NS) at Rancho California Rd (EW) [County of Riv./City of Temecula]
5. Glen Oaks Road (NS) at Project Site Access (EW) [County of Riverside]

The analysis evaluates traffic conditions for the study intersections under 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 periods:

- Existing Conditions;
- Project Opening Year (2024) With Ambient Growth Without Project Conditions;
- Project Opening Year (2024) With Ambient Growth With Project Conditions;
- Project Opening Year (2024) With Ambient Growth & Cumulative Projects Without Project Conditions; and
- Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions.

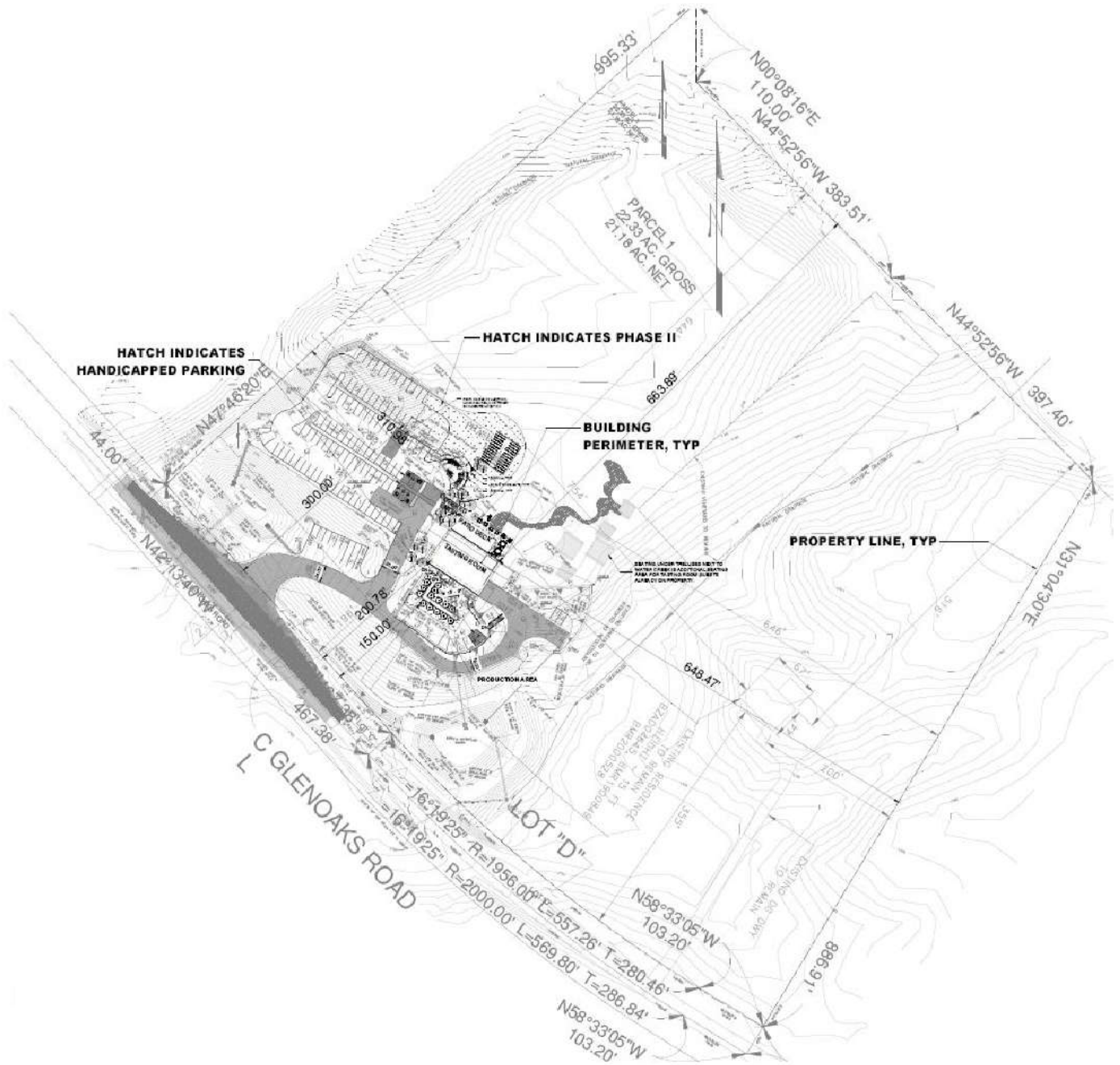
It is important to note that while the intersection of Nicholas Valley Road / Calle Contento at Rancho California Road currently operates as a cross-street stop, the County is finalizing design plans to convert this intersection into a roundabout. For purposes of this analysis, the roundabout has been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



**Legend:**

- ① = Study Area Intersection
- \* = Project Site
- = Project Access Driveway
- = Project Site Boundary





# Nicholas Valley Road / Calle Contento at Rancho California Road Planned Roundabout



## 2.0 Analysis Methodology

---

This section of the report presents the methodologies used to perform the traffic analyses summarized in this report in accordance with the County of Riverside and City of Temecula 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 that 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 pass 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. A 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 (6<sup>th</sup> Edition) Methodology

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

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

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 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**

In this report, the HCM levels of service have been evaluated 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 on the manual turning movement counts collected at the study area intersections.

**2.2 LOS Performance Criteria & Thresholds for Requiring LOS Improvements**

The five (5) 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 Riverside County not located within the boundaries of an Area Plan, as well as 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 performance 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 the 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 Conditions & Circulation System**

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### **3.1 Existing Traffic Controls & Intersection Geometrics**

RK conducted a field review of the study area on Wednesday, June 25<sup>th</sup>, 2022. Exhibit 3-1 identifies the existing roadway conditions within the study area. The number of through traffic lanes for existing roadways and existing intersection controls has been identified. The type of traffic control and the number of lanes at an intersection are key inputs for the calculation of level of service.

### **3.2 Existing Conditions Traffic Volumes**

At the time of the preparation of this traffic study, local schools were currently released for summer break. As such, the collection of any new traffic count data would not fully reflect “typical” conditions.

RK previously collected traffic counts in April 2022, while local schools were in session, for the study intersections of Nicholas Valley Road / Calle Contento at Rancho California Road (Int. #3) and Butterfield Stage Road at Rancho California Road (Int. #4). However, RK does not have existing traffic count data (while local school are in session) for the study intersections of Glen Oaks Road at Rancho California Road (Int. #1) or Anza Road at Rancho California Road (Int. #2).

Due to the absence of available existing traffic count data at intersections #1 and #2 while local schools were in session, new traffic counts at these locations were conducted on Thursday July 7, 2022 and Saturday July 9, 2022. Specifically, the weekday AM and PM peak period traffic volumes were collected between 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM, respectively, and the Saturday midday peak period traffic volumes were collected between 2:00 PM and 5:00 PM. Given that these traffic counts were conducted during the summer period while local school were not in session, the traffic counts were grown by a factor of 1.258 during the weekday AM peak hour, 1.013 during the weekday PM peak hour, and 1.186 during the Saturday midday peak hour to establish Year 2022 existing baseline traffic conditions. These growth factors were calculated by comparing the April 2022 non-summer counts at intersections #3 & #4 to the July 2022 summer counts at intersections #3 & #4, which were also collected solely for this purpose. The higher factors between intersections #3 & #4 were ultimately utilized.

Additionally, per the approved scope of work, the Saturday peak period was determined by collecting 24-hour roadway volumes along the following four (4) roadway segments located in the proximity of the project site and observing which three-hour period generally produced the highest volumes:

1. Calle Contento, North of Rancho California Road
2. Rancho California Road, East of Calle Contento
3. Rancho California Road, West of Calle Contento
4. Rancho California Road, West of Butterfield Stage Road

As a result of the ADT surveys, 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.

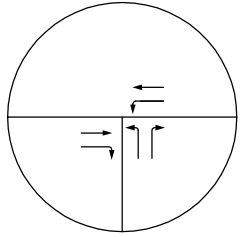
Existing weekday AM, weekday PM, and Saturday midday peak hour traffic volumes for the study intersections are shown in Exhibit 3-2.

The peak hour traffic count worksheets as well as the growth factor worksheet (i.e. Summer vs. Non-Summer counts) are included in Appendix A.

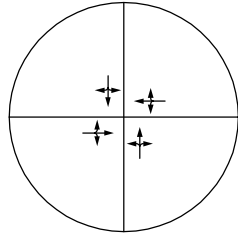
### **3.3 County of Riverside General Plan & Southwest Area Plan Circulation Element**

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

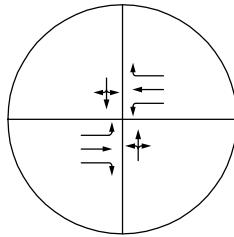
# Existing Traffic Controls & Intersection Geometrics



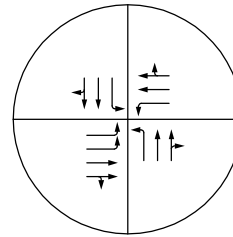
1. Glen Oaks Road (NS) at Rancho California Road (EW)



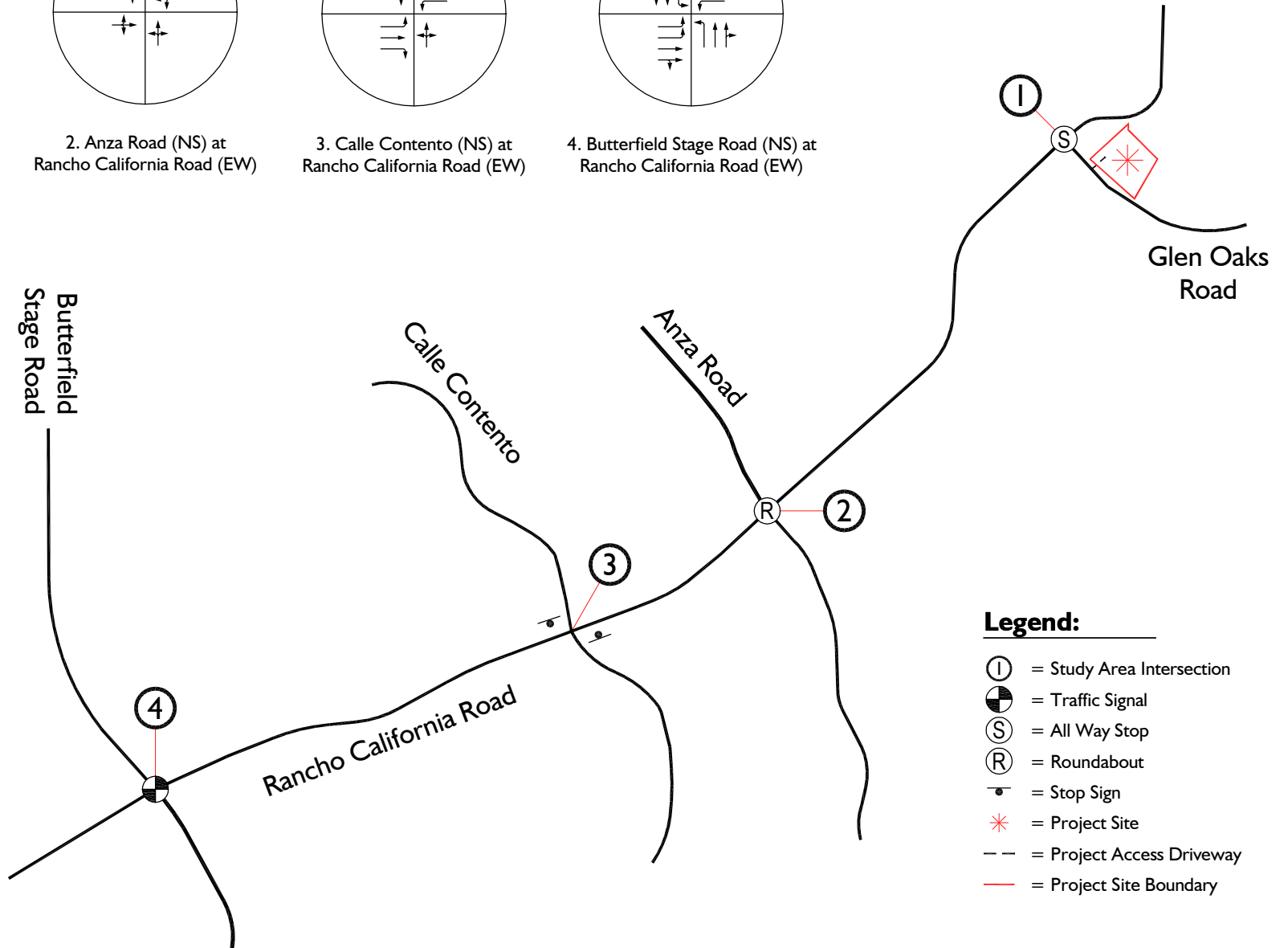
2. Anza Road (NS) at Rancho California Road (EW)



3. Calle Contento (NS) at Rancho California Road (EW)



4. Butterfield Stage Road (NS) at Rancho California Road (EW)

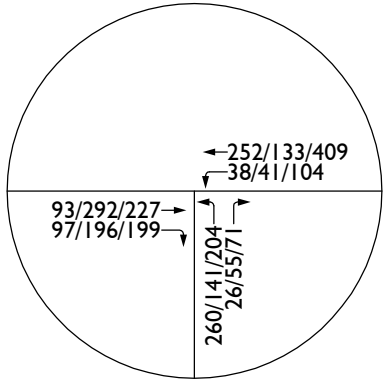


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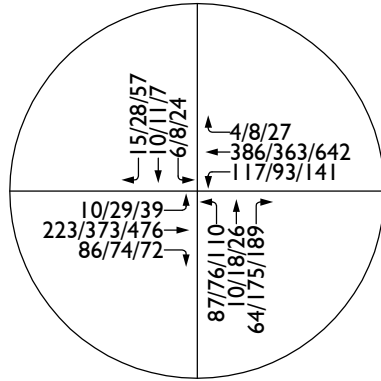
- ① = Study Area Intersection
- ⊙ = Traffic Signal
- Ⓢ = All Way Stop
- Ⓡ = Roundabout
- = Stop Sign
- \* = Project Site
- - = Project Access Driveway
- = Project Site Boundary



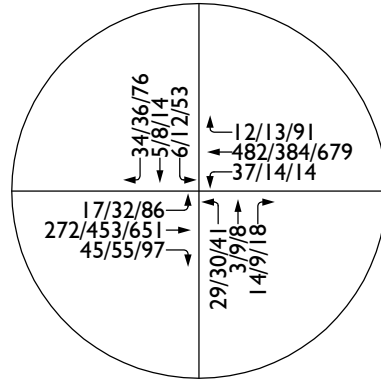
# Exhibit 3-2 Existing Conditions Traffic Volumes



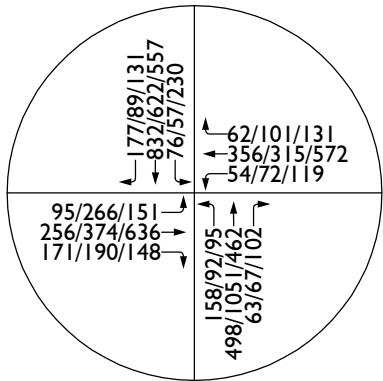
1. Glen Oaks Road (NS) & Rancho California Road (EW)



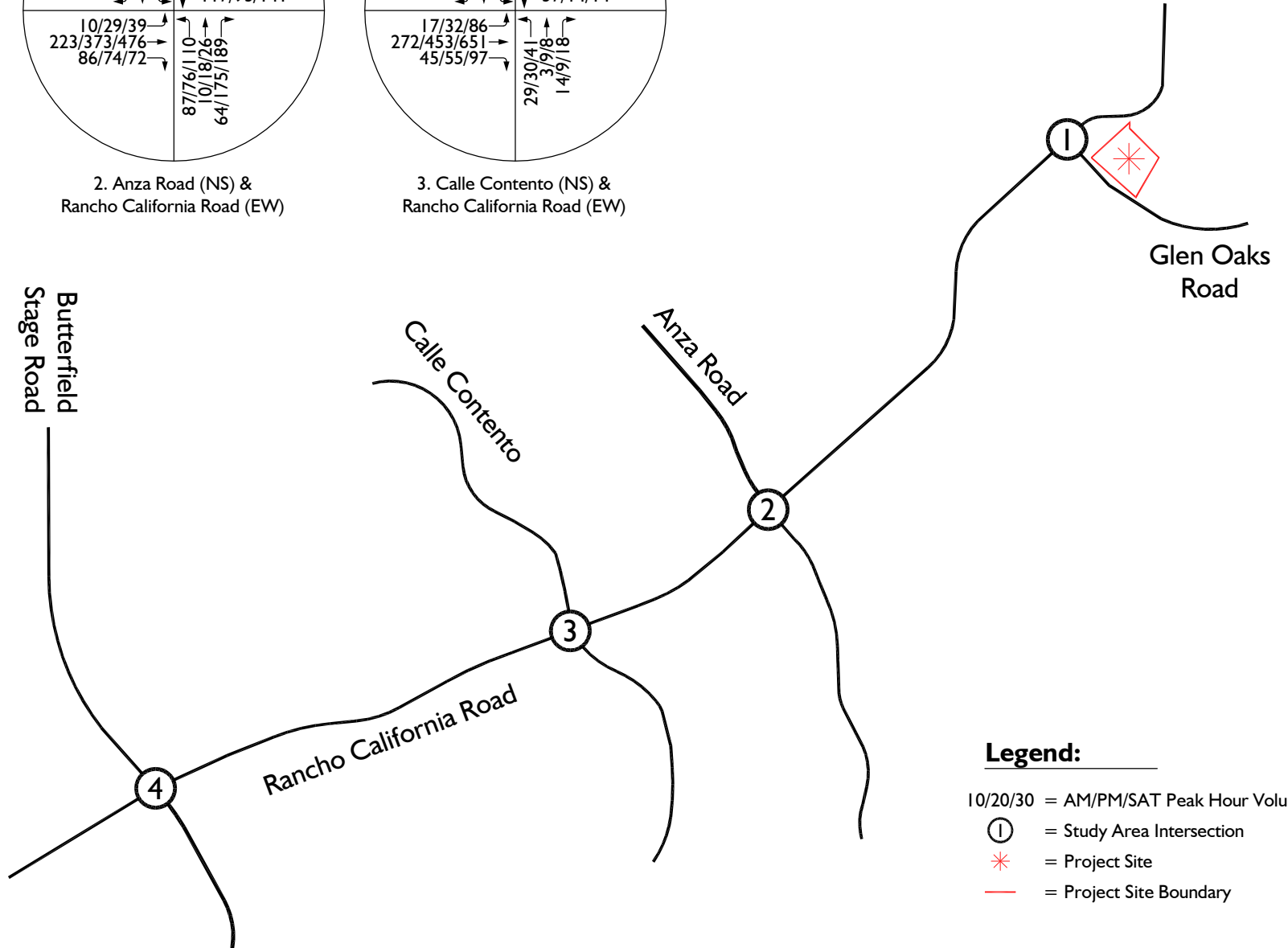
2. Anza Road (NS) & Rancho California Road (EW)



3. Calle Contento (NS) & Rancho California Road (EW)



4. Butterfield Stage Road (NS) & Rancho California Road (EW)

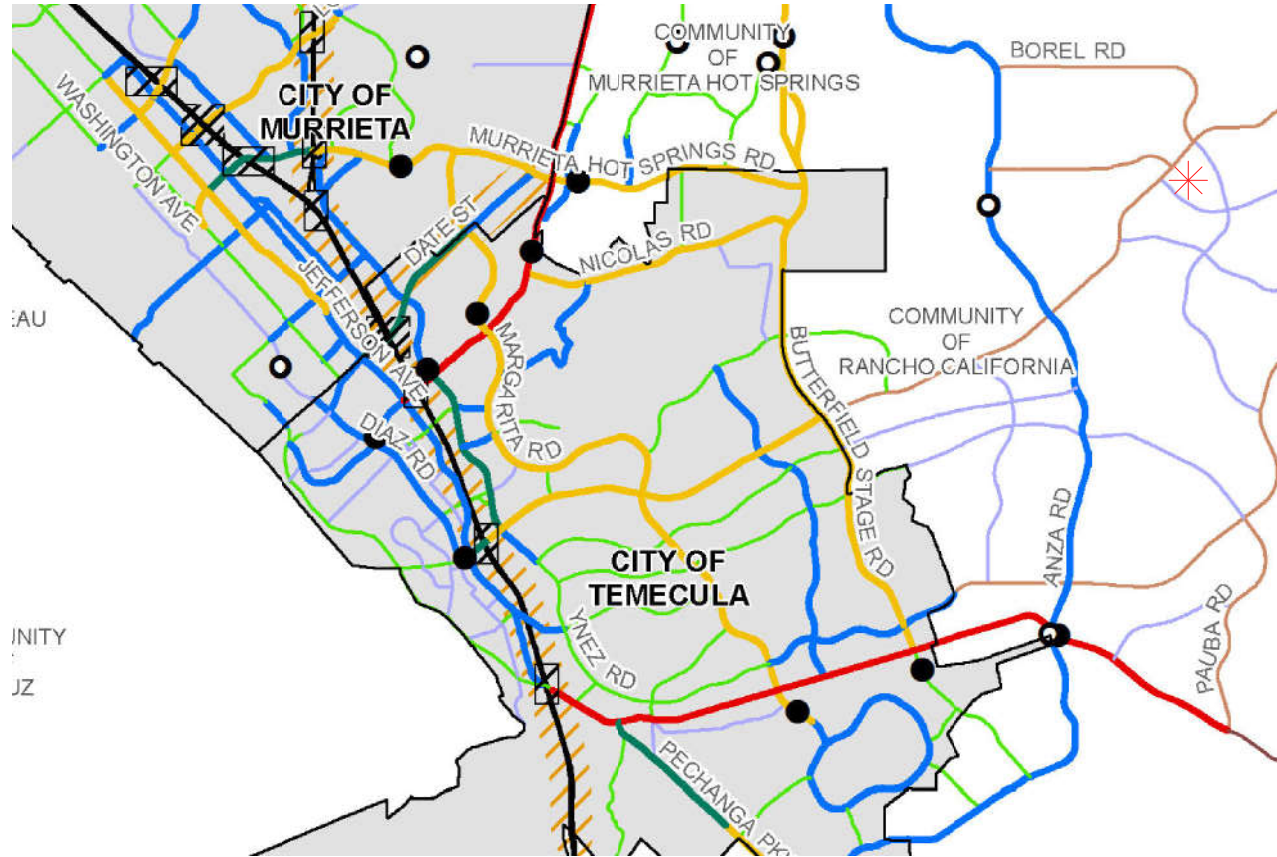


### Legend:

- 10/20/30 = AM/PM/SAT Peak Hour Volumes
- ① = Study Area Intersection
- \* = Project Site
- = Project Site Boundary



# County of Riverside Southwest Area Plan Roadway Classification

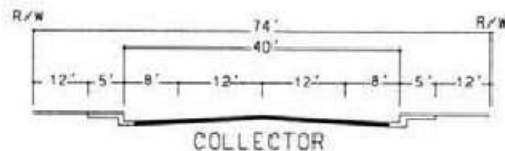
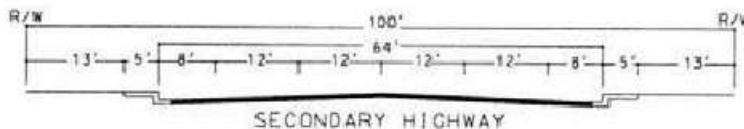
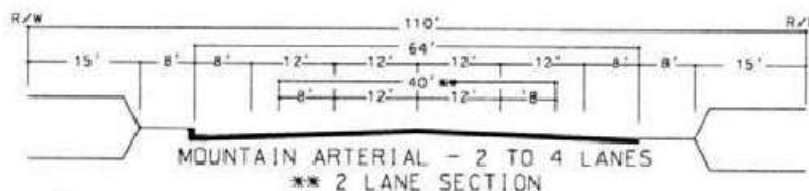
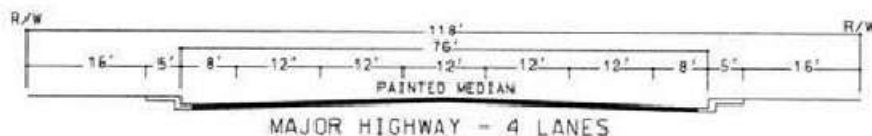
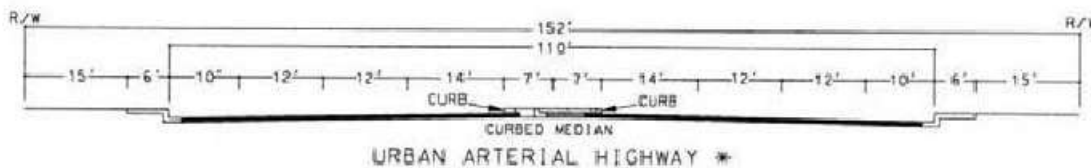
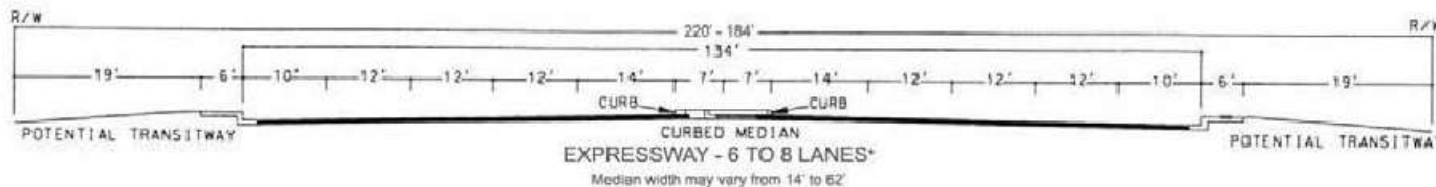


**Legend:**

- = 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



# 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

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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 Project 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 on 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.

ITE Land Use 970: Wine Tasting Room and ITE Land Use 110: General Light Industrial trip rates are the most appropriate for this project. The trip generation forecast for the tasting room portion of the project (ITE Land Use 970) will be based on the building size for the tasting room (i.e., 4,506 SF). The wine tasting patio (i.e., 2,970 SF) and covered entry patio (i.e. 616 SF) were excluded because the gross floor area utilized in trip generation calculations does not include outdoor spaces. Additionally, in order to provide a conservative analysis, the cellar and outdoor production area (i.e., 6,200 SF), which are assumed to typically be more ancillary to the site and will generally only be accessed via employees, will still be accounted for in the total trip generation forecast by applying ITE Land Use 110 trip rates.

Table 4-1 shows the ITE trip generation rates for the trip generation analysis of the project land uses. It should be noted that the *ITE Trip Generation Manual* does not provide a Saturday midday peak hour trip generation rate for ITE Land Use 110: General Light Industrial. As such, the Saturday midday peak hour rate has been calculated by comparing the ratio between the weekday AM and weekday daily trip rates and applying the ratio to the Saturday daily trip rate.

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

As shown in Table 4-2, the proposed project is forecast to generate approximately 237 weekday daily trips which include approximately 14 weekday AM peak hour trips and



approximately 37 weekday PM peak hour trips. Additionally, the proposed project is forecast to generate approximately 921 Saturday daily trips which include approximately 165 Saturday midday peak hour trips.

#### **4.1.2 Project 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 and the proximity to the regional freeway system. The directional orientation of traffic was determined by evaluating existing and proposed land uses and highways within the study area.

The project trip distribution is shown in 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 services and the 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, weekday PM, and 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 County 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 2-year period to opening year 2024 conditions (i.e., 4% 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 staff for inclusion in this analysis and is shown in Table 4-3.

Table 4-3 shows the land uses and their corresponding weekday and Saturday daily and peak hour trip generation for the nearby cumulative projects provided by the public agencies.

A location map of the cumulative projects is shown in Exhibit 4-3.

Cumulative projects traffic volumes are shown in Exhibit 4-4 for weekday AM, weekday PM, and 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 2024. 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 considered 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 anticipated. Additionally, the analysis utilizes a growth rate of two percent (2%) per year for project opening year (2024) conditions (i.e., 4% total growth), 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 Project Opening Year (2024) With Ambient Growth Without Project Conditions Traffic Volumes**

Project Opening Year (2024) With Ambient Growth Without Project Conditions traffic volumes consist of two (2) years of annual growth on top of existing (2022) traffic volumes at two percent (2%) per year (i.e., 4% total growth).

Project Opening Year (2024) With Ambient Growth Without Project Conditions for weekday AM, weekday PM, and Saturday midday peak hours are shown in Exhibit 4-5.

#### **4.4 Project Opening Year (2024) With Ambient Growth With Project Conditions Traffic Volumes**

Project Opening Year (2024) With Ambient Growth With Project Conditions traffic volumes consist of two (2) years of annual growth on top of existing (2022) traffic volumes at two percent (2%) per year (i.e. 4% total growth), plus traffic generated by the proposed project.

Project Opening Year (2024) With Ambient Growth With Project Conditions for weekday AM, weekday PM, and Saturday midday peak hours are shown in Exhibit 4-6.

#### **4.5 Project Opening Year (2024) With Ambient Growth & Cumulative Projects Without Project Conditions Traffic Volumes**

Project Opening Year (2024) With Ambient Growth & Cumulative Projects Without Project Conditions traffic volumes consist of two (2) years of annual growth on top of existing (2022) traffic volumes at two percent (2%) per year (i.e., 4% total growth), plus traffic generated by the cumulative projects.

Project Opening Year (2024) With Ambient Growth & Cumulative Projects Without Project Conditions for weekday AM, weekday PM, and Saturday midday peak hours are shown on Exhibit 4-7.

#### **4.6 Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions Traffic Volumes**

Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions consist of two (2) years of annual growth on top of existing (2022) traffic volumes at two percent (2%) per year (i.e., 4% total growth), plus traffic generated by the cumulative projects and the proposed project.

Project Opening Year (2024) With Ambient Growth With Project Conditions for weekday AM, weekday PM, and Saturday midday peak hours are shown in Exhibit 4-8.

**Table 4-1  
ITE Trip Generation Rates<sup>1</sup>**

Land Use	ITE Code	Units <sup>2</sup>	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 <sup>3</sup>	110	TSF	0.65	0.09	0.74	0.09	0.56	0.65	4.87	0.05	0.05	0.10	0.69
Wine Tasting Room	970	TSF	1.45	0.62	2.07	3.66	3.65	7.31	45.96	17.15	19.35	36.50	203.48

<sup>1</sup> Source: *ITE Trip Generation Manual* (11th Edition, 2021).

<sup>2</sup> TSF = Thousand Square Feet.

<sup>3</sup> The *ITE Trip Generation Manual* does not provide a Saturday midday peak hour trip generation rate for ITE Land Use 110: General Light Industrial. As such, the Saturday midday peak hour rate has been calculated by comparing the ratio between the weekday AM and weekday daily trip rates, and applying the ratio to the Saturday daily trip rate [i.e.  $(0.74 / 4.87) * 0.69 = 0.10$ ]. A 50/50 inbound/outbound split was assumed.

**Table 4-2  
Project Trip Generation<sup>1</sup>**

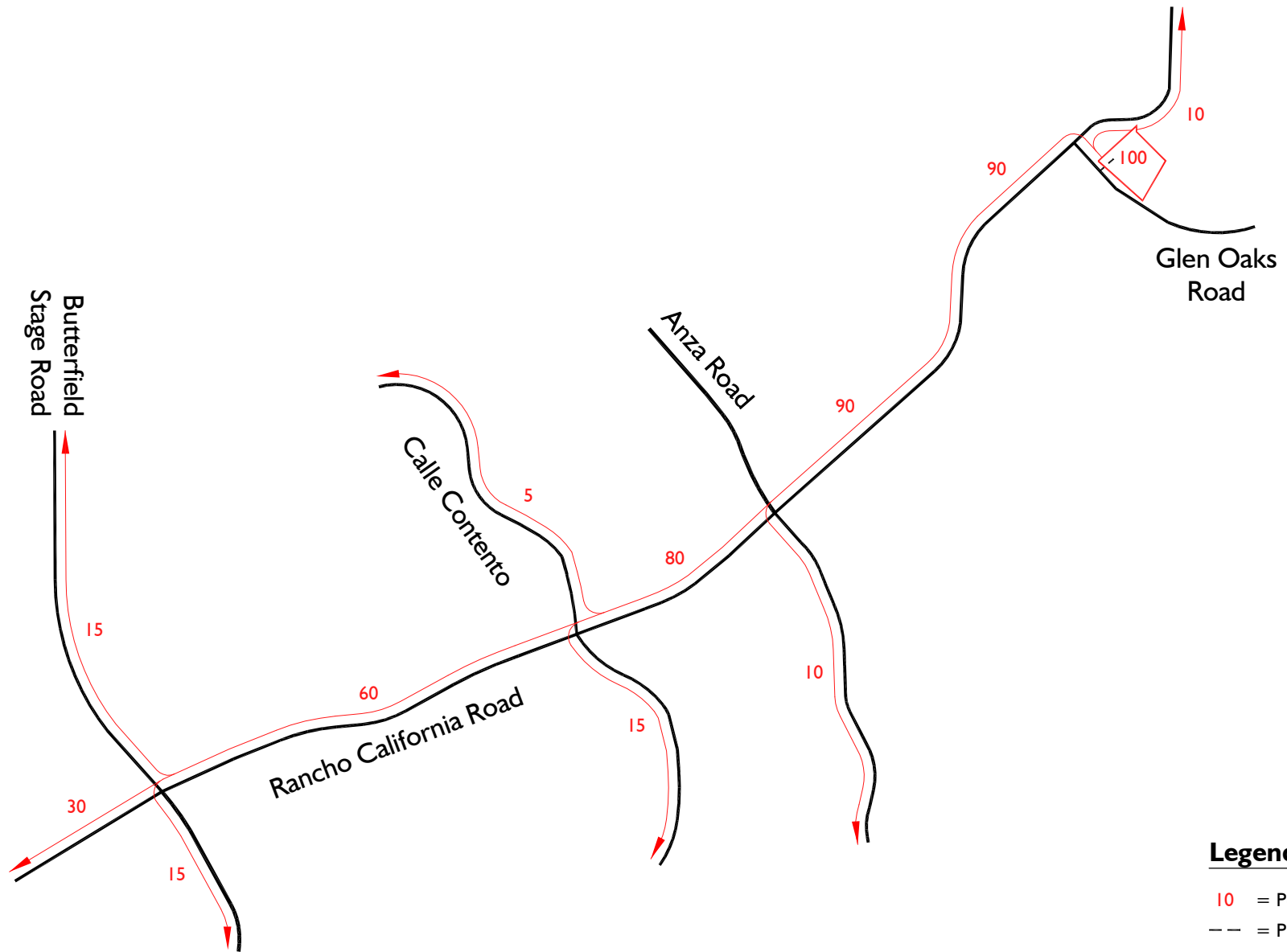
Land Use (ITE Code)	Quantity	Units <sup>2</sup>	Weekday							Saturday			
			AM Peak Hour			PM Peak Hour			Daily	Midday Peak Hour			Daily
			In	Out	Total	In	Out	Total		In	Out	Total	
General Light Industrial (110)	6.200	TSF	4	1	5	1	3	4	30	0	1	1	4
Wine Tasting Room (970)	4.506	TSF	7	2	9	16	17	33	207	77	87	164	917
<b>Total Trip Generation</b>			<b>11</b>	<b>3</b>	<b>14</b>	<b>17</b>	<b>20</b>	<b>37</b>	<b>237</b>	<b>77</b>	<b>88</b>	<b>165</b>	<b>921</b>

<sup>1</sup> Source: *ITE Trip Generation Manual* (11th Edition, 2021).

<sup>2</sup> TSF = Thousand Square Feet.

<sup>3</sup> The wine tasting patio (2,970 SF) and covered entry patio (616 SF) are excluded from the calculations since gross floor area does not include outdoor spaces.

Exhibit 4-1  
**Project Trip Distribution**

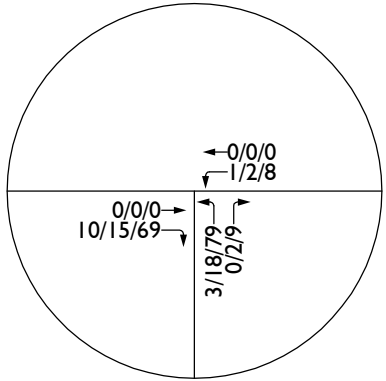


**Legend:**

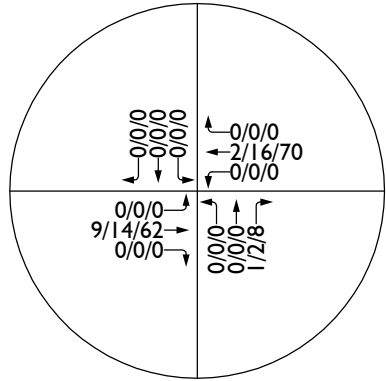
- 10 = Percent from Project
- = Project Access Driveway
- = Project Site Boundary



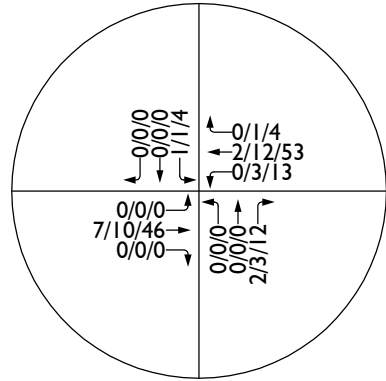
# Exhibit 4-2 Project Traffic Volumes



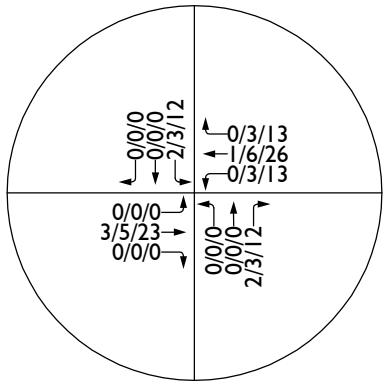
1. Glen Oaks Road (NS) & Rancho California Road (EW)



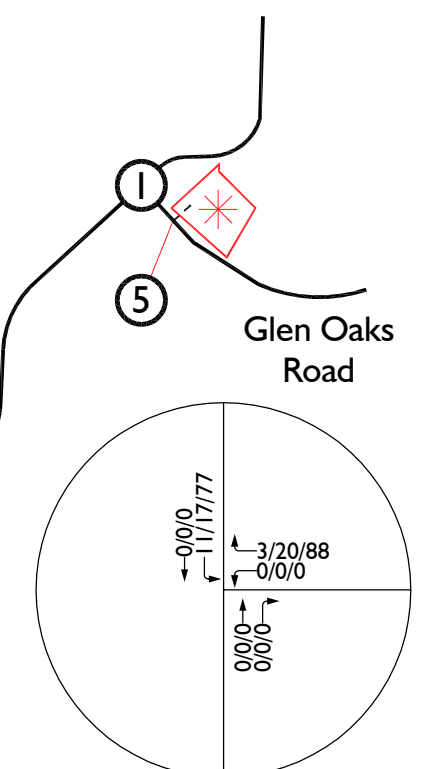
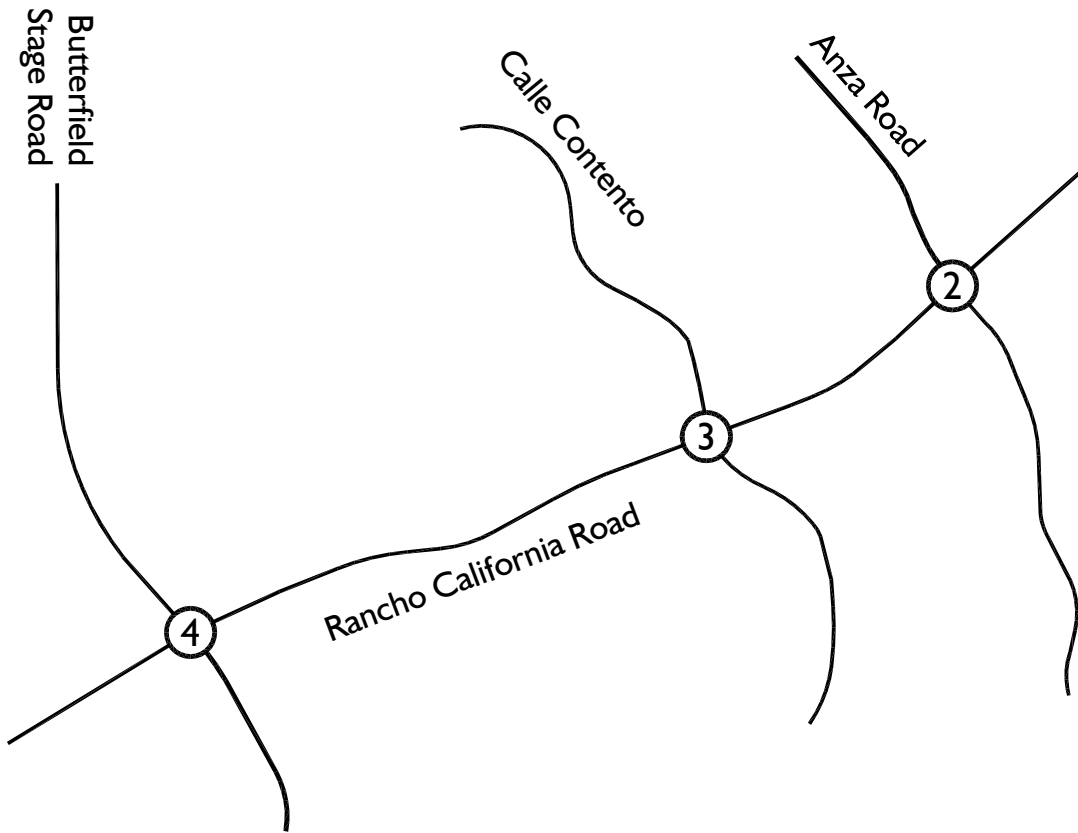
2. Anza Road (NS) & Rancho California Road (EW)



3. Calle Contento (NS) & Rancho California Road (EW)



4. Butterfield Stage Road (NS) & Rancho California Road (EW)



5. Glen Oaks Road (NS) & Project Site Access (EW)

### Legend:

- 10/20/30 = AM/PM/SAT Peak Hour Volumes
- ① = Study Area Intersection
- \* = Project Site
- = Project Access Driveway
- = Project Site Boundary



**Table 4-3  
Cumulative Projects Trip Generation<sup>1</sup>**

ID No.	Jurisdiction	Project Name / Case Number	Land Use	Quantity	Units <sup>2</sup>	Weekday						Saturday				
						AM Peak Hour			PM Peak Hour			Daily	Midday Peak Hour			Daily
						In	Out	Total	In	Out	Total		In	Out	Total	
<b>TAZ 1</b>																
R1	County of Riverside	PPT200022 <sup>3</sup>	General Light Industrial	99.360	TSF	78	11	88	10	69	79	625	5	5	10	69
<b>TAZ 1 Total</b>						<b>78</b>	<b>11</b>	<b>88</b>	<b>10</b>	<b>69</b>	<b>79</b>	<b>625</b>	<b>5</b>	<b>5</b>	<b>10</b>	<b>69</b>
<b>TAZ 2</b>																
R2	County of Riverside	TR37377	Single Family Homes	116	DU	21	60	81	69	40	109	1,094	58	49	107	1,100
<b>TAZ 2 Total</b>						<b>21</b>	<b>60</b>	<b>81</b>	<b>69</b>	<b>40</b>	<b>109</b>	<b>1,094</b>	<b>58</b>	<b>49</b>	<b>107</b>	<b>1,100</b>
<b>TAZ 3</b>																
R3	County of Riverside	PPT210132	Wine Tasting Room	6.970	TSF	10	4	14	25	26	51	320	119	135	254	1,418
<b>TAZ 3 Total</b>						<b>10</b>	<b>4</b>	<b>14</b>	<b>25</b>	<b>26</b>	<b>51</b>	<b>320</b>	<b>119</b>	<b>135</b>	<b>254</b>	<b>1,418</b>
<b>TAZ 4</b>																
R4	County of Riverside	PP26064	Wine Tasting Room	7.650	TSF	11	5	16	28	28	56	352	131	148	279	1,556
			Hotel	43	RM	11	9	20	13	12	25	344	17	14	31	348
<b>TAZ 4 Total</b>						<b>22</b>	<b>14</b>	<b>36</b>	<b>41</b>	<b>40</b>	<b>81</b>	<b>696</b>	<b>148</b>	<b>162</b>	<b>310</b>	<b>1,904</b>
<b>TAZ 5</b>																
R5	County of Riverside	PP25893	Wine Tasting Room	3.154	TSF	5	2	7	11	12	23	145	54	61	115	641
<b>TAZ 5 Total</b>						<b>5</b>	<b>2</b>	<b>7</b>	<b>11</b>	<b>12</b>	<b>23</b>	<b>145</b>	<b>54</b>	<b>61</b>	<b>115</b>	<b>641</b>
<b>TAZ 6</b>																
R6	County of Riverside	PPT220006	General Light Industrial	19.344	TSF	3	1	4	0	3	3	24	1	1	2	14
			Hotel	4.000	TSF	1	0	1	0	1	1	8	2	2	4	33
			Wine Tasting Room	0.947	TSF	9	4	13	22	23	45	282	17	19	36	193
<b>TAZ 6 Total</b>						<b>13</b>	<b>5</b>	<b>18</b>	<b>22</b>	<b>27</b>	<b>49</b>	<b>314</b>	<b>20</b>	<b>22</b>	<b>42</b>	<b>240</b>
<b>TAZ 7</b>																
R7	County of Riverside	PPT18003	General Light Industrial	41.704	TSF	27	4	31	4	23	27	203	3	3	6	29
			Hotel	10	RM	3	2	5	3	3	6	80	4	4	8	81
			General Office	1.805	TSF	2	0	2	0	2	2	20	1	1	2	4
			Fine Dining Restaurant	4.250	TSF	2	1	3	22	11	33	356	27	19	46	383
			Wine Tasting Room	5.611	TSF	8	3	11	21	21	42	258	97	109	205	1,142
<b>TAZ 7 Total</b>						<b>42</b>	<b>10</b>	<b>52</b>	<b>50</b>	<b>60</b>	<b>110</b>	<b>917</b>	<b>132</b>	<b>136</b>	<b>267</b>	<b>1,639</b>
<b>TAZ 8</b>																
R8	County of Riverside	TR37377	Single Family Homes	8	DU	1	4	5	5	3	8	75	4	4	8	76
<b>TAZ 8 Total</b>						<b>1</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>3</b>	<b>8</b>	<b>75</b>	<b>4</b>	<b>4</b>	<b>8</b>	<b>76</b>
<b>TAZ 9</b>																
R9	County of Riverside	Mexim Temey <sup>4</sup>	General Light Industrial	4.380	TSF	3	0	3	0	3	3	21	1	2	3	3
			Hotel	10	RM	3	2	5	3	3	6	80	4	3	7	81
			Wine Tasting Room	8.836	TSF	13	5	18	32	33	65	406	152	171	323	1,798
<b>TAZ 9 Total</b>						<b>19</b>	<b>7</b>	<b>26</b>	<b>35</b>	<b>39</b>	<b>74</b>	<b>507</b>	<b>157</b>	<b>176</b>	<b>333</b>	<b>1,882</b>
<b>Total Cumulative Projects Trip Generation</b>						<b>133</b>	<b>106</b>	<b>239</b>	<b>268</b>	<b>316</b>	<b>584</b>	<b>4,693</b>	<b>697</b>	<b>750</b>	<b>1,446</b>	<b>8,969</b>

<sup>1</sup> Cumulative Projects information provided by County of Riverside staff.

<sup>2</sup> TSF = Thousand Square Feet;

RM = Rooms;

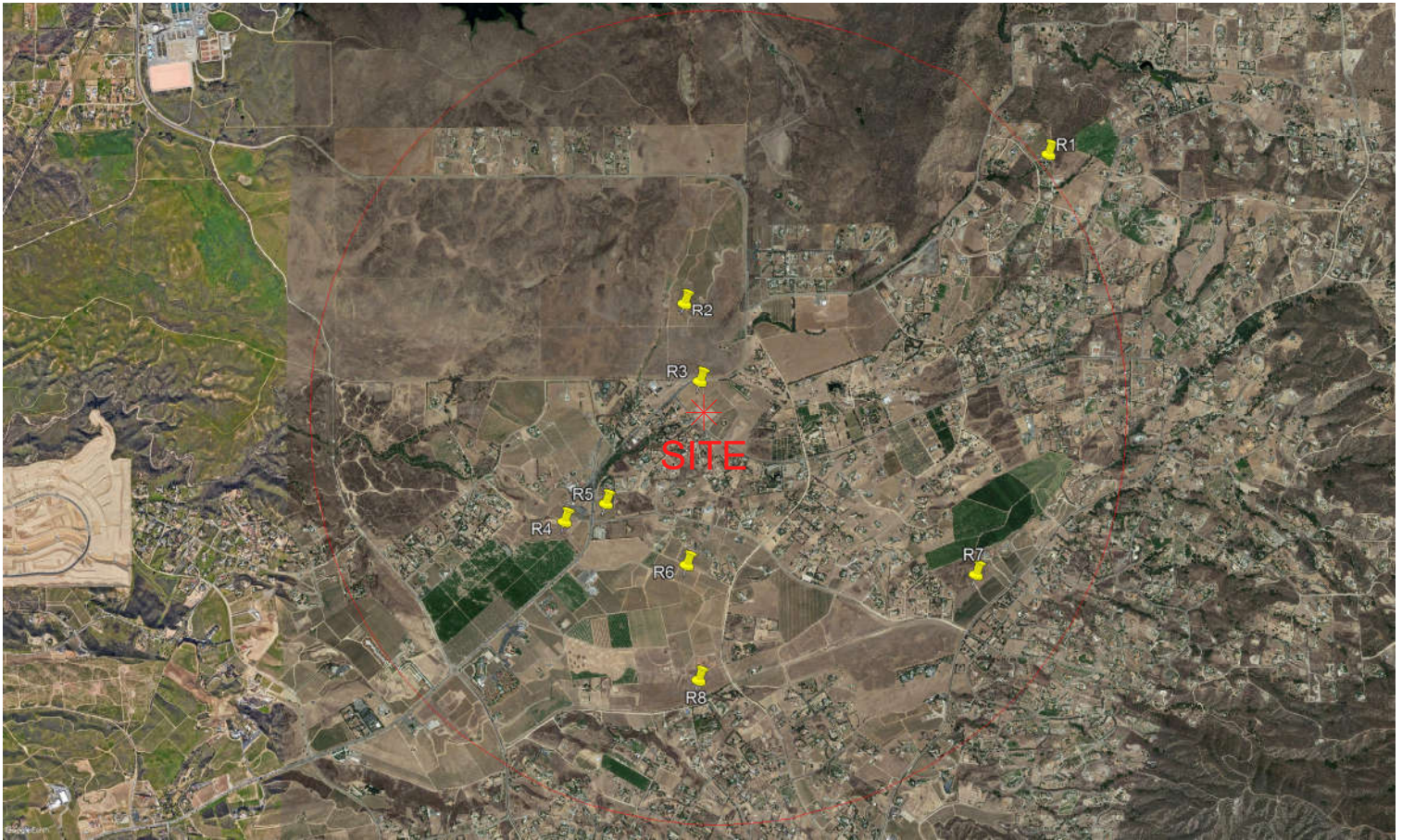
DU = Dwelling Units.

<sup>3</sup> Trip Generation for specified cumulative project was provided by County of Riverside Staff.

<sup>4</sup> Trip Generation Source: *Mexim Temey Winery Traffic Impact Analysis, prepared by RK Engineering Group Inc., dated May 27, 2022.*



Exhibit 4-3  
**Cumulative Projects Location Map**



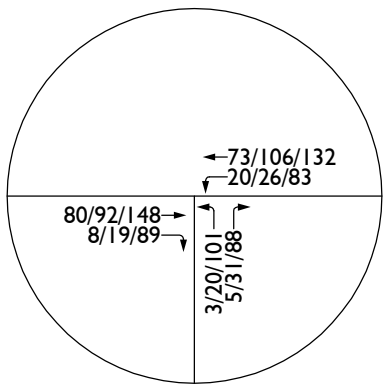
NOTE: See report for full list of cumulative projects and traffic analysis zones (TAZ).

**Legend:**

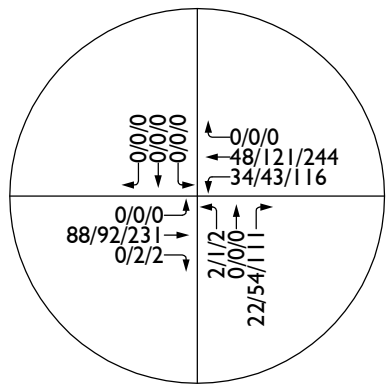
 = County of Riverside Cumulative Project



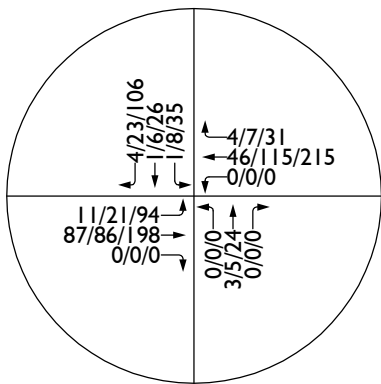
# Exhibit 4-4 Cumulative Projects Traffic Volumes



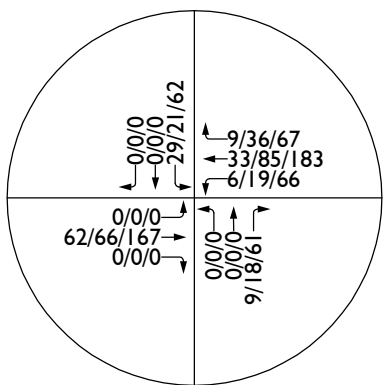
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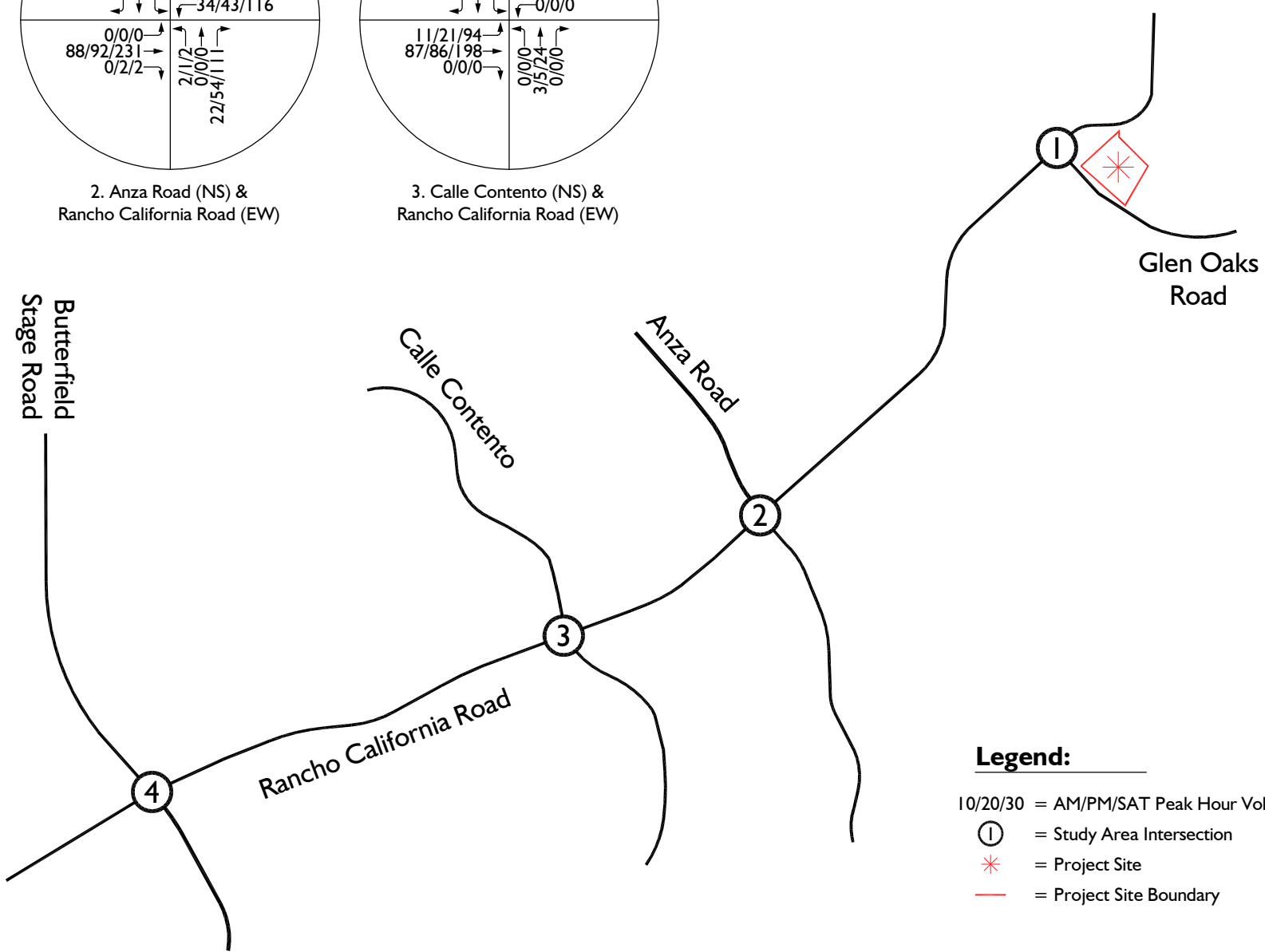
2. Anza Road (NS) & Rancho California Road (EW)



3. Calle Contento (NS) & Rancho California Road (EW)



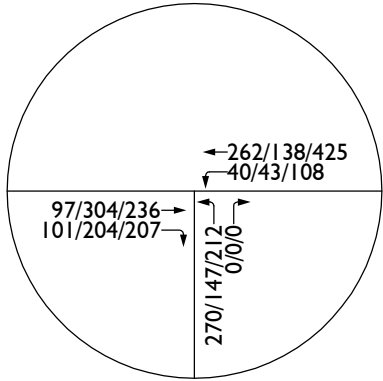
4. Butterfield Stage Road (NS) & Rancho California Road (EW)



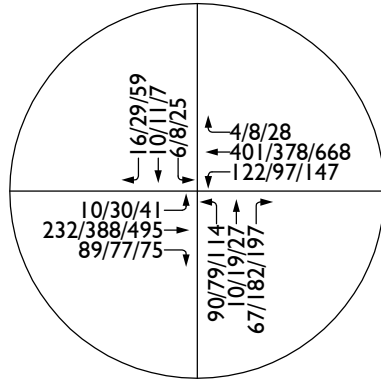
- Legend:**
- 10/20/30 = AM/PM/SAT Peak Hour Volumes
  - ⊙ = Study Area Intersection
  - \* = Project Site
  - = Project Site Boundary



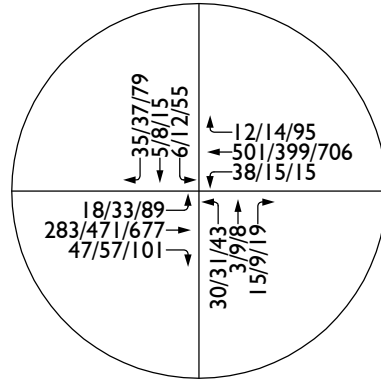
# Project Opening Year (2024) With Ambient Growth Without Project Conditions Traffic Volumes



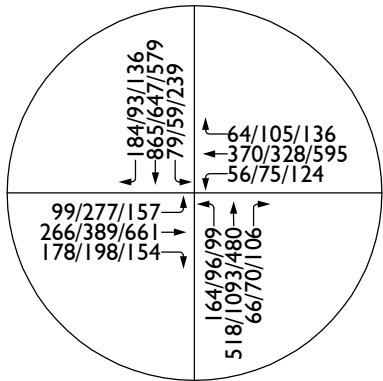
1. Glen Oaks Road (NS) & Rancho California Road (EW)



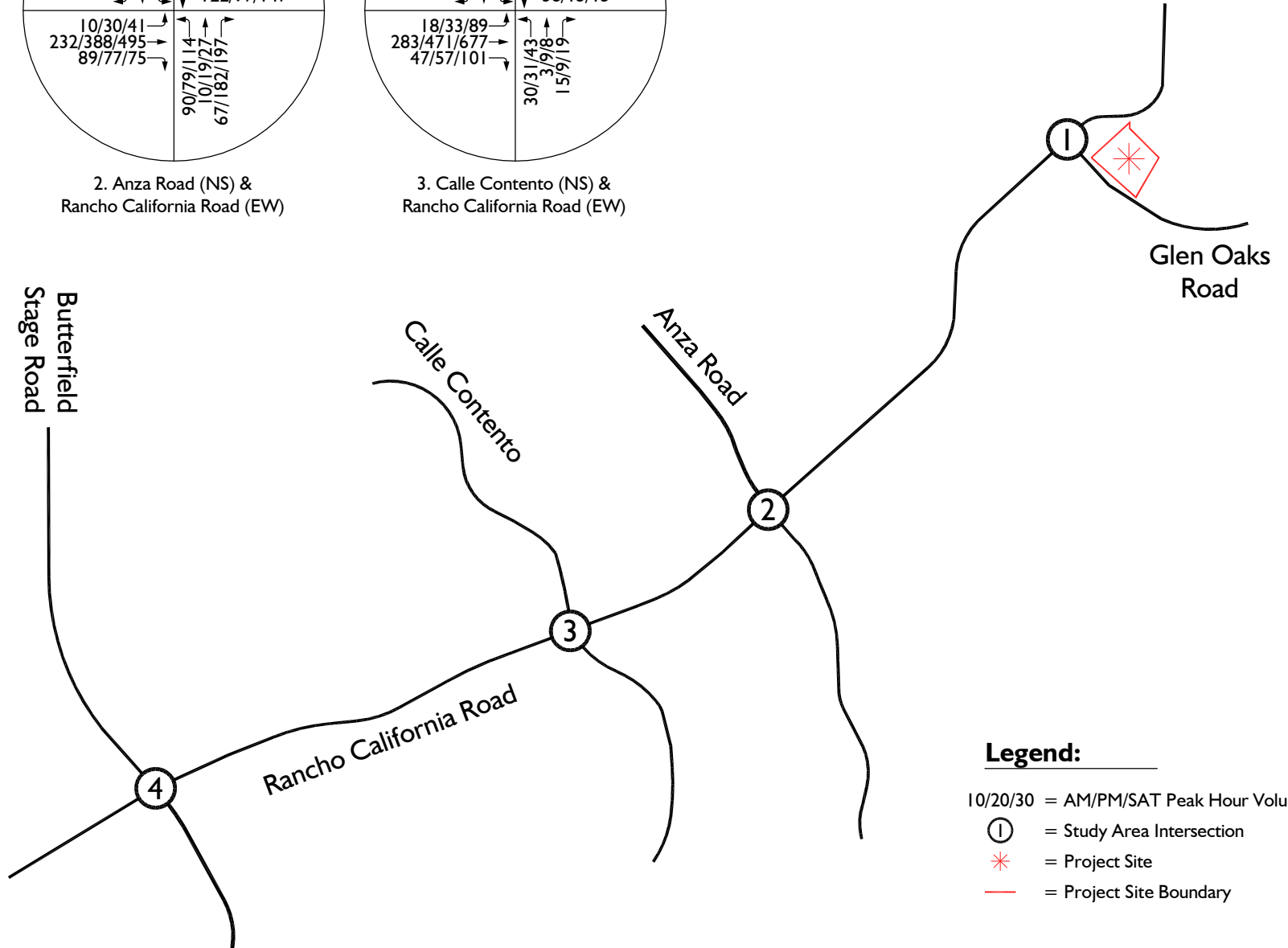
2. Anza Road (NS) & Rancho California Road (EW)



3. Calle Contento (NS) & Rancho California Road (EW)



4. Butterfield Stage Road (NS) & Rancho California Road (EW)

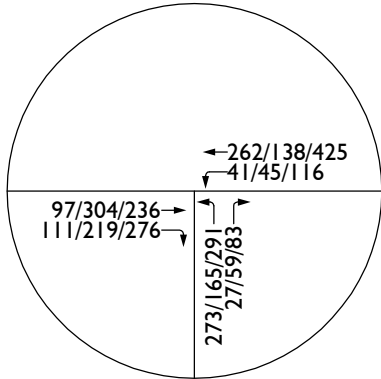


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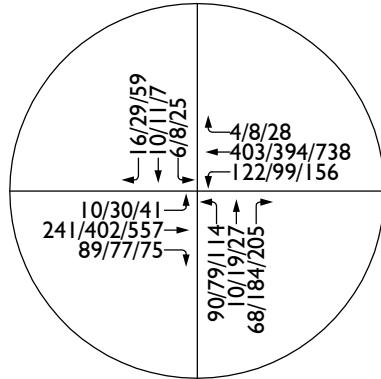
- 10/20/30 = AM/PM/SAT Peak Hour Volumes
- ① = Study Area Intersection
- \* = Project Site
- = Project Site Boundary



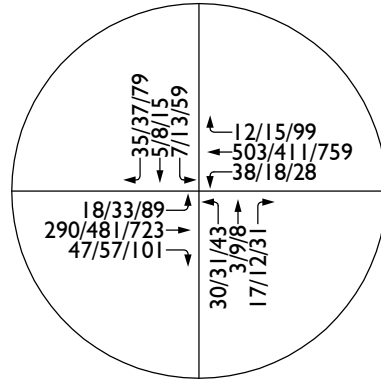
# Project Opening Year (2024) With Ambient Growth With Project Conditions Traffic Volumes



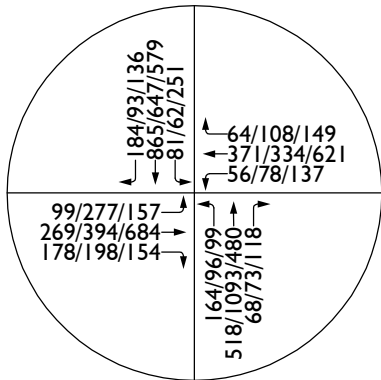
1. Glen Oaks Road (NS) & Rancho California Road (EW)



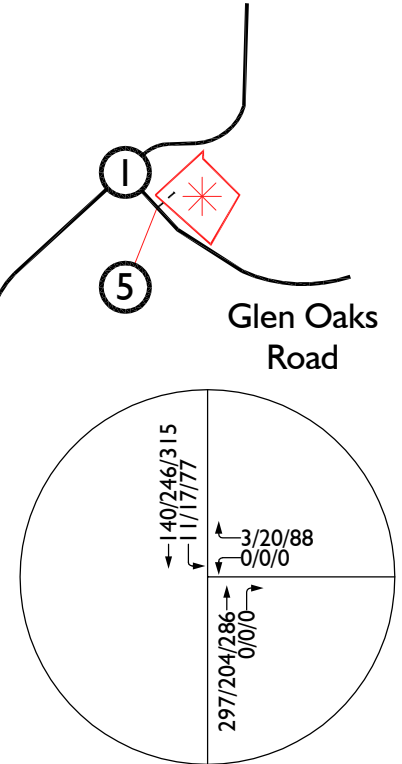
2. Anza Road (NS) & Rancho California Road (EW)



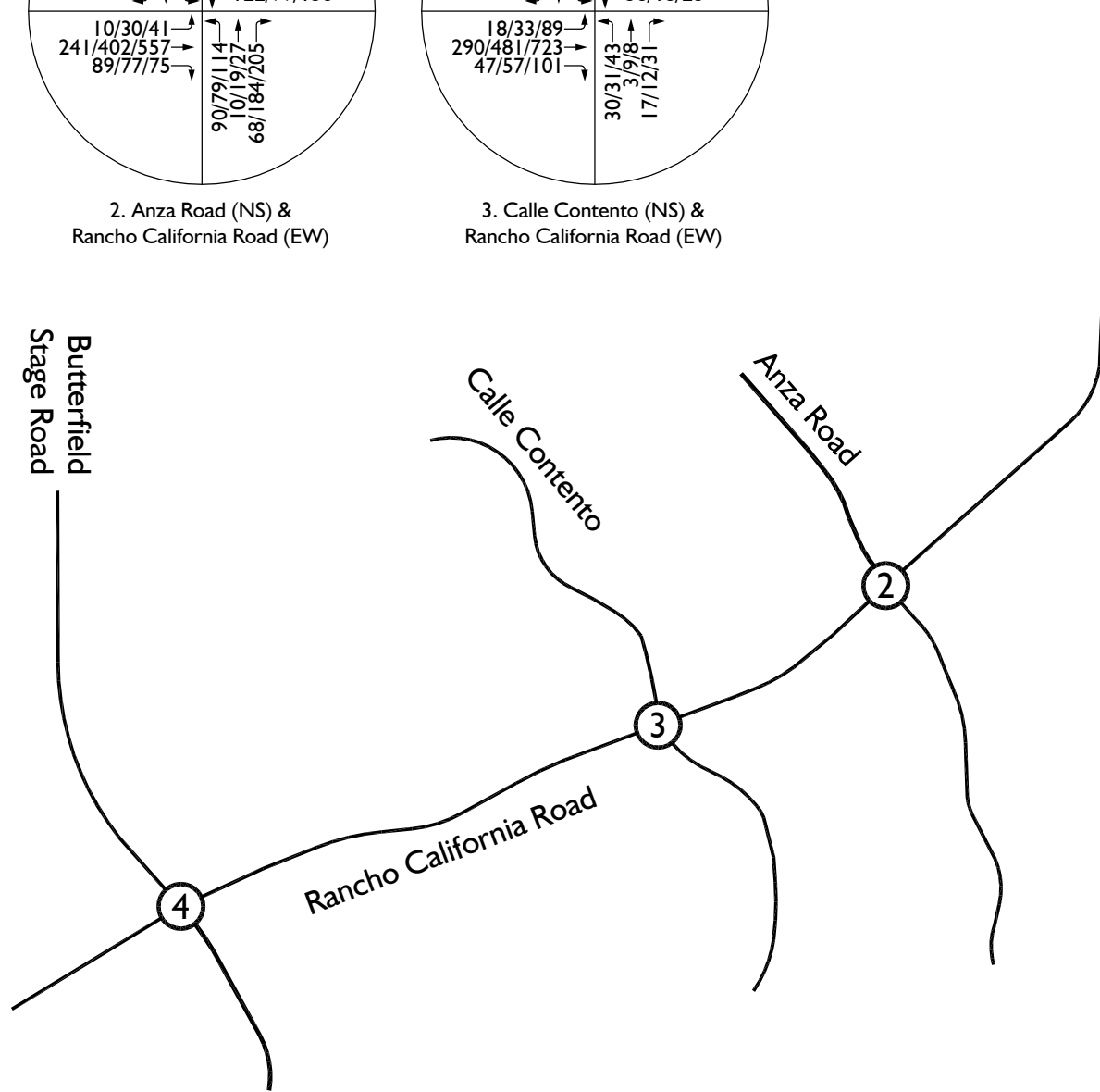
3. Calle Contento (NS) & Rancho California Road (EW)



4. Butterfield Stage Road (NS) & Rancho California Road (EW)



5. Glen Oaks Road (NS) & Project Site Access (EW)

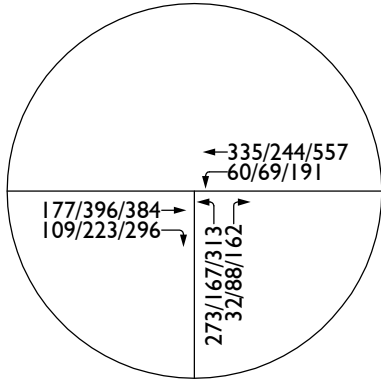


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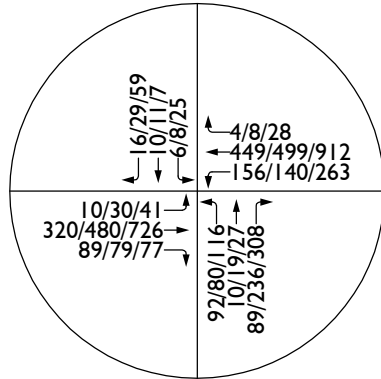
- 10/20/30 = AM/PM/SAT Peak Hour Volumes
- ① = Study Area Intersection
- \* = Project Site
- = Project Access Driveway
- = Project Site Boundary



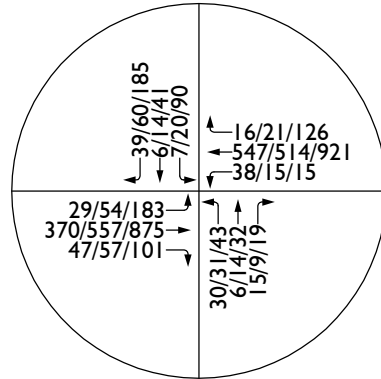
# Project Opening Year (2024) With Ambient Growth & Cumulative Projects Without Project Conditions Traffic Volumes



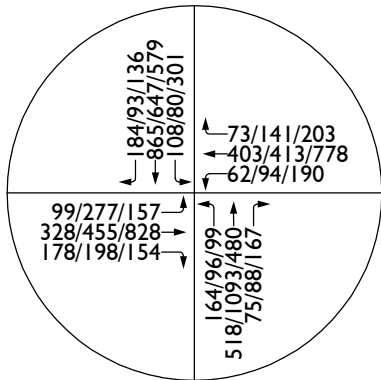
1. Glen Oaks Road (NS) & Rancho California Road (EW)



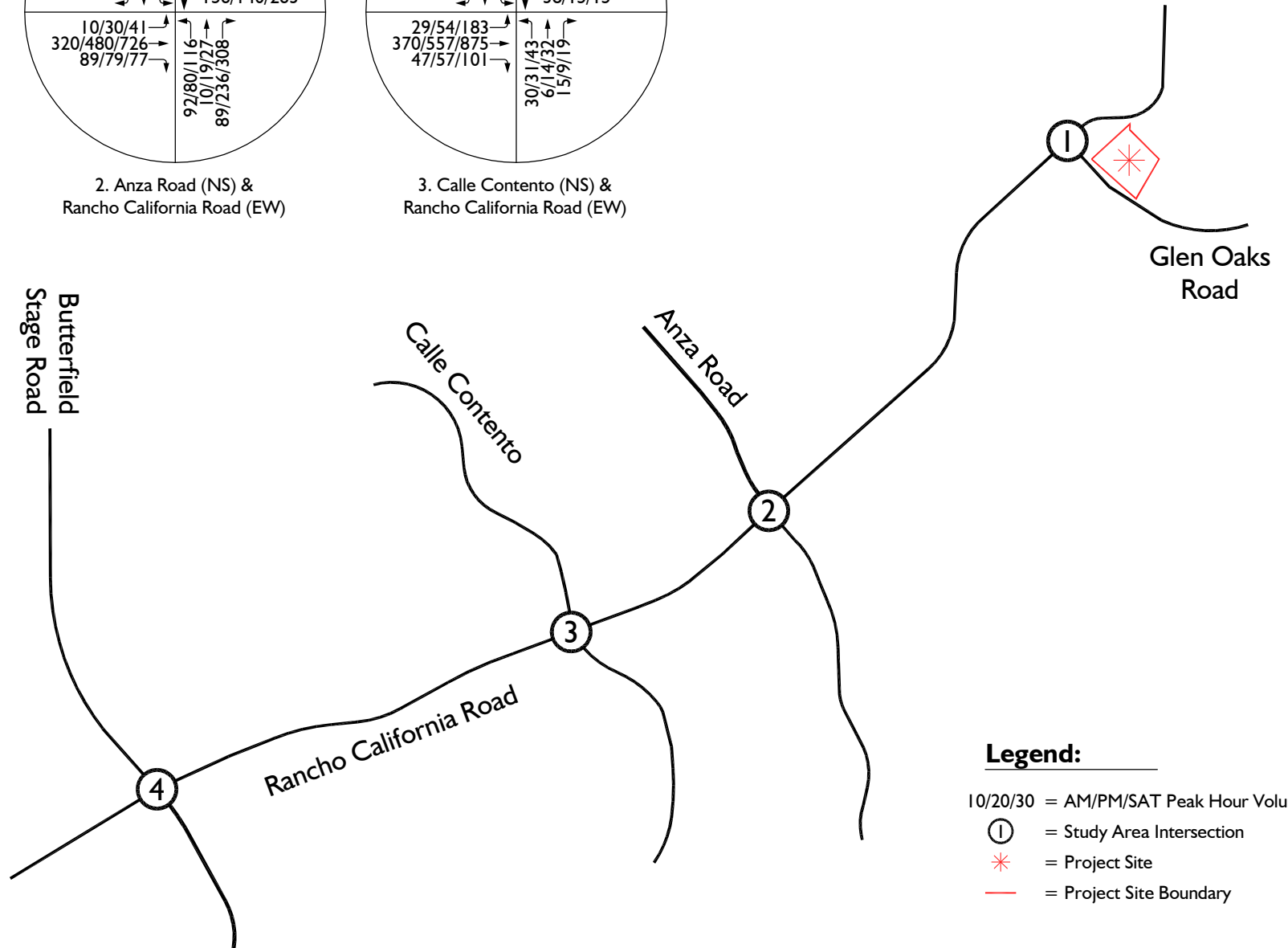
2. Anza Road (NS) & Rancho California Road (EW)



3. Calle Contento (NS) & Rancho California Road (EW)



4. Butterfield Stage Road (NS) & Rancho California Road (EW)

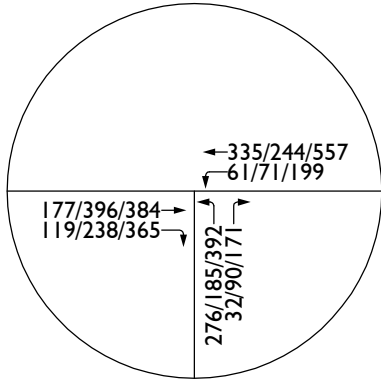


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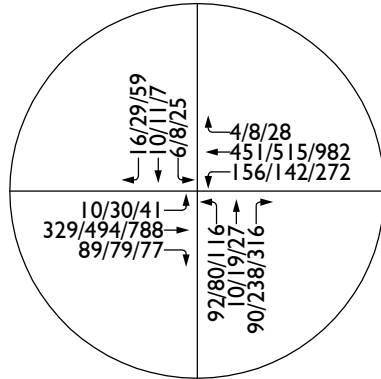
- 10/20/30 = AM/PM/SAT Peak Hour Volumes
- ① = Study Area Intersection
- \* = Project Site
- = Project Site Boundary



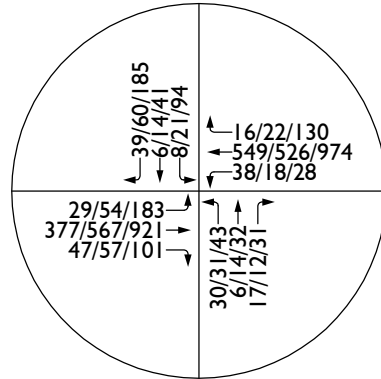
# Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions Traffic Volumes



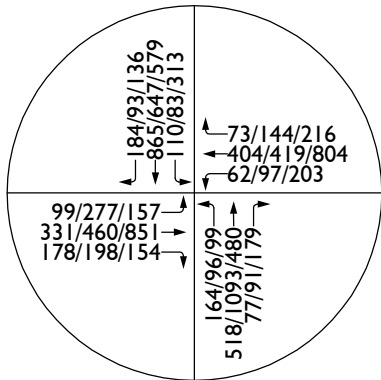
1. Glen Oaks Road (NS) & Rancho California Road (EW)



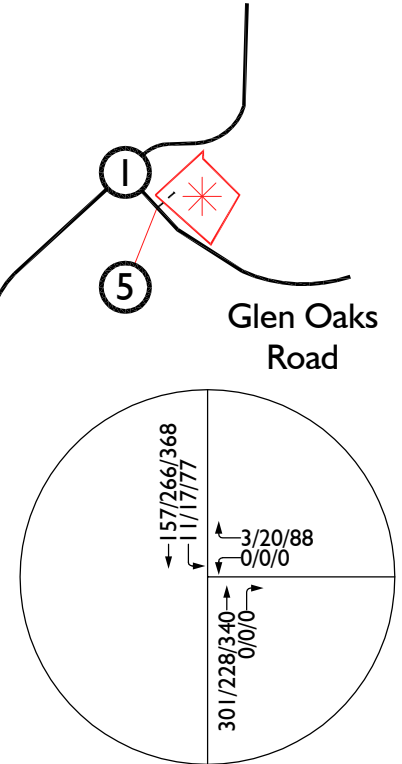
2. Anza Road (NS) & Rancho California Road (EW)



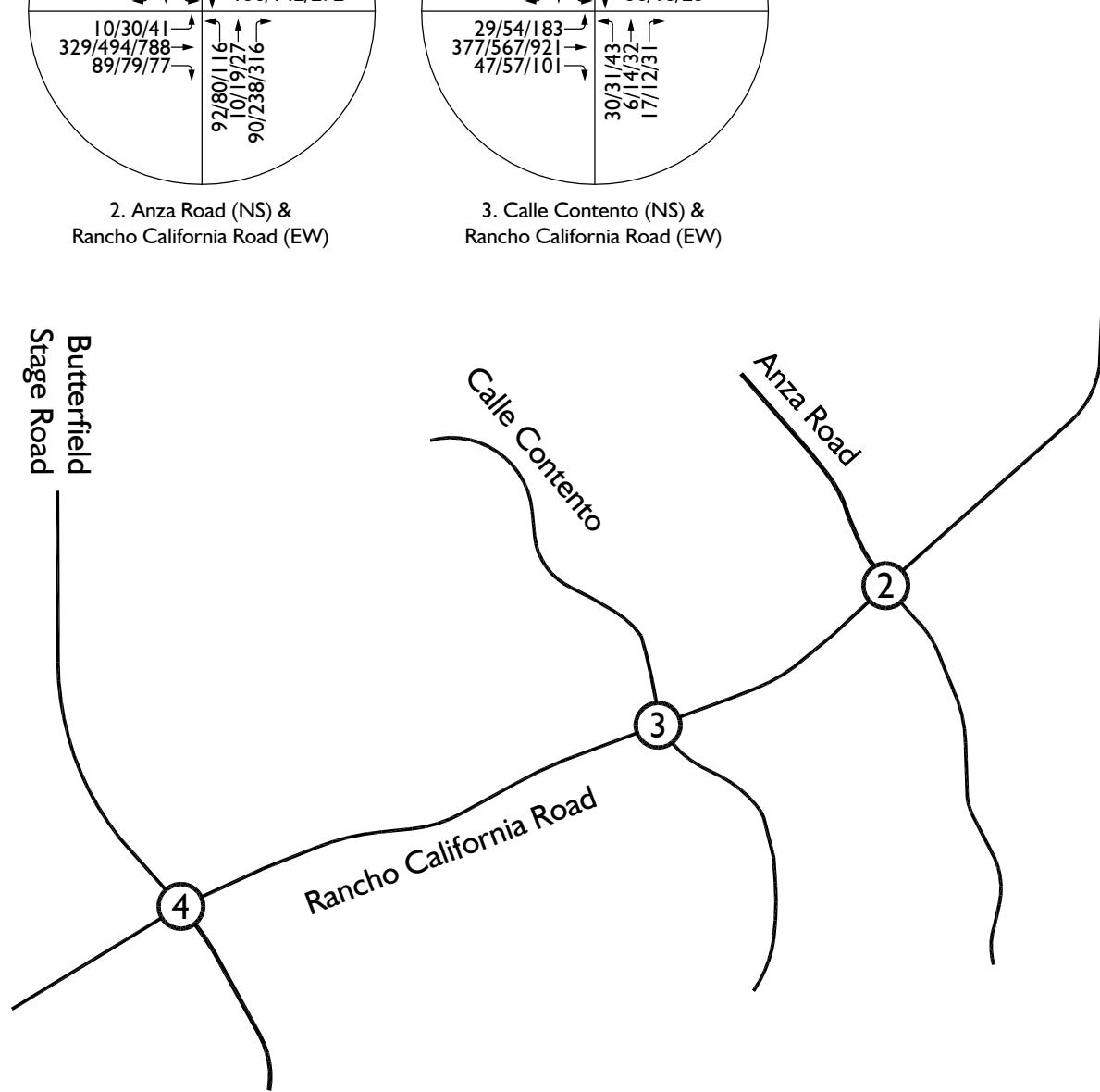
3. Calle Contento (NS) & Rancho California Road (EW)



4. Butterfield Stage Road (NS) & Rancho California Road (EW)



5. Glen Oaks Road (NS) & Project Site Access (EW)



**Legend:**

- 10/20/30 = AM/PM/SAT Peak Hour Volumes
- ① = Study Area Intersection
- \* = Project Site
- = Project Access Driveway
- = Project Site Boundary



## **5.0 Study Intersection Peak Hour LOS Analysis**

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

Based on the performance criteria previously discussed in Section 2.2 of this report, operational improvements shall be identified for any study intersection in which the following conditions apply:

- Operating at an acceptable LOS (LOS D or better) without project traffic, and the addition of project traffic causes the intersection to degrade to a deficient LOS (LOS E or worse), improvements shall be identified to restore operations to acceptable conditions (LOS D or better).
- Already operating at a 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 four (4) existing study intersections are shown in Table 5-1 and are based upon the existing weekday AM, weekday PM, and Saturday midday peak hour traffic volumes shown on Exhibit 3-2 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:

#### Deficient Intersection:

3. Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)
  - SAT Midday Peak Hour – LOS F (236.5 seconds per vehicle)

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

## **5.2 Project Opening Year (2024) With Ambient Growth Without Project Conditions Level of Service**

Project Opening Year (2024) With Ambient Growth Without Project Conditions LOS calculations for the four (4) existing study intersections are shown in Table 5-2 and are based upon the Project Opening Year (2024) With Ambient Growth Without Project Conditions traffic volumes shown on Exhibit 4-5. It should be noted that this traffic scenario assumes the planned roundabout at the intersection of Calle Contenido 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 Project Opening Year (2024) With Ambient Growth Without Project Conditions.

Detailed LOS analysis worksheets for Project Opening Year (2024) With Ambient Growth Without Project Conditions are included in Appendix C.

## **5.3 Project Opening Year (2024) With Ambient Growth With Project Conditions Level of Service**

Project Opening Year (2024) With Ambient Growth With Project Conditions LOS calculations for the five (5) study intersections are also shown in Table 5-2 and are based upon the Project Opening Year (2024) With Ambient Growth With Project Conditions traffic volumes shown on Exhibit 4-6. It should be noted that this traffic scenario assumes the planned roundabout at the intersection of Calle Contenido 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 Project Opening Year (2024) With Ambient Growth With Project Conditions.

Detailed LOS analysis worksheets for Project Opening Year (2024) With Ambient Growth With Project Conditions are included in Appendix D.



#### **5.4 Project Opening Year (2024) With Ambient Growth & Cumulative Projects Without Project Conditions Level of Service**

Project Opening Year (2024) With Ambient Growth & Cumulative Projects Without Project Conditions LOS calculations for the four (4) existing study intersections are shown in Table 5-3 and are based upon the Project Opening Year (2024) With Ambient Growth & Cumulative Projects Without Project Conditions traffic volumes shown on Exhibit 4-7. 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 a deficient LOS during one or multiple peak hours for Project Opening Year (2024) With Ambient Growth & Cumulative Projects Without Project Conditions with the exception of study intersection #3 (Nicholas Valley Road/Calle Contento at Rancho California Road), which is forecast to operate at LOS A during all peak hours. The following presents the intersections forecast to operate at an unacceptable LOS for Project Opening Year (2024) With Ambient Growth & Cumulative Projects Without Project Conditions:

##### Deficient Intersections:

1. Glen Oaks Road (NS) at Rancho California Road (EW)
  - SAT Midday Peak Hour – LOS F (67.5 seconds per vehicle)
  
2. Anza Road (NS) at Rancho California Road (EW)
  - SAT Midday Peak Hour – LOS F (59.7 seconds per vehicle)
  
4. Anza Road (NS) at Rancho California Road (EW)
  - SAT Midday Peak Hour – LOS E (56.4 seconds per vehicle)

Detailed LOS analysis worksheets for Project Opening Year (2024) With Ambient Growth & Cumulative Projects Without Project Conditions are included in Appendix E.

## 5.5 Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions Level of Service

Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions LOS calculations for the five (5) study intersections are also shown in Table 5-3 and are based upon the Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions traffic volumes shown on Exhibit 4-8. 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 a deficient LOS during one or multiple peak hours for Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions with the exception of study intersection #3 (Nicholas Valley Road/Calle Contento at Rancho California Road) and study intersection #5 (Glen Oaks Road at Project Site Access), which are forecast to operate at LOS B or better during all peak hours. The following presents the intersections forecast to operate at an unacceptable LOS for Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions:

### Deficient Intersections:

1. Glen Oaks Road (NS) at Rancho California Road (EW)
  - SAT Midday Peak Hour – LOS F (82.3 seconds per vehicle)
2. Anza Road (NS) at Rancho California Road (EW)
  - SAT Midday Peak Hour – LOS F (80.6 seconds per vehicle)
4. Butterfield Stage Road (NS) at Rancho California Road (EW)
  - SAT Midday Peak Hour – LOS E (60.6 seconds per vehicle)

Detailed LOS analysis worksheets for Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions are included in Appendix F.

Based on the agency-established thresholds of significance, the following study intersections have been identified to require intersection improvements to reduce the

project's impact to less than significant levels for Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions:

1. Glen Oaks Road (NS) at Rancho California Road (EW)
2. Anza Road (NS) at Rancho California Road (EW)
3. [Redacted]
4. Butterfield Stage Road (NS) at Rancho California Road (EW)

### **5.6 Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions Recommended Improvements**

The recommended improvements needed to restore traffic operations to acceptable levels of service (LOS D or better) and reduce the project's impact to less than significant levels for Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions are provided in Table 5-4.

As shown in Table 5-3, assuming implementation of the recommended intersection improvements, the project's impact for Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions would be considered less than significant.

Detailed LOS analysis worksheets for Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions With Improvements are included in Appendix G.

It should be noted that in Table 5-4, the following two alternative intersection improvements are recommended for the intersection of Glen Oaks Road at Rancho California Road (Int. #1):

- |                                   |   |
|-----------------------------------|---|
| <b>IMP #1<br/>(Alternative 1)</b> | Install a traffic signal with protected phasing for the westbound left-turn movement. |
| <b>IMP #2<br/>(Alternative 2)</b> | Install a roundabout.   |

The Glen Oaks Road at Rancho California Road intersection (i.e., study intersection #1) has been evaluated for signalization based on the peak hour signal warrants and procedures contained in the *California Manual on Uniform Traffic Control Devices (CA MUTCD), 2014 Edition, Revision 4 (March 29, 2019)*.

Table 5-5 summarizes the results of the MUTCD peak hour traffic signal warrant analysis. As shown in Table 5-5, the Glen Oaks Road at Rancho California Road intersection does meet the peak hour signal warrants for several analysis scenarios, including Existing Saturday midday peak hour conditions, and therefore the intersection recommendation to install a traffic signal is warranted.

The second alternative intersection improvement which consists of installing a roundabout is also an effective solution that may be more desirable to incorporate as several roundabouts exist and are planned in the vicinity of the study area.

Either alternative intersection improvement would adequately restore traffic operations to acceptable levels of service.

Recommended improvements are shown in Exhibit 5-1.

## **5.7 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 contribution percentages are provided in Table 5-6.

As shown in Table 5-6, the project fair share percentages for Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions are listed below:

- Int. #1 – Glen Oaks Road (NS) / Rancho California Road (EW) – 19.32%
  - (Saturday Midday Peak Hour)
- Int. #2 – Anza Road (NS) / Rancho California Road (EW) – 16.06%
  - (Saturday Midday Peak Hour)
- Int. #4 – Butterfield Stage Road (NS) / Rancho California Road (EW) – 11.83%
  - (Saturday Midday Peak Hour)

**Table 5-1  
Study Intersection LOS Analysis Summary  
Existing Conditions**

Study Intersection		Traffic Control <sup>1</sup>	Methodology	Delay (sec/veh) <sup>2,3</sup>			Level of Service		
				AM	PM	SAT MD	AM	PM	SAT MD
1.	Glen Oaks Road (NS) at Rancho California Road (EW)	AWS	HCM 6	12.9	10.9	17.5	B	B	C
2.	Anza Road (NS) at Rancho California Road (EW)	R	HCM 6	7.0	7.4	13.0	A	A	B
3.	Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)	CSS	HCM 6	20.9	31.1	<b>236.5</b>	C	D	<b>F</b>
4.	Butterfield Stage Road (NS) at Rancho California Road (EW)	TS	HCM 6	33.6	31.6	41.4	C	C	D
5.	Glen Oaks Road (NS) at Project Site Access (EW)	--	HCM 6	<i>Does Not Currently Exist</i>					

<sup>1</sup> TS = Traffic Signal  
 CSS = Cross-Street Stop  
 AWS = All Way Stop  
 R = Roundabout

<sup>2</sup> Deficient operation shown in **Bold**.

<sup>3</sup> HCM Analysis Software: PTV Vistro, Version 2022

**Table 5-2  
Study Intersection LOS Analysis Summary  
Project Opening Year (2024) With Ambient Growth**

Study Intersection	Traffic Control <sup>1</sup>	Methodology	Without Project						With Project											
			Delay (sec/veh) <sup>2,3</sup>			Level of Service			Delay (sec/veh) <sup>2,3</sup>			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. Glen Oaks Road (NS) at Rancho California Road (EW)	AWS	HCM 6	13.4	11.2	19.1	B	B	C	13.6	11.6	25.3	0.2	0.4	6.2	B	B	D	No	No	No
2. Anza Road (NS) at Rancho California Road (EW)	R	HCM 6	7.3	7.8	14.4	A	A	B	7.3	8.0	18.1	0.0	0.2	3.7	A	A	C	No	No	No
3. Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)	R	HCM 6	4.4	4.7	6.3	A	A	A	4.4	4.8	6.7	0.0	0.1	0.4	A	A	A	No	No	No
4. Butterfield Stage Road (NS) at Rancho California Road (EW)	TS	HCM 6	34.2	32.8	43.9	C	C	D	34.3	33.1	45.2	0.1	0.3	1.3	C	C	D	No	No	No
5. Glen Oaks Road (NS) at Project Site Access (EW)	CSS	HCM 6	--	--	--	--	--	--	10.0	9.5	10.6	--	--	--	A	A	B	No	No	No

<sup>1</sup> TS = Traffic Signal

CSS = Cross-Street Stop

AWS = All Way Stop

R = Roundabout

<sup>2</sup> Deficient operation shown in **Bold**.

<sup>3</sup> HCM Analysis Software: PTV Vistro, Version 2022

**Table 5-3  
Study Intersection LOS Analysis Summary  
Project Opening Year (2024) With Ambient Growth & Cumulative Projects**

Study Intersection	Traffic Control <sup>1</sup>	Methodology	Without Project						With Project												
			Delay (sec/veh) <sup>2,3</sup>			Level of Service			Delay (sec/veh) <sup>2,3</sup>			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. Glen Oaks Road (NS) at Rancho California Road (EW)	AWS	HCM 6	16.3	15.1	<b>67.5</b>	C	C	F	16.5	15.6	<b>82.3</b>	0.2	0.5	<b>14.8</b>	C	C	F	No	No	Yes	
	<i>With Improvements<sup>4</sup></i>	TS	HCM 6	--	--	--	--	--	--	19.3	16.3	23.5	--	--	--	B	B	C	No	No	No
	<i>With Improvements<sup>5</sup></i>	R	HCM 6	--	--	--	--	--	--	7.0	7.9	23.4	--	--	--	A	A	C	No	No	No
2. Anza Road (NS) at Rancho California Road (EW)	R	HCM 6	8.7	10.3	<b>59.7</b>	A	B	F	8.8	10.6	<b>80.6</b>	0.1	0.3	<b>20.9</b>	A	B	F	No	No	Yes	
	<i>With Improvements</i>	R	HCM 6	--	--	--	--	--	--	5.5	6.9	16.2	--	--	--	A	A	C	No	No	No
3. Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)	R	HCM 6	4.7	5.4	9.4	A	A	A	4.7	5.4	10.1	0.0	0.0	0.7	A	A	B	No	No	No	
4. Butterfield Stage Road (NS) at Rancho California Road (EW)	TS	HCM 6	36.8	35.4	<b>56.4</b>	D	D	E	36.8	35.7	<b>60.6</b>	0.0	0.3	<b>4.2</b>	D	D	E	No	No	Yes	
	<i>With Improvements</i>	TS	HCM 6	--	--	--	--	--	--	34.7	33.5	54.9	--	--	--	C	C	D	No	No	No
5. Glen Oaks Road (NS) at Project Site Access (EW)	CSS	HCM 6	--	--	--	--	--	--	10.0	9.6	11.1	--	--	--	A	A	B	No	No	No	

<sup>1</sup> TS = Traffic Signal  
 CSS = Cross-Street Stop  
 AWS = All Way Stop  
 R = Roundabout

<sup>2</sup> Deficient operation shown in **Bold**.

<sup>3</sup> HCM Analysis Software: PTV Vistro, Version 2022

<sup>4</sup> Alternative #1 consists of an improvement via an installation of a traffic signal at the study intersection.

<sup>5</sup> Alternative #2 consists of an improvement via an installation of a roundabout at the study intersection.

**TABLE 5-4**  
**Project Opening Year (2024) With Ambient Growth**  
**& Cumulative Projects With Project Conditions**  
**Recommended Improvements - Intersections<sup>1</sup>**

Improvement #	Intersection	Recommended Improvements
IMP - 1 (Alternative 1)	1. Glen Oaks Road (NS) at Rancho California Road (EW)	- Install a traffic signal with protected phasing for the westbound left-turn movement (i.e. 3-Phase Signal) and crosswalks on all legs.
IMP - 2 (Alternative 2)	1. Glen Oaks Road (NS) at Rancho California Road (EW)	- Install a roundabout.
IMP - 3	2. Anza Road (NS) at Rancho California Road (EW)	- Widen the eastbound and westbound approaches along Rancho California Road to provide a second approach lane in each direction (i.e. shared through/left-turn lane and shared through/right-turn lane in each direction). This improvement will require widening/restriping the eastbound and westbound departures to include a second departure lane in each direction (i.e. merge lanes).
IMP - 4	4. Butterfield Stage Road (NS) at Rancho California Road (EW)	- Restripe the westbound approach along Rancho California Road to provide an exclusive westbound right-turn lane with right-turn overlap phasing.

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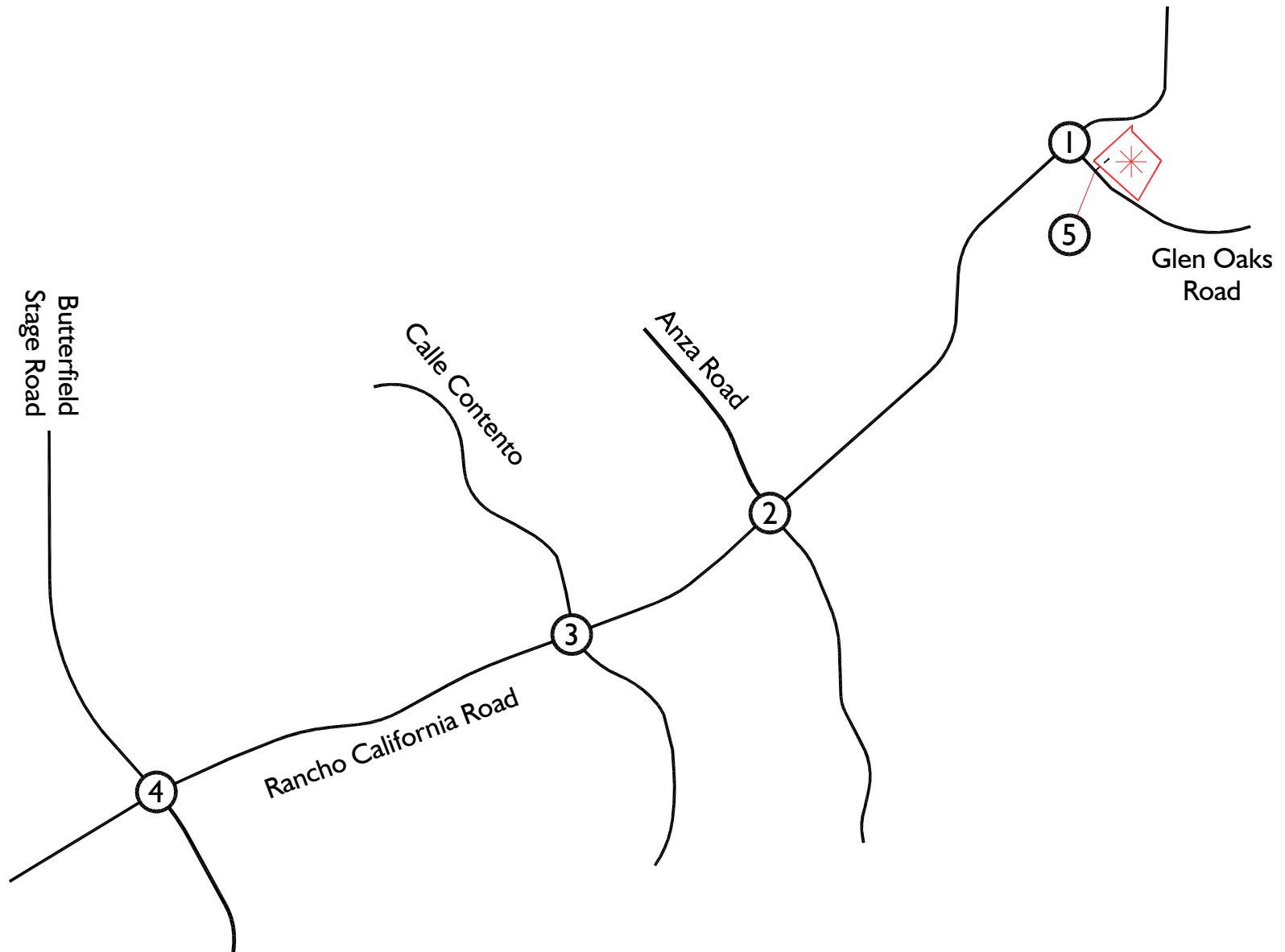
<sup>1</sup> Recommended improvements consist of the minimum necessary improvements to improve operations to achieve an acceptable LOS under AM, PM, and Saturday Midday peak hours.



**Table 5-5  
MUTCD Peak Hour Signal Warrant Analysis Summary**

Intersection	Signal Warrant Met?														
	Existing Conditions			Project Opening Year (2024) With Ambient Growth Without Project Conditions			Project Opening Year (2024) With Ambient Growth With Project Conditions			Project Opening Year (2024) With Ambient Growth & Cumulative Projects Without Project Conditions			Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions		
	AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD	AM	PM	SAT MD
1. Glen Oaks Road (NS) at Rancho California Road (EW)	NO	NO	YES	NO	NO	YES	NO	NO	YES	YES	YES	YES	YES	YES	YES

# Recommended Improvements



	Existing Conditions	Project Opening Year (2024) With Ambient Growth With Project Conditions	Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions
1. Glen Oaks Road (NS) at Rancho California Road (EW)		No Improvements Required	(Alternative #1) 
1. Glen Oaks Road (NS) at Rancho California Road (EW)		No Improvements Required	(Alternative #2) 
2. Anza Road (NS) at Rancho California Road (EW)		No Improvements Required	
4. Butterfield Stage Road (NS) at Rancho California Road (EW)		No Improvements Required	

**Legend:**

- = Traffic Signal
- = Roundabout
- = Right Turn Overlap
- = Recommended Improvement
- = Study Area Intersection
- = Project Site
- = Project Access Driveway
- = Project Site Boundary



**Table 5-6  
Project Fair-Share Contribution Summary<sup>1</sup>  
Project Opening Year (2024) With Ambient Growth  
& Cumulative Projects With Project Conditions**

Intersection	Existing Conditions Traffic			Project Opening Year (2024) With Ambient Growth & Cumulative Projects			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
1. Glen Oaks Road (NS) at Project Site Access (EW)	Peak Hour Not Impacted	Peak Hour Not Impacted	1,214	Peak Hour Not Impacted	Peak Hour Not Impacted	2,068	Peak Hour Not Impacted	Peak Hour Not Impacted	854	Peak Hour Not Impacted	Peak Hour Not Impacted	165	Peak Hour Not Impacted	Peak Hour Not Impacted	<b>19.32%</b>
2. Anza Road (NS) at Rancho California Road (EW)	Peak Hour Not Impacted	Peak Hour Not Impacted	1,810	Peak Hour Not Impacted	Peak Hour Not Impacted	2,738	Peak Hour Not Impacted	Peak Hour Not Impacted	928	Peak Hour Not Impacted	Peak Hour Not Impacted	149	Peak Hour Not Impacted	Peak Hour Not Impacted	<b>16.06%</b>
4. Butterfield Stage Road (NS) at Rancho California Road (EW)	Peak Hour Not Impacted	Peak Hour Not Impacted	3,334	Peak Hour Not Impacted	Peak Hour Not Impacted	4,171	Peak Hour Not Impacted	Peak Hour Not Impacted	837	Peak Hour Not Impacted	Peak Hour Not Impacted	99	Peak Hour Not Impacted	Peak Hour Not Impacted	<b>11.83%</b>

<sup>1</sup> 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 Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Projects Conditions. This table is for informational purposes only and is not tied to any mitigation.

## 6.0 Special Event Traffic Analysis

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This section of the report analyzes the potential traffic impacts caused by special events that are anticipated to occur at the project site. Specifically, this special event analysis will calculate the projected peak hour trip generation of a typical special event, assess whether the traffic associated with a special event would adversely impact the project access point or the adjacent off-site intersection of Glen Oaks Road at Rancho California Road, and determine whether or not a traffic management plan (TMP) will be required.

A special events operation schedule was provided by the project team detailing the number of employees and guests that are expected to be on-site during any given hour of the day. The special events operation schedule is provided in Appendix H.

Based on information provided by the project team, the following assumptions have been made to calculate the projected peak hour trip generation of a typical special event:

- Special Events are expected to occur typically on Fridays and Saturdays.
- Special Event traffic does overlap during certain hours with normal tasting room traffic.
- For both Wine Tasting Toom and Special Event guests, an average vehicle ridership of two (2) people per vehicle (i.e., AVR = 2.0) has been conservatively assumed.
- All employees (for wine tasting room and special events) are conservatively assumed to arrive individually (i.e., AVR = 1.0).
- Inbound traffic for special events is expected to arrive during the 6:00 PM hour; Special events are expected to start after the wine tasting room is closed, around 6:30 PM.
- Special events are anticipated to end around 10 PM with all guest traffic departing within the 10 PM hour.
- A maximum of 145 guests and 17 employees are anticipated to be on-site during any given hour for the tasting room. A maximum of 150 guests and 8 employees are anticipated to be on-site during any given hour for special events.

Based on the special events operation schedule and assumptions previously identified, Table 6-1 presents the Special Event Hourly Trip Generation. As shown in Table 6-1, the peak hour for a special event occurs between 6:00 PM and 7:00 PM and is forecast to

generate approximately 157 peak hour trips, which includes approximately 83 inbound trips and approximately 74 outbound trips.

Comparison of the projected special event peak hour trip generation with the typical Saturday midday peak hour trip generation of the tasting room (i.e., 165 Saturday midday peak hour trips as previously shown in Table 4-2) shows that special event traffic is forecast to generate 6 more inbound trips, 14 fewer outbound trips, and 8 fewer total peak hour trips. The 6 inbound trips are considered to be a nominal increase and overall traffic generated by special events is less than the Saturday midday peak hour trip generation of the tasting room. Furthermore, the special event peak hour of 6:00 PM to 7:00 PM falls well outside the actual Saturday midday peak hour of adjacent roadway traffic at the intersection of Glen Oaks Road at Rancho California Road (i.e., 2:00 PM to 3:00 PM).

As a result, it has been determined that the traffic associated with a special event will not cause new or worse impacts at either study intersection #1 (Glen Oaks Road at Rancho California Road) or study intersection #5 (Glen Oaks Road at Project Site Access). With the improvements identified previously in Section 5.6 at study intersection #1 (Glen Oaks Road at Rancho California Road), this intersection along with the Project Site Access are expected to operate at acceptable levels of service during special event peak hours. As such, no additional analysis, or a traffic management plan (TMP) is required.

**Table 6-1  
Special Event (Friday Through Sunday) Hourly Trip Generation<sup>1</sup>**

Time-frame	Total Employees			Total <u>Person Trips</u> (Guests)			Total <u>Vehicle Trips</u> (Guests) AVR = 2.0			Total Vehicle Trips (Employees + Guests)		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
8:00 AM - 9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM - 10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM - 11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM - 12:00 PM	12	0	12	55	0	55	28	0	28	40	0	40
12:00 PM - 1:00 PM	0	0	0	35	15	50	18	8	26	18	8	26
1:00 PM - 2:00 PM	5	0	5	90	20	110	45	10	55	50	10	60
2:00 PM - 3:00 PM	0	0	0	40	40	80	20	20	40	20	20	40
3:00 PM - 4:00 PM	0	0	0	35	35	70	18	18	36	18	18	36
4:00 PM - 5:00 PM	0	0	0	40	40	80	20	20	40	20	20	40
5:00 PM - 6:00 PM	0	0	0	35	35	70	18	18	36	18	18	36
6:00 PM - 7:00 PM	8	9	17	150	130	280	75	65	140	83	74	157
7:00 PM - 8:00 PM	0	8	8	0	15	15	0	8	8	0	16	16
8:00 PM - 9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM - 10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM - 11:00 PM	0	4	4	0	150	150	0	75	75	0	79	79
11:00 PM - 12:00 AM	0	2	2	0	0	0	0	0	0	0	2	2
12:00 AM - 1:00 AM	0	2	2	0	0	0	0	0	0	0	2	2

<sup>1</sup> Based on Austin Winery Employee Operation Schedule, see Appendix H. This includes typical tasting room traffic as well as special event traffic.

**Special Event Assumptions**

- Special Events will most likely occur on Fridays and Saturdays.
- For both tasting room and special event guests, an average vehicle ridership of 2 people per vehicle has been conservatively assumed (i.e., AVR = 2.0).
- All employees (for tasting room and special events) are conservatively assumed to arrive individually (i.e., AVR = 1.0).
- Inbound traffic for special events are expected to arrive during the 6:00 PM hour. Special events are expected to start after the tasting room is closed, around 6:30 PM.
- Special events are anticipated to end around 10 PM with all guest traffic leaving within the 10 PM hour.

## **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 for 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 (*Austin Vineyard Class V Winery Project Vehicle Miles Traveled (VMT) Screening Analysis*, dated August 9, 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 in 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 (MTCO<sub>2</sub>e).

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 <sup>1</sup>
Project GHG Emissions (Annual) <sup>2</sup>	540.96 MTCO <sub>2</sub> e
County of Riverside Small Project Screening Criteria	3,000 MTCO <sub>2</sub> e
<b>Less than Significant?</b>	<b>Yes</b>

<sup>1</sup> MTCO<sub>2</sub>e = Metric Tons of Carbon Dioxide Equivalent

<sup>2</sup> *Austin Vineyard Class V Winery Air Quality and Greenhouse Gas Impact Study, August 5, 2022*, prepared by RK Engineering Group.

Based on 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**

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### **8.1 Project Summary**

The proposed project is located at 35620 Glen Oaks Road, in the Temecula Valley Wine Country Community Plan area of the unincorporated County of Riverside. The proposed project consists of the construction and operation of a Class V winery that would include a 4,506 square foot (SF) tasting room, a 2,970 SF tasting patio, a 4,000 SF cellar, a 616 SF covered entry patio, a 2,200 SF outdoor production area, and an outdoor wedding reception area.

Access to the project site will be provided via one (1) full-access unsignalized driveway located along Glen Oaks Road.

The project is planned to open in 2024 and will be evaluated in one (1) single phase.

The proposed project is forecast to generate approximately 237 weekday daily trips which include approximately 14 weekday AM peak hour trips and approximately 37 weekday PM peak hour trips. Additionally, the proposed project is forecast to generate approximately 921 Saturday daily trips which include approximately 165 Saturday midday peak hour trips.

### **8.2 Traffic Study Area & Analysis Scenarios**

The study area consists of the following five (5) intersections listed below. The jurisdiction where each study intersection is located is also identified.

1. Glen Oaks Road (NS) at Rancho California Road (EW) [County of Riverside]
2. Anza Road (NS) at Rancho California Road (EW) [County of Riverside]
3. Nicholas Valley Rd/Calle Contento (NS) at Rancho California Road (EW) [County of Riv.]
4. Butterfield Stage Rd (NS) at Rancho California Rd (EW) [County of Riv./City of Temecula]
5. Glen Oaks Road (NS) at Project Site Access (EW) [County of Riverside]

The analysis evaluates traffic conditions for the study intersections under 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 periods:

- Existing Conditions;
- Project Opening Year (2024) With Ambient Growth Without Project Conditions;
- Project Opening Year (2024) With Ambient Growth With Project Conditions;
- Project Opening Year (2024) With Ambient Growth & Cumulative Projects Without Project Conditions; and
- Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions.

### **8.3 Planned Intersection Improvements**

The County of Riverside is finalizing design plans to convert the intersection of Nicholas Valley Road / Calle Contento Road 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 are the currently proposed lane geometries after the installation of the roundabout: The southbound approach along Nicholas Valley Road 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 Intersection Analysis Summary**

The intersection level of service analysis has been performed at five (5) study intersections within the vicinity of the site where the project may contribute a significant amount of traffic. Project deficiencies have been evaluated within the study area based on peak hour level of service criteria.

The following study area intersections have been identified to operate at unacceptable levels of service, resulting in required intersection improvements for analysis scenarios with the addition of project traffic.

1. Glen Oaks Road (NS) at Rancho California Road (EW)
2. Anza Road (NS) at Rancho California Road (EW)
4. Butterfield Stage Road (NS) at Rancho California Road (EW)

The study intersection of Nicholas Valley Road / Calle Contento Road at Rancho California Road (Int. #3) has been identified to operate deficiently under existing conditions, however, the planned improvements for this intersection will resolve the level of service deficiencies

### **8.5 Off-Site Intersection Improvement Recommendations**

As shown in Table 5-4, the following intersection improvements are recommended for the deficient study intersections:

#### **Intersection #1:** Glen Oaks Road (NS) at Rancho California Road (EW)

- a) Install a traffic signal with protected phasing for the westbound left-turn movement. [Alternative 1]
- b) Install a roundabout. [Alternative 2]

#### **Intersection #2:** Anza Road (NS) at Rancho California Road (EW)

- a) Widen the eastbound and westbound approaches along Rancho California Road to provide a second approach lane in each direction (i.e., shared through/left-turn lane and shared through/right-turn lane in each direction). This improvement will require widening/restriping the eastbound and westbound departures to include a second departure lane in each direction (i.e., merge lanes).

#### **Intersection #4:** Butterfield Stage Road (NS) at Rancho California Road (EW)

- a) Restripe the westbound approach along Rancho California Road to provide an exclusive westbound right-turn lane with right-turn overlap phasing.

It should be noted that the following two alternative intersection improvements are recommended for the intersection of Glen Oaks Road at Rancho California Road (Int. #1):

**IMP #1  
(Alternative 1)**

Install a traffic signal with protected phasing for the westbound left-turn movement.

**IMP #2  
(Alternative 2)**

Install a roundabout.

The Glen Oaks Road at Rancho California Road intersection (i.e., study intersection #1) has been evaluated for signalization based on the peak hour signal warrants and procedures contained in the *California Manual on Uniform Traffic Control Devices (CA MUTCD), 2014 Edition, Revision 4 (March 29, 2019)*.

The Glen Oaks Road at Rancho California Road intersection does meet the peak hour signal warrants for several analysis scenarios, including Existing Saturday midday peak hour conditions, and therefore the intersection recommendation to install a traffic signal is warranted.

The second alternative intersection improvement which consists of installing a roundabout is also an effective solution that may be more desirable to incorporate as several roundabouts exist and are planned in the vicinity of the study area.

Either alternative intersection improvement would adequately restore traffic operations to acceptable levels of service.

## **8.6 Project Fair Share Contribution Summary**

The project fair share percentages for Project Opening Year (2024) With Ambient Growth & Cumulative Projects With Project Conditions are listed below:

- Int. #1 – Glen Oaks Road (NS) / Rancho California Road (EW) – 19.32%
  - (Saturday Midday Peak Hour)
- Int. #2 – Anza Road (NS) / Rancho California Road (EW) – 16.06%
  - (Saturday Midday Peak Hour)
- Int. #4 – Butterfield Stage Road (NS) / Rancho California Road (EW) – 11.83%
  - (Saturday Midday Peak Hour)

## **8.7 Special Event Traffic Analysis Summary**

Based on the special events operation schedule and assumptions previously discussed in Section 6.0 of this report, the peak hour for a special event occurs between 6:00 PM and

7:00 PM and is forecast to generate approximately 157 peak hour trips, which includes approximately 83 inbound trips and approximately 74 outbound trips.

Comparison of the projected special event peak hour trip generation with the typical Saturday midday peak hour trip generation of the tasting room (i.e., 165 Saturday midday peak hour trips) shows that special event traffic is forecast to generate 6 more inbound trips, 14 fewer outbound trips, and 8 fewer total peak hour trips. The 6 inbound trips are considered to be a nominal increase and overall traffic generated by special events is less than the Saturday midday peak hour trip generation of the tasting room. Furthermore, the special event peak hour of 6:00 PM to 7:00 PM falls well outside the actual Saturday midday peak hour of adjacent roadway traffic at the intersection of Glen Oaks Road at Rancho California Road (i.e., 2:00 PM to 3:00 PM).

As a result, it has been determined that the traffic associated with a special event will not cause new or worse impacts at either study intersection #1 (Glen Oaks Road at Rancho California Road) or study intersection #5 (Glen Oaks Road at Project Site Access). With the improvements identified previously in Section 5.6 at study intersection #1 (Glen Oaks Road at Rancho California Road), this intersection along with the Project Site Access are expected to operate at acceptable levels of service during special event peak hours. As such, no additional analysis, or a traffic management plan (TMP) is required.

## **8.8 Vehicles Miles Traveled (VMT) Analysis Summary**

The proposed project qualifies for the “Small Projects” screening criteria and may be presumed to have a less than significant impact to VMT as Annual Project GHG emissions are forecasted to be less than the 3,000 Metric Tons of Carbon Dioxide Equivalent (MTCO<sub>2</sub>e). As such, no further VMT analysis is required.

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# Appendices

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## **Appendix A**

Traffic Count Worksheets &  
Growth Factor Worksheet

County of Riverside  
 N/S: Glen Oaks Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 01\_CRV\_Glen\_RC AM  
 Site Code : 10522640  
 Start Date : 7/7/2022  
 Page No : 1

Groups Printed- Total Volume

Start Time	Rancho California Road Westbound			Glen Oaks Road Northbound			Rancho California Road Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:00 AM	7	32	39	27	6	33	14	26	40	112
07:15 AM	14	37	51	40	4	44	14	16	30	125
07:30 AM	7	38	45	45	4	49	14	19	33	127
07:45 AM	8	52	60	48	7	55	13	19	32	147
Total	36	159	195	160	21	181	55	80	135	511
08:00 AM	6	59	65	46	6	52	21	12	33	150
08:15 AM	10	33	43	62	3	65	16	19	35	143
08:30 AM	6	56	62	51	5	56	24	27	51	169
08:45 AM	13	48	61	39	3	42	22	18	40	143
Total	35	196	231	198	17	215	83	76	159	605
Grand Total	71	355	426	358	38	396	138	156	294	1116
Apprch %	16.7	83.3		90.4	9.6		46.9	53.1		
Total %	6.4	31.8	38.2	32.1	3.4	35.5	12.4	14	26.3	

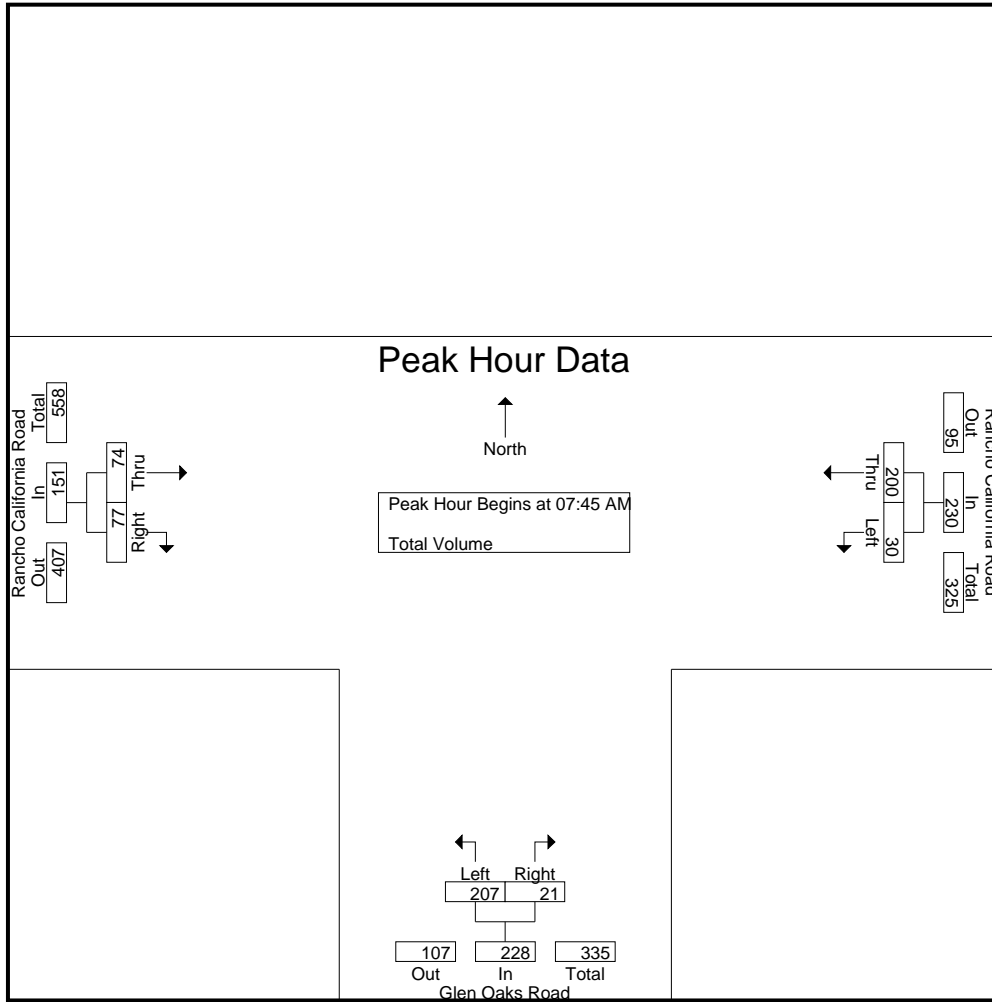
Start Time	Rancho California Road Westbound			Glen Oaks Road Northbound			Rancho California Road Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
07:45 AM	8	52	60	48	7	55	13	19	32	147
08:00 AM	6	<b>59</b>	<b>65</b>	46	6	52	21	12	33	150
08:15 AM	<b>10</b>	33	43	<b>62</b>	3	<b>65</b>	16	19	35	143
08:30 AM	6	56	62	51	5	56	<b>24</b>	<b>27</b>	<b>51</b>	<b>169</b>
Total Volume	30	200	230	207	21	228	74	77	151	609
% App. Total	13	87		90.8	9.2		49	51		
PHF	.750	.847	.885	.835	.750	.877	.771	.713	.740	.901

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



County of Riverside  
 N/S: Glen Oaks Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 01\_CRV\_Glen\_RC AM  
 Site Code : 10522640  
 Start Date : 7/7/2022  
 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		
+0 mins.	6	<b>59</b>	<b>65</b>	48	<b>7</b>	55	21	12	33
+15 mins.	10	33	43	46	6	52	16	19	35
+30 mins.	6	56	62	<b>62</b>	3	<b>65</b>	<b>24</b>	<b>27</b>	<b>51</b>
+45 mins.	<b>13</b>	48	61	51	5	56	22	18	40
Total Volume	35	196	231	207	21	228	83	76	159
% App. Total	15.2	84.8		90.8	9.2		52.2	47.8	
PHF	.673	.831	.888	.835	.750	.877	.865	.704	.779

County of Riverside  
 N/S: Glen Oaks Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 01\_CRV\_Glen\_RC PM  
 Site Code : 10522640  
 Start Date : 7/7/2022  
 Page No : 1

Groups Printed- Total Volume

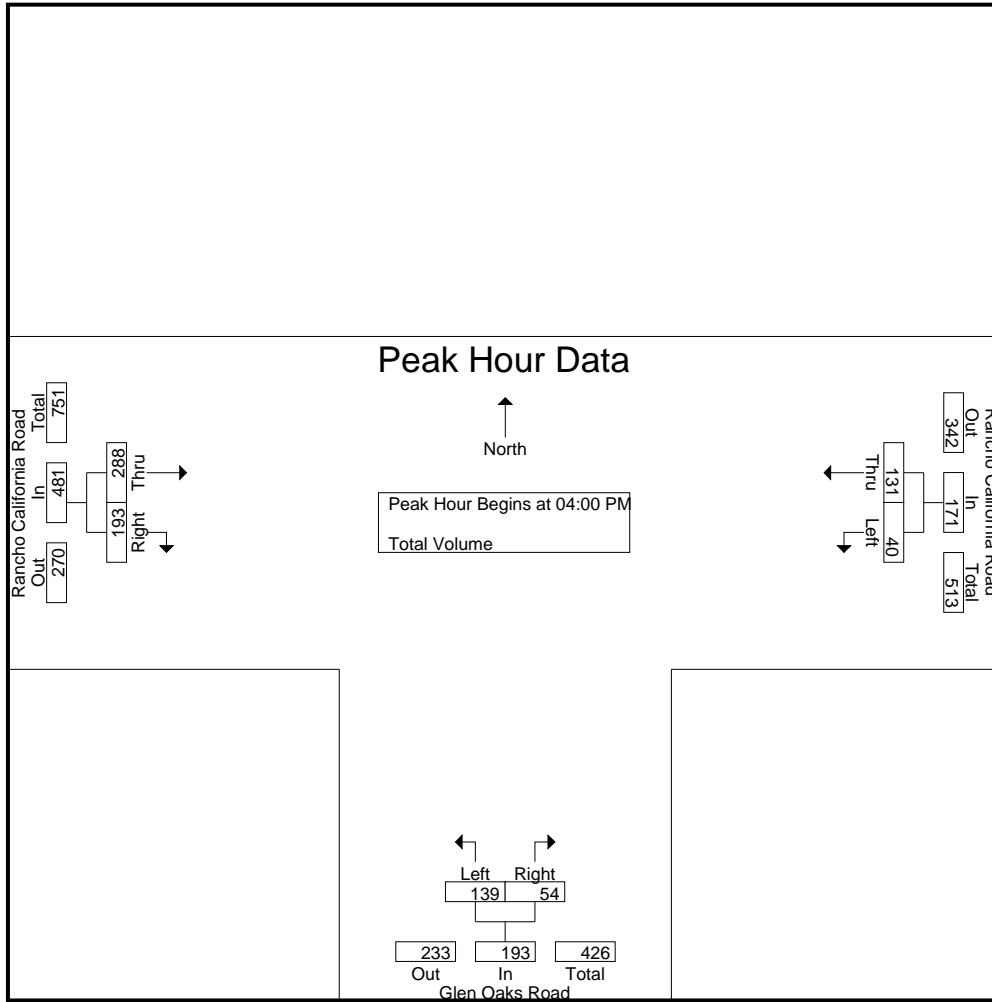
Start Time	Rancho California Road Westbound			Glen Oaks Road Northbound			Rancho California Road Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	10	30	40	41	7	48	75	59	134	222
04:15 PM	13	32	45	42	16	58	65	48	113	216
04:30 PM	9	32	41	28	15	43	74	48	122	206
04:45 PM	8	37	45	28	16	44	74	38	112	201
Total	40	131	171	139	54	193	288	193	481	845
05:00 PM	7	49	56	23	10	33	74	43	117	206
05:15 PM	10	37	47	22	11	33	71	45	116	196
05:30 PM	8	29	37	21	12	33	90	51	141	211
05:45 PM	12	27	39	23	10	33	62	32	94	166
Total	37	142	179	89	43	132	297	171	468	779
Grand Total	77	273	350	228	97	325	585	364	949	1624
Apprch %	22	78		70.2	29.8		61.6	38.4		
Total %	4.7	16.8	21.6	14	6	20	36	22.4	58.4	

Start Time	Rancho California Road Westbound			Glen Oaks Road Northbound			Rancho California Road Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
04:00 PM	10	30	40	41	7	48	<b>75</b>	<b>59</b>	<b>134</b>	<b>222</b>
04:15 PM	<b>13</b>	32	<b>45</b>	<b>42</b>	<b>16</b>	<b>58</b>	65	48	113	216
04:30 PM	9	32	41	28	15	43	74	48	122	206
04:45 PM	8	<b>37</b>	45	28	16	44	74	38	112	201
Total Volume	40	131	171	139	54	193	288	193	481	845
% App. Total	23.4	76.6		72	28		59.9	40.1		
PHF	.769	.885	.950	.827	.844	.832	.960	.818	.897	.952

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

County of Riverside  
 N/S: Glen Oaks Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 01\_CRV\_Glen\_RC PM  
 Site Code : 10522640  
 Start Date : 7/7/2022  
 Page No : 2



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

	04:30 PM			04:00 PM			04:45 PM		
+0 mins.	9	32	41	41	7	48	74	38	112
+15 mins.	8	37	45	42	16	58	74	43	117
+30 mins.	7	49	56	28	15	43	71	45	116
+45 mins.	10	37	47	28	16	44	90	51	141
Total Volume	34	155	189	139	54	193	309	177	486
% App. Total	18	82		72	28		63.6	36.4	
PHF	.850	.791	.844	.827	.844	.832	.858	.868	.862

County of Riverside  
 N/S: Glen Oaks Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 01\_CRV\_Glen\_RC SAT  
 Site Code : 10522640  
 Start Date : 7/9/2022  
 Page No : 1

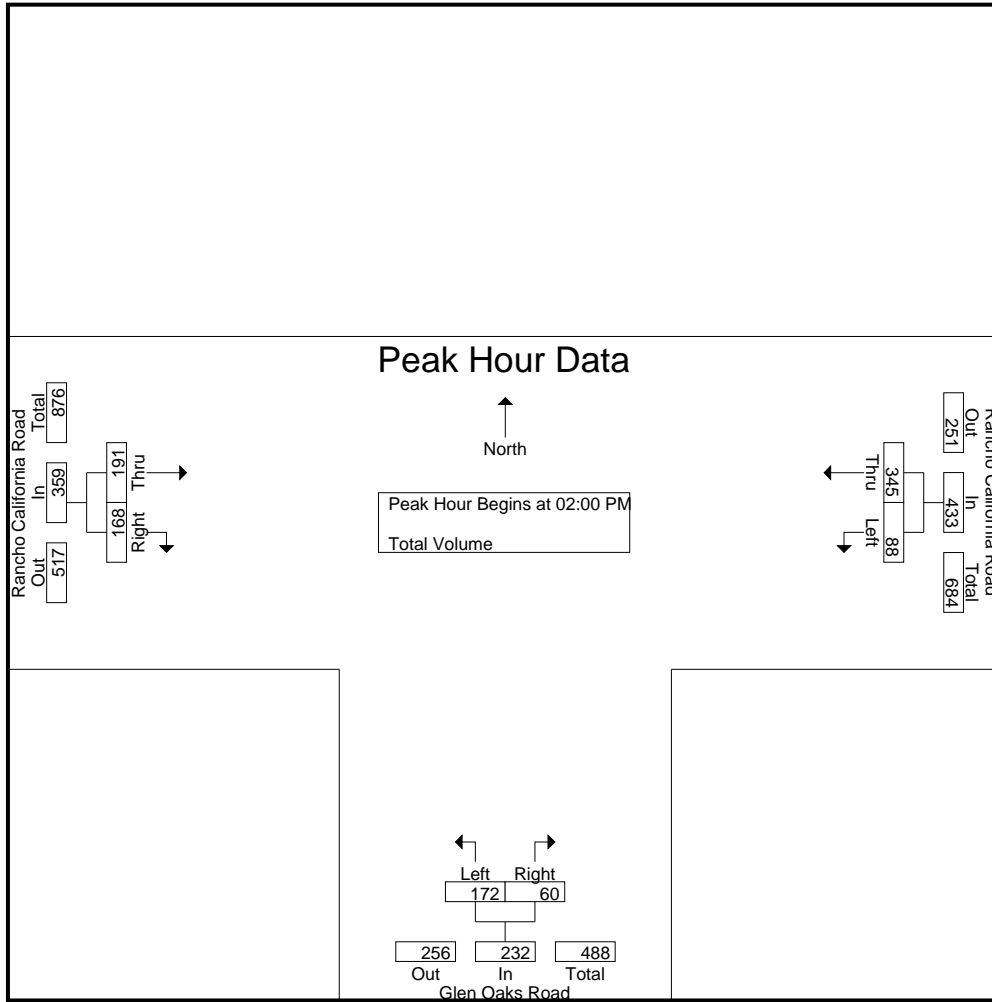
Groups Printed- Total Volume

Start Time	Rancho California Road Westbound			Glen Oaks Road Northbound			Rancho California Road Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
02:00 PM	21	86	107	57	17	74	40	37	77	258
02:15 PM	21	74	95	31	18	49	40	44	84	228
02:30 PM	26	86	112	42	12	54	57	41	98	264
02:45 PM	20	99	119	42	13	55	54	46	100	274
Total	88	345	433	172	60	232	191	168	359	1024
03:00 PM	13	64	77	37	13	50	54	47	101	228
03:15 PM	20	63	83	41	14	55	42	38	80	218
03:30 PM	16	44	60	41	8	49	43	56	99	208
03:45 PM	12	46	58	35	12	47	45	45	90	195
Total	61	217	278	154	47	201	184	186	370	849
04:00 PM	20	49	69	42	11	53	51	41	92	214
04:15 PM	14	59	73	41	16	57	59	50	109	239
04:30 PM	12	47	59	35	21	56	63	38	101	216
04:45 PM	22	39	61	51	11	62	79	50	129	252
Total	68	194	262	169	59	228	252	179	431	921
Grand Total	217	756	973	495	166	661	627	533	1160	2794
Apprch %	22.3	77.7		74.9	25.1		54.1	45.9		
Total %	7.8	27.1	34.8	17.7	5.9	23.7	22.4	19.1	41.5	

Start Time	Rancho California Road Westbound			Glen Oaks Road Northbound			Rancho California Road Eastbound			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 02:00 PM										
02:00 PM	21	86	107	<b>57</b>	17	<b>74</b>	40	37	77	258
02:15 PM	21	74	95	31	<b>18</b>	49	40	44	84	228
02:30 PM	<b>26</b>	86	112	42	12	54	<b>57</b>	41	98	264
02:45 PM	20	<b>99</b>	<b>119</b>	42	13	55	54	<b>46</b>	<b>100</b>	<b>274</b>
Total Volume	88	345	433	172	60	232	191	168	359	1024
% App. Total	20.3	79.7		74.1	25.9		53.2	46.8		
PHF	.846	.871	.910	.754	.833	.784	.838	.913	.898	.934

County of Riverside  
 N/S: Glen Oaks Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 01\_CRV\_Glen\_RC SAT  
 Site Code : 10522640  
 Start Date : 7/9/2022  
 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			02:00 PM			04:00 PM		
+0 mins.	21	86	107	<b>57</b>	17	<b>74</b>	51	41	92
+15 mins.	21	74	95	31	<b>18</b>	49	59	<b>50</b>	109
+30 mins.	<b>26</b>	86	112	42	12	54	63	38	101
+45 mins.	20	<b>99</b>	<b>119</b>	42	13	55	<b>79</b>	50	<b>129</b>
Total Volume	88	345	433	172	60	232	252	179	431
% App. Total	20.3	79.7		74.1	25.9		58.5	41.5	
PHF	.846	.871	.910	.754	.833	.784	.797	.895	.835

County of Riverside  
 N/S: Anza Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 02\_CRV\_Anza\_RC AM  
 Site Code : 10522640  
 Start Date : 7/7/2022  
 Page No : 1

Groups Printed- Total Volume

Start Time	Anza Road Southbound				Rancho California Road Westbound				Anza Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	1	0	1	2	11	44	3	58	6	0	8	14	1	44	9	54	128
07:15 AM	2	2	2	6	17	51	1	69	10	2	15	27	2	31	13	46	148
07:30 AM	1	1	3	5	17	77	1	95	13	2	14	29	2	34	13	49	178
07:45 AM	2	2	4	8	22	82	1	105	14	0	8	22	3	41	12	56	191
Total	6	5	10	21	67	254	6	327	43	4	45	92	8	150	47	205	645
08:00 AM	3	0	5	8	17	61	1	79	15	3	10	28	1	36	9	46	161
08:15 AM	0	1	1	2	25	90	1	116	23	1	10	34	3	44	23	70	222
08:30 AM	2	1	2	5	27	85	1	113	18	0	14	32	1	59	20	80	230
08:45 AM	0	6	4	10	24	71	0	95	13	4	17	34	3	38	16	57	196
Total	5	8	12	25	93	307	3	403	69	8	51	128	8	177	68	253	809
Grand Total	11	13	22	46	160	561	9	730	112	12	96	220	16	327	115	458	1454
Apprch %	23.9	28.3	47.8		21.9	76.8	1.2		50.9	5.5	43.6		3.5	71.4	25.1		
Total %	0.8	0.9	1.5	3.2	11	38.6	0.6	50.2	7.7	0.8	6.6	15.1	1.1	22.5	7.9	31.5	

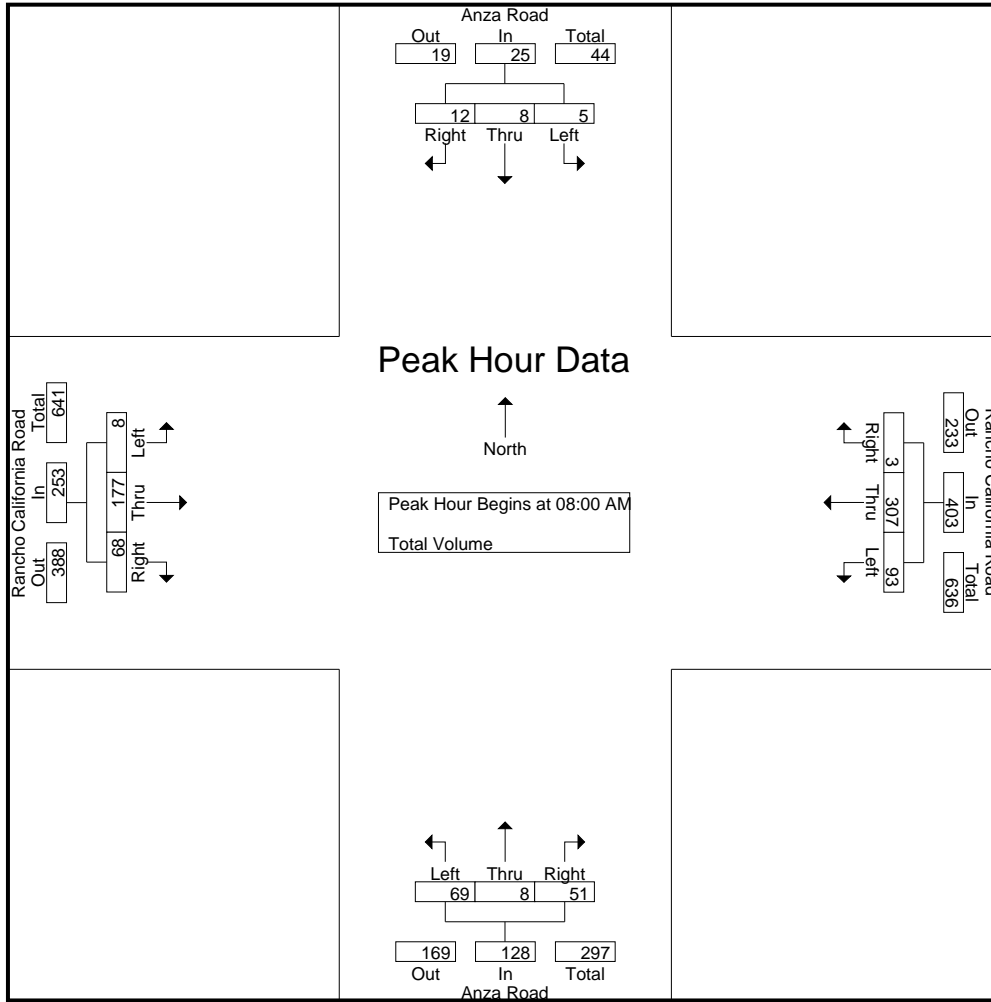
Start Time	Anza Road Southbound				Rancho California Road Westbound				Anza Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
08:00 AM	<b>3</b>	0	<b>5</b>	8	17	<b>61</b>	<b>1</b>	79	15	3	10	28	1	36	9	46	161
08:15 AM	0	1	1	2	25	<b>90</b>	1	<b>116</b>	<b>23</b>	1	10	<b>34</b>	<b>3</b>	44	<b>23</b>	70	222
08:30 AM	2	1	2	5	<b>27</b>	85	1	113	18	0	14	32	1	<b>59</b>	20	<b>80</b>	<b>230</b>
08:45 AM	0	<b>6</b>	4	<b>10</b>	24	71	0	95	13	<b>4</b>	<b>17</b>	34	3	38	16	57	196
Total Volume	5	8	12	25	93	307	3	403	69	8	51	128	8	177	68	253	809
% App. Total	20	32	48		23.1	76.2	0.7		53.9	6.2	39.8		3.2	70	26.9		
PHF	.417	.333	.600	.625	.861	.853	.750	.869	.750	.500	.750	.941	.667	.750	.739	.791	.879

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 08:00 AM

County of Riverside  
 N/S: Anza Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 02\_CRV\_Anza\_RC AM  
 Site Code : 10522640  
 Start Date : 7/7/2022  
 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:

	07:15 AM				07:45 AM				08:00 AM				08:00 AM			
+0 mins.	2	2	2	6	22	82	1	105	15	3	10	28	1	36	9	46
+15 mins.	1	1	3	5	17	61	1	79	23	1	10	34	3	44	23	70
+30 mins.	2	2	4	8	25	90	1	116	18	0	14	32	1	59	20	80
+45 mins.	3	0	5	8	27	85	1	113	13	4	17	34	3	38	16	57
Total Volume	8	5	14	27	91	318	4	413	69	8	51	128	8	177	68	253
% App. Total	29.6	18.5	51.9		22	77	1		53.9	6.2	39.8		3.2	70	26.9	
PHF	.667	.625	.700	.844	.843	.883	1.000	.890	.750	.500	.750	.941	.667	.750	.739	.791

County of Riverside  
 N/S: Anza Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 02\_CRV\_Anza\_RC PM  
 Site Code : 10522640  
 Start Date : 7/7/2022  
 Page No : 1

Groups Printed- Total Volume

Start Time	Anza Road Southbound				Rancho California Road Westbound				Anza Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	4	6	10	20	29	90	2	121	13	3	48	64	6	98	23	127	332
04:15 PM	1	1	4	6	14	99	2	115	24	8	46	78	4	88	15	107	306
04:30 PM	2	1	9	12	23	85	4	112	17	3	41	61	9	94	21	124	309
04:45 PM	1	3	5	9	26	84	0	110	21	4	38	63	10	88	14	112	294
Total	8	11	28	47	92	358	8	458	75	18	173	266	29	368	73	470	1241
05:00 PM	2	0	5	7	38	66	2	106	25	6	38	69	11	91	12	114	296
05:15 PM	7	7	2	16	22	82	2	106	17	6	46	69	10	86	4	100	291
05:30 PM	4	4	5	13	16	73	5	94	23	5	50	78	6	74	7	87	272
05:45 PM	2	1	3	6	15	68	4	87	24	3	55	82	11	60	6	77	252
Total	15	12	15	42	91	289	13	393	89	20	189	298	38	311	29	378	1111
Grand Total	23	23	43	89	183	647	21	851	164	38	362	564	67	679	102	848	2352
Apprch %	25.8	25.8	48.3		21.5	76	2.5		29.1	6.7	64.2		7.9	80.1	12		
Total %	1	1	1.8	3.8	7.8	27.5	0.9	36.2	7	1.6	15.4	24	2.8	28.9	4.3	36.1	

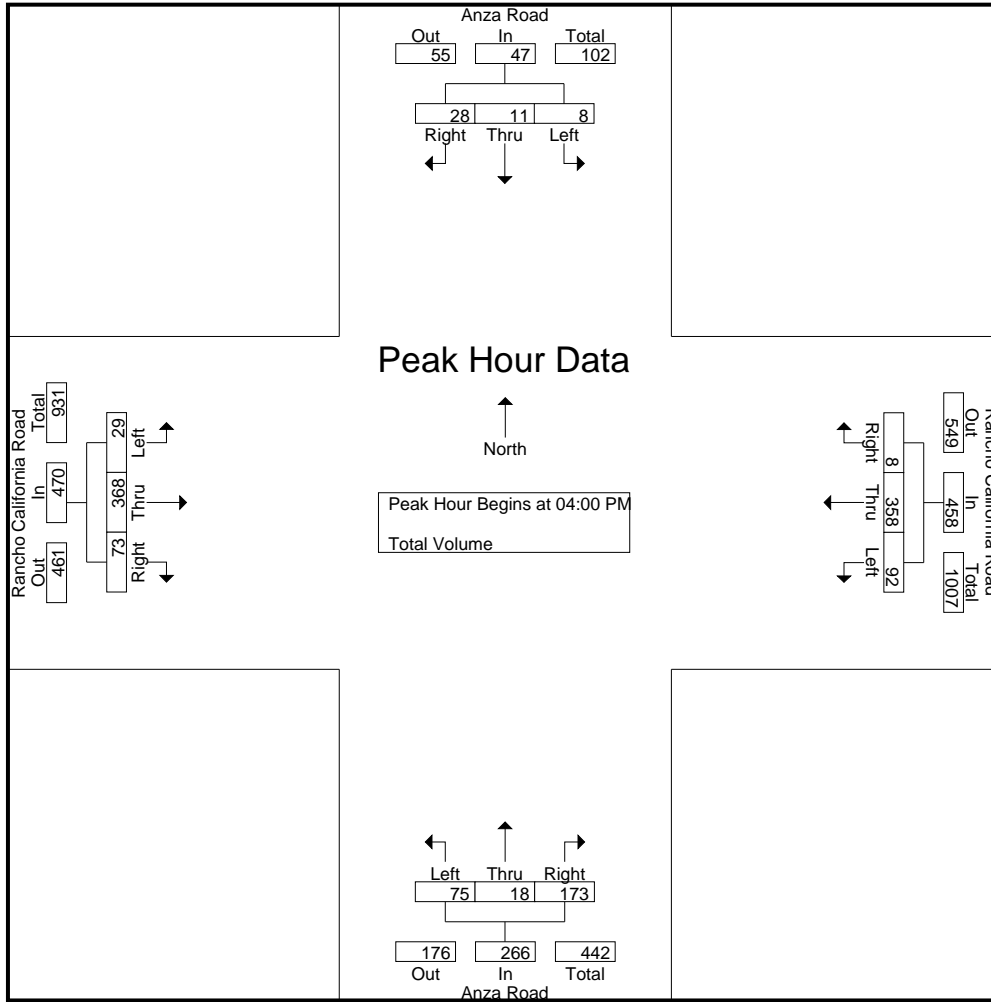
Start Time	Anza Road Southbound				Rancho California Road Westbound				Anza Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	<b>4</b>	<b>6</b>	<b>10</b>	<b>20</b>	<b>29</b>	<b>90</b>	<b>2</b>	<b>121</b>	<b>13</b>	<b>3</b>	<b>48</b>	<b>64</b>	<b>6</b>	<b>98</b>	<b>23</b>	<b>127</b>	<b>332</b>
04:15 PM	1	1	4	6	14	99	2	115	24	8	46	78	4	88	15	107	306
04:30 PM	2	1	9	12	23	85	4	112	17	3	41	61	9	94	21	124	309
04:45 PM	1	3	5	9	26	84	0	110	21	4	38	63	<b>10</b>	88	14	112	294
Total Volume	8	11	28	47	92	358	8	458	75	18	173	266	29	368	73	470	1241
% App. Total	17	23.4	59.6		20.1	78.2	1.7		28.2	6.8	65		6.2	78.3	15.5		
PHF	.500	.458	.700	.588	.793	.904	.500	.946	.781	.563	.901	.853	.725	.939	.793	.925	.934

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



County of Riverside  
 N/S: Anza Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 02\_CRV\_Anza\_RC PM  
 Site Code : 10522640  
 Start Date : 7/7/2022  
 Page No : 2



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.	4	6	10	20	29	90	2	121	25	6	38	69	6	98	23	127
+15 mins.	1	1	4	6	14	99	2	115	17	6	46	69	4	88	15	107
+30 mins.	2	1	9	12	23	85	4	112	23	5	50	78	9	94	21	124
+45 mins.	1	3	5	9	26	84	0	110	24	3	55	82	10	88	14	112
Total Volume	8	11	28	47	92	358	8	458	89	20	189	298	29	368	73	470
% App. Total	17	23.4	59.6		20.1	78.2	1.7		29.9	6.7	63.4		6.2	78.3	15.5	
PHF	.500	.458	.700	.588	.793	.904	.500	.946	.890	.833	.859	.909	.725	.939	.793	.925

County of Riverside  
 N/S: Anza Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 02\_CRV\_Anza\_RC SAT  
 Site Code : 10522640  
 Start Date : 7/9/2022  
 Page No : 1

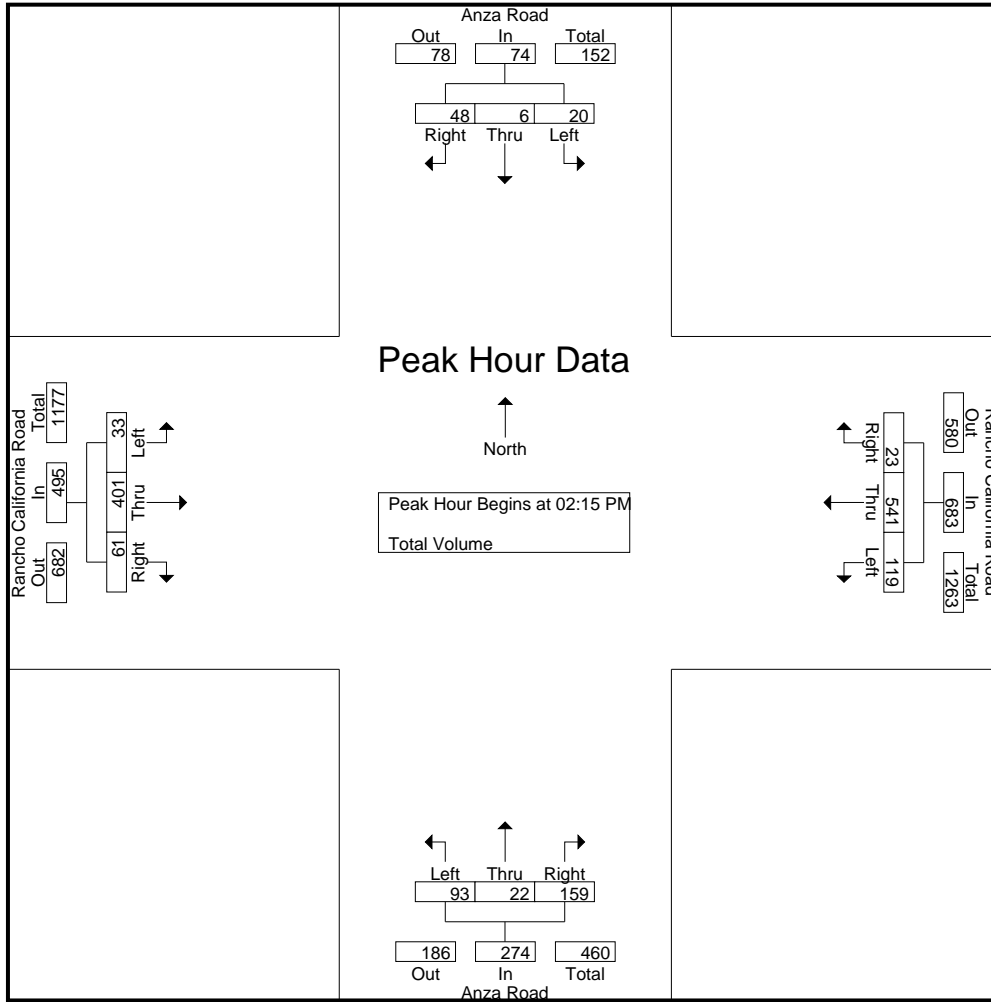
Groups Printed- Total Volume

Start Time	Anza Road Southbound				Rancho California Road Westbound				Anza Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
02:00 PM	0	3	6	9	32	133	8	173	17	7	38	62	9	101	14	124	368
02:15 PM	6	1	10	17	33	114	6	153	29	9	55	93	8	112	18	138	401
02:30 PM	6	1	11	18	38	121	6	165	17	3	43	63	12	84	20	116	362
02:45 PM	6	2	12	20	24	146	7	177	20	6	32	58	5	101	11	117	372
Total	18	7	39	64	127	514	27	668	83	25	168	276	34	398	63	495	1503
03:00 PM	2	2	15	19	24	160	4	188	27	4	29	60	8	104	12	124	391
03:15 PM	4	3	6	13	24	117	3	144	28	7	28	63	9	106	9	124	344
03:30 PM	2	3	5	10	36	123	4	163	23	3	27	53	13	102	11	126	352
03:45 PM	3	3	11	17	27	129	3	159	29	5	30	64	12	83	6	101	341
Total	11	11	37	59	111	529	14	654	107	19	114	240	42	395	38	475	1428
04:00 PM	1	3	4	8	32	136	2	170	27	4	43	74	10	99	11	120	372
04:15 PM	9	4	19	32	25	140	7	172	25	4	38	67	14	115	10	139	410
04:30 PM	5	7	10	22	22	130	12	164	25	3	36	64	7	75	15	97	347
04:45 PM	5	0	17	22	24	141	6	171	27	12	43	82	19	66	10	95	370
Total	20	14	50	84	103	547	27	677	104	23	160	287	50	355	46	451	1499
Grand Total	49	32	126	207	341	1590	68	1999	294	67	442	803	126	1148	147	1421	4430
Apprch %	23.7	15.5	60.9		17.1	79.5	3.4		36.6	8.3	55		8.9	80.8	10.3		
Total %	1.1	0.7	2.8	4.7	7.7	35.9	1.5	45.1	6.6	1.5	10	18.1	2.8	25.9	3.3	32.1	

Start Time	Anza Road Southbound				Rancho California Road Westbound				Anza Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:15 PM																	
02:15 PM	6	1	10	17	33	114	6	153	29	9	55	93	8	112	18	138	401
02:30 PM	6	1	11	18	38	121	6	165	17	3	43	63	12	84	20	116	362
02:45 PM	6	2	12	20	24	146	7	177	20	6	32	58	5	101	11	117	372
03:00 PM	2	2	15	19	24	160	4	188	27	4	29	60	8	104	12	124	391
Total Volume	20	6	48	74	119	541	23	683	93	22	159	274	33	401	61	495	1526
% App. Total	27	8.1	64.9		17.4	79.2	3.4		33.9	8	58		6.7	81	12.3		
PHF	.833	.750	.800	.925	.783	.845	.821	.908	.802	.611	.723	.737	.688	.895	.763	.897	.951

County of Riverside  
 N/S: Anza Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 02\_CRV\_Anza\_RC SAT  
 Site Code : 10522640  
 Start Date : 7/9/2022  
 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:

	04:00 PM				02:15 PM				04:00 PM				02:00 PM			
+0 mins.	1	3	4	8	33	114	6	153	27	4	43	74	9	101	14	124
+15 mins.	9	4	19	32	38	121	6	165	25	4	38	67	8	112	18	138
+30 mins.	5	7	10	22	24	146	7	177	25	3	36	64	12	84	20	116
+45 mins.	5	0	17	22	24	160	4	188	27	12	43	82	5	101	11	117
Total Volume	20	14	50	84	119	541	23	683	104	23	160	287	34	398	63	495
% App. Total	23.8	16.7	59.5		17.4	79.2	3.4		36.2	8	55.7		6.9	80.4	12.7	
PHF	.556	.500	.658	.656	.783	.845	.821	.908	.963	.479	.930	.875	.708	.888	.788	.897

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 : 1

Groups Printed- Total Volume

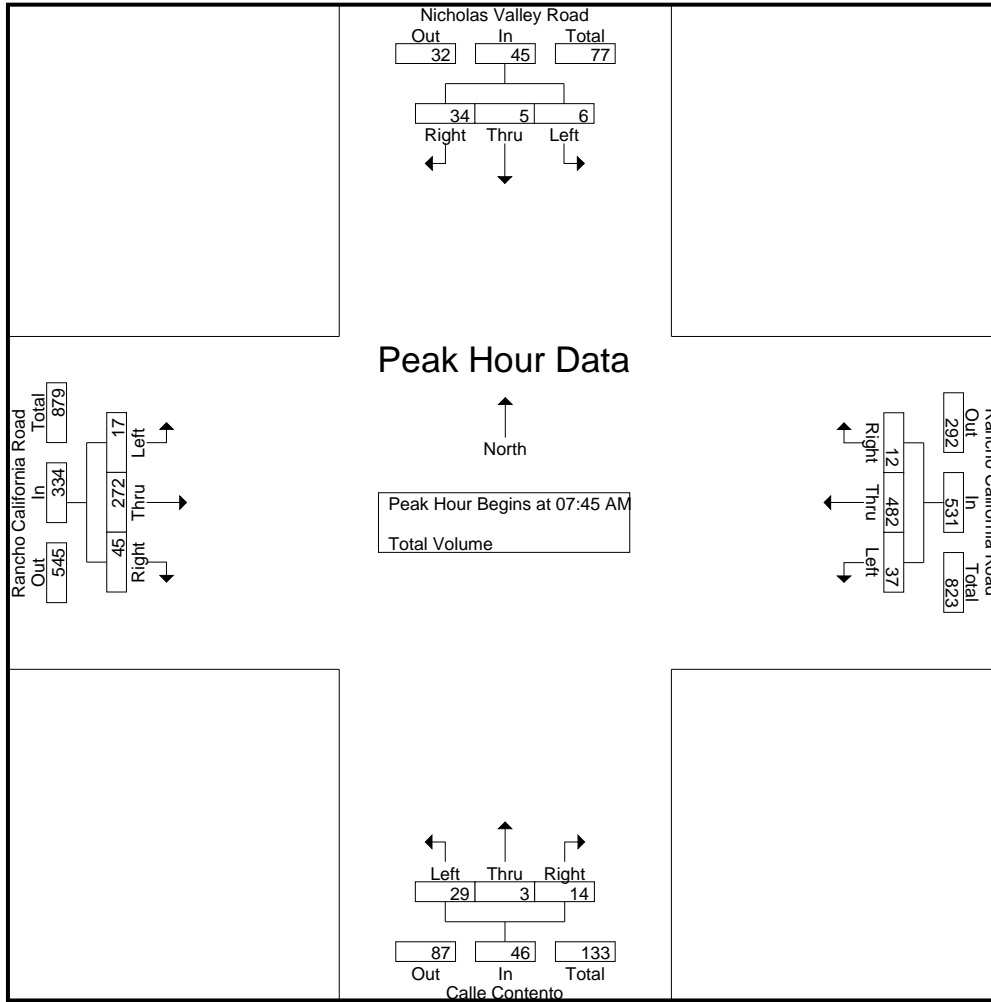
Start Time	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	2	1	7	10	2	80	3	85	5	1	4	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	

Start Time	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:45 AM	1	0	8	9	9	<b>126</b>	1	136	6	<b>1</b>	2	9	4	<b>83</b>	<b>15</b>	<b>102</b>	<b>256</b>
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	<b>14</b>	<b>18</b>	<b>12</b>	120	<b>6</b>	<b>138</b>	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

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

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	<b>126</b>	1	136	5	0	4	9	4	78	8	90
+15 mins.	1	1	6	8	9	113	2	124	<b>11</b>	1	4	<b>16</b>	<b>5</b>	78	10	93
+30 mins.	2	2	<b>14</b>	<b>18</b>	7	123	3	133	7	1	4	12	4	<b>83</b>	2	89
+45 mins.	1	1	8	10	<b>12</b>	120	<b>6</b>	<b>138</b>	7	<b>3</b>	4	14	4	83	<b>15</b>	<b>102</b>
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

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  
 Page No : 1

Groups Printed- Total Volume

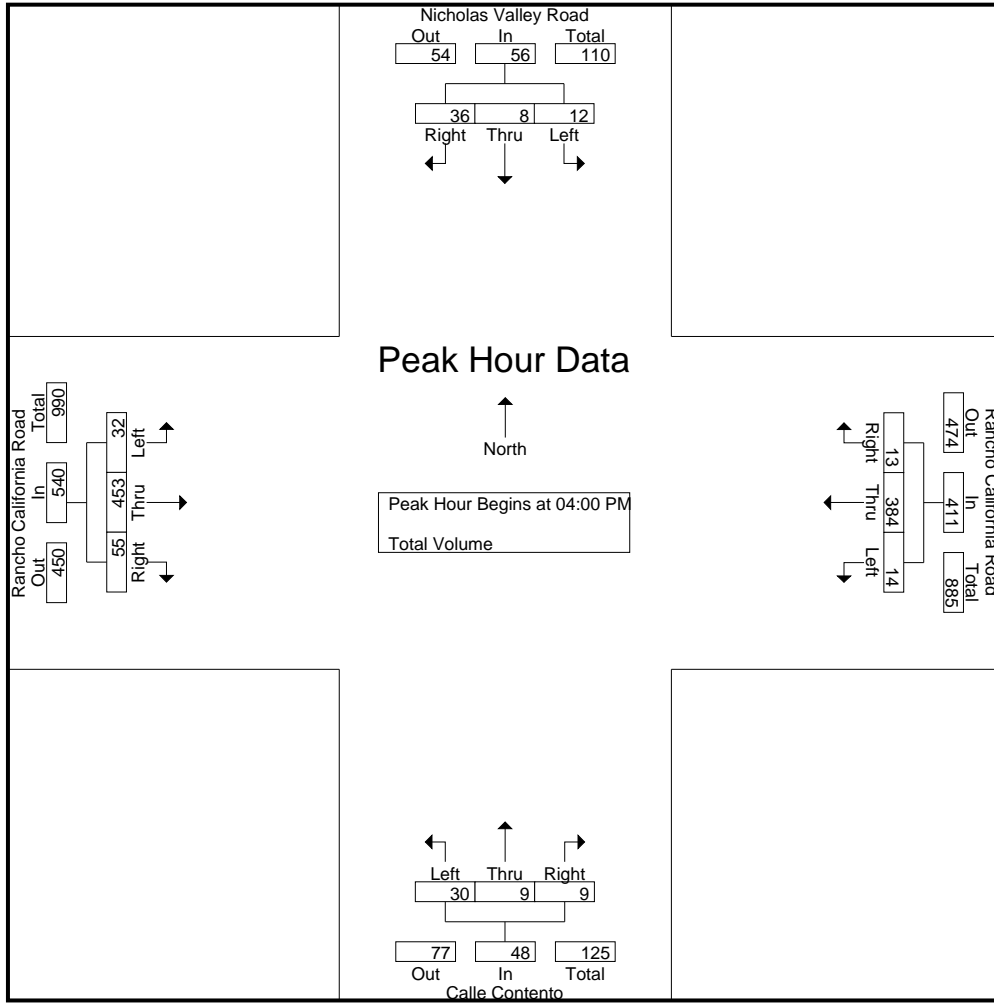
Start Time	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	3	1	11	15	7	115	3	125	3	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	

Start Time	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. 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 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

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

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  
 Page No : 2



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

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

File Name : 02\_CRV\_CC\_Rancho SAT  
 Site Code : 10522320  
 Start Date : 4/9/2022  
 Page No : 1

Groups Printed- Total Volume

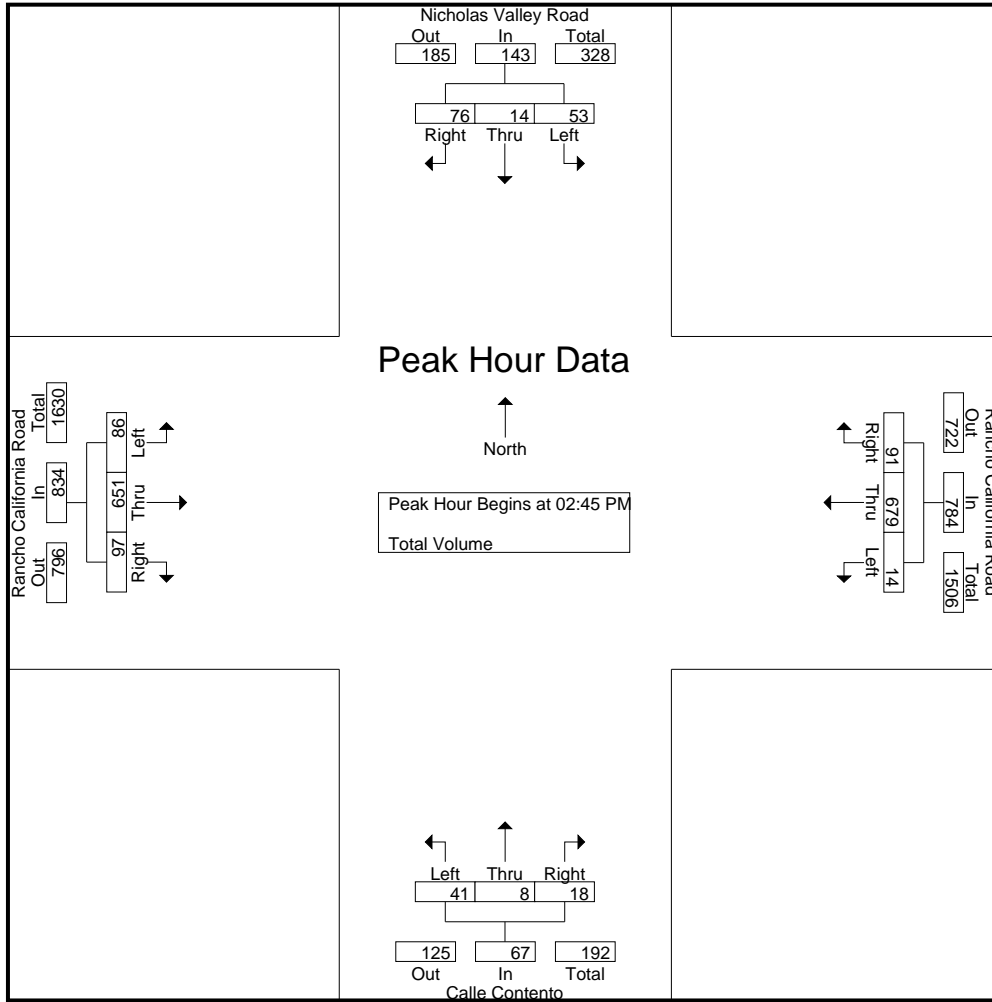
Start Time	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
02:00 PM	8	2	9	19	3	138	13	154	12	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	

Start Time	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. 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	<b>26</b>	198	10	2	3	15	21	<b>182</b>	18	<b>221</b>	459
03:00 PM	12	2	22	36	<b>5</b>	<b>187</b>	21	<b>213</b>	<b>14</b>	1	<b>5</b>	<b>20</b>	19	161	<b>28</b>	208	<b>477</b>
03:15 PM	<b>16</b>	<b>7</b>	17	40	4	165	24	193	11	<b>3</b>	5	19	<b>25</b>	150	23	198	450
03:30 PM	12	4	<b>26</b>	<b>42</b>	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



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

File Name : 02\_CRV\_CC\_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:

	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

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

File Name : 03\_CRV\_Nich\_RC AM  
 Site Code : 10522640  
 Start Date : 7/7/2022  
 Page No : 1

Groups Printed- Total Volume

Start Time	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	1	1	6	8	2	47	1	50	4	1	0	5	5	52	13	70	133
07:15 AM	3	0	10	13	0	52	3	55	7	0	2	9	3	40	5	48	125
07:30 AM	0	1	9	10	1	93	1	95	8	0	2	10	6	52	8	66	181
07:45 AM	1	5	11	17	2	94	4	100	7	1	0	8	7	53	6	66	191
Total	5	7	36	48	5	286	9	300	26	2	4	32	21	197	32	250	630
08:00 AM	0	1	12	13	2	80	0	82	9	1	2	12	3	54	7	64	171
08:15 AM	0	3	2	5	3	101	2	106	6	0	3	9	6	69	9	84	204
08:30 AM	1	0	9	10	3	96	5	104	5	0	0	5	3	77	8	88	207
08:45 AM	1	1	14	16	4	83	2	89	11	1	3	15	9	54	7	70	190
Total	2	5	37	44	12	360	9	381	31	2	8	41	21	254	31	306	772
Grand Total	7	12	73	92	17	646	18	681	57	4	12	73	42	451	63	556	1402
Apprch %	7.6	13	79.3		2.5	94.9	2.6		78.1	5.5	16.4		7.6	81.1	11.3		
Total %	0.5	0.9	5.2	6.6	1.2	46.1	1.3	48.6	4.1	0.3	0.9	5.2	3	32.2	4.5	39.7	

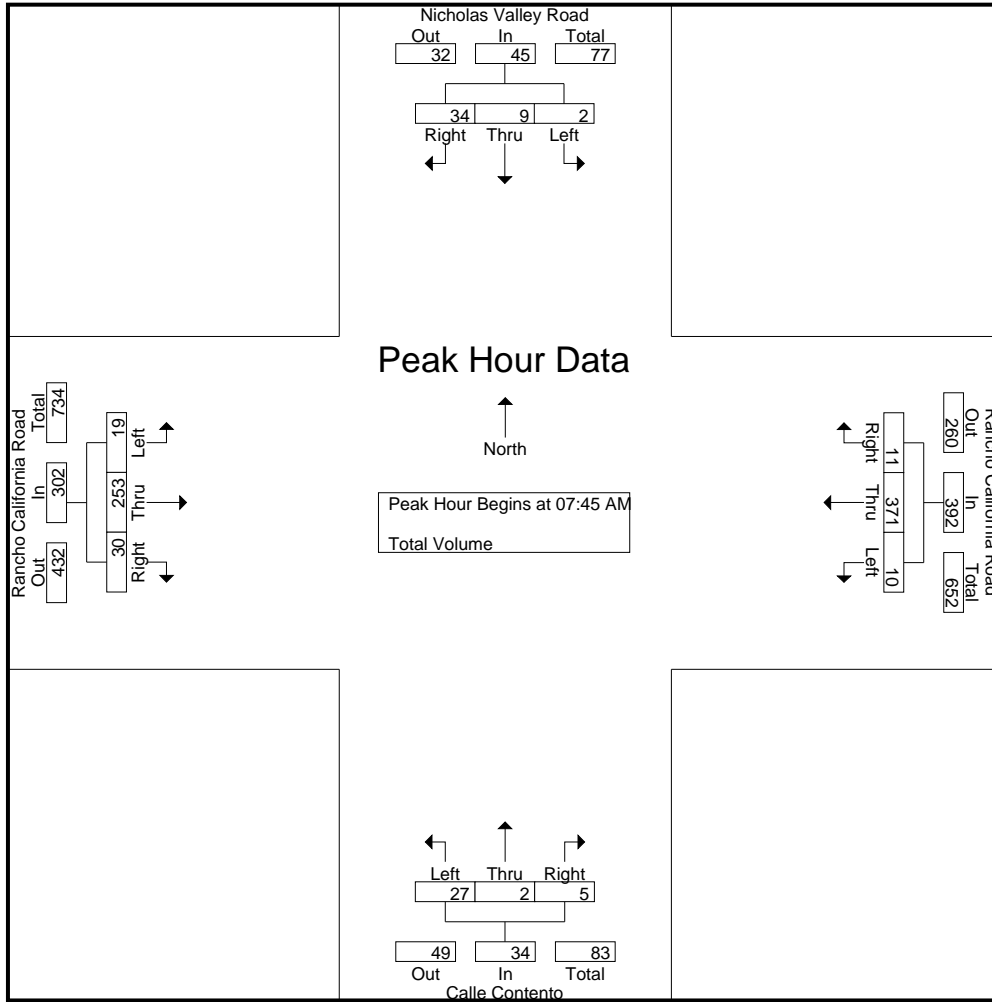
Start Time	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:45 AM	1	5	11	17	2	94	4	100	7	1	0	8	7	53	6	66	191
08:00 AM	0	1	12	13	2	80	0	82	9	1	2	12	3	54	7	64	171
08:15 AM	0	3	2	5	3	101	2	106	6	0	3	9	6	69	9	84	204
08:30 AM	1	0	9	10	3	96	5	104	5	0	0	5	3	77	8	88	207
Total Volume	2	9	34	45	10	371	11	392	27	2	5	34	19	253	30	302	773
% App. Total	4.4	20	75.6		2.6	94.6	2.8		79.4	5.9	14.7		6.3	83.8	9.9		
PHF	.500	.450	.708	.662	.833	.918	.550	.925	.750	.500	.417	.708	.679	.821	.833	.858	.934

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

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

File Name : 03\_CRV\_Nich\_RC AM  
 Site Code : 10522640  
 Start Date : 7/7/2022  
 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:

	07:15 AM				07:45 AM				08:00 AM				08:00 AM			
+0 mins.	3	0	10	13	2	94	4	100	9	1	2	12	3	54	7	64
+15 mins.	0	1	9	10	2	80	0	82	6	0	3	9	6	69	9	84
+30 mins.	1	5	11	17	3	101	2	106	5	0	0	5	3	77	8	88
+45 mins.	0	1	12	13	3	96	5	104	11	1	3	15	9	54	7	70
Total Volume	4	7	42	53	10	371	11	392	31	2	8	41	21	254	31	306
% App. Total	7.5	13.2	79.2		2.6	94.6	2.8		75.6	4.9	19.5		6.9	83	10.1	
PHF	.333	.350	.875	.779	.833	.918	.550	.925	.705	.500	.667	.683	.583	.825	.861	.869

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

File Name : 03\_CRV\_Nich\_RC PM  
 Site Code : 10522640  
 Start Date : 7/7/2022  
 Page No : 1

Groups Printed- Total Volume

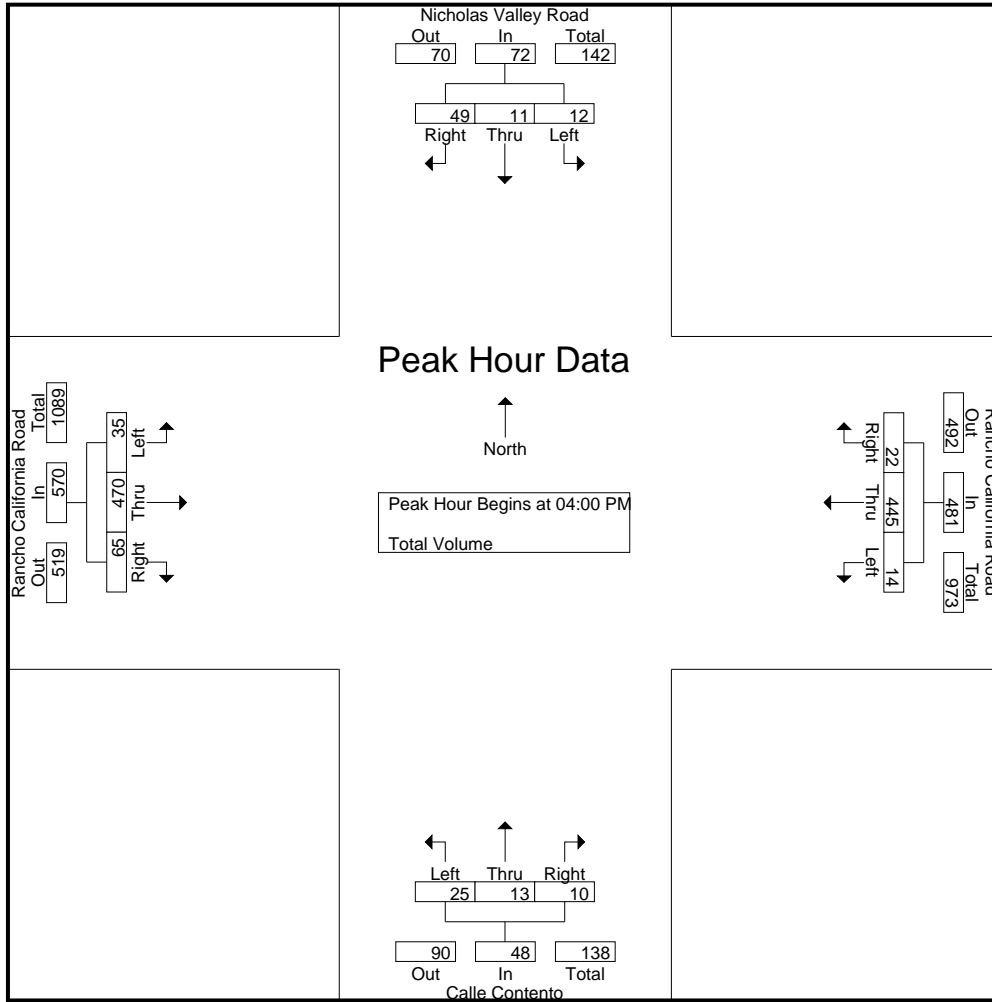
Start Time	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	5	4	12	21	3	107	3	113	9	5	4	18	13	125	13	151	303
04:15 PM	1	0	13	14	4	123	6	133	8	4	2	14	10	102	24	136	297
04:30 PM	5	3	12	20	4	107	8	119	5	3	2	10	6	123	13	142	291
04:45 PM	1	4	12	17	3	108	5	116	3	1	2	6	6	120	15	141	280
Total	12	11	49	72	14	445	22	481	25	13	10	48	35	470	65	570	1171
05:00 PM	10	1	13	24	6	100	6	112	6	1	4	11	17	100	18	135	282
05:15 PM	1	1	9	11	4	90	3	97	11	2	5	18	9	104	12	125	251
05:30 PM	4	1	12	17	2	97	2	101	7	0	1	8	15	91	15	121	247
05:45 PM	2	1	7	10	0	86	7	93	7	1	1	9	15	106	8	129	241
Total	17	4	41	62	12	373	18	403	31	4	11	46	56	401	53	510	1021
Grand Total	29	15	90	134	26	818	40	884	56	17	21	94	91	871	118	1080	2192
Apprch %	21.6	11.2	67.2		2.9	92.5	4.5		59.6	18.1	22.3		8.4	80.6	10.9		
Total %	1.3	0.7	4.1	6.1	1.2	37.3	1.8	40.3	2.6	0.8	1	4.3	4.2	39.7	5.4	49.3	

Start Time	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	5	4	12	21	3	107	3	113	9	5	4	18	13	125	13	151	303
04:15 PM	1	0	13	14	4	123	6	133	8	4	2	14	10	102	24	136	297
04:30 PM	5	3	12	20	4	107	8	119	5	3	2	10	6	123	13	142	291
04:45 PM	1	4	12	17	3	108	5	116	3	1	2	6	6	120	15	141	280
Total Volume	12	11	49	72	14	445	22	481	25	13	10	48	35	470	65	570	1171
% App. Total	16.7	15.3	68.1		2.9	92.5	4.6		52.1	27.1	20.8		6.1	82.5	11.4		
PHF	.600	.688	.942	.857	.875	.904	.688	.904	.694	.650	.625	.667	.673	.940	.677	.944	.966

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

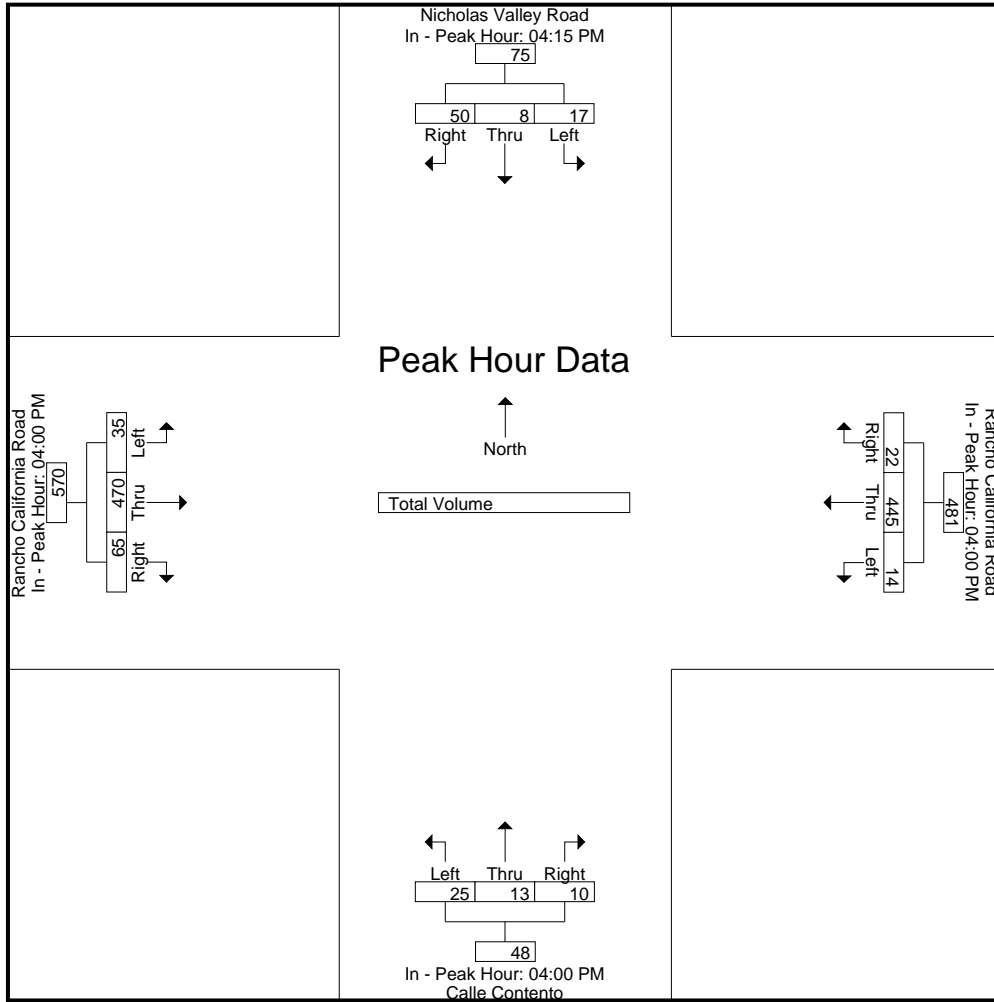
County of Riverside  
 N/S: Nicholas Valley Road/Calle Contento  
 E/W: Rancho California Road  
 Weather: Clear

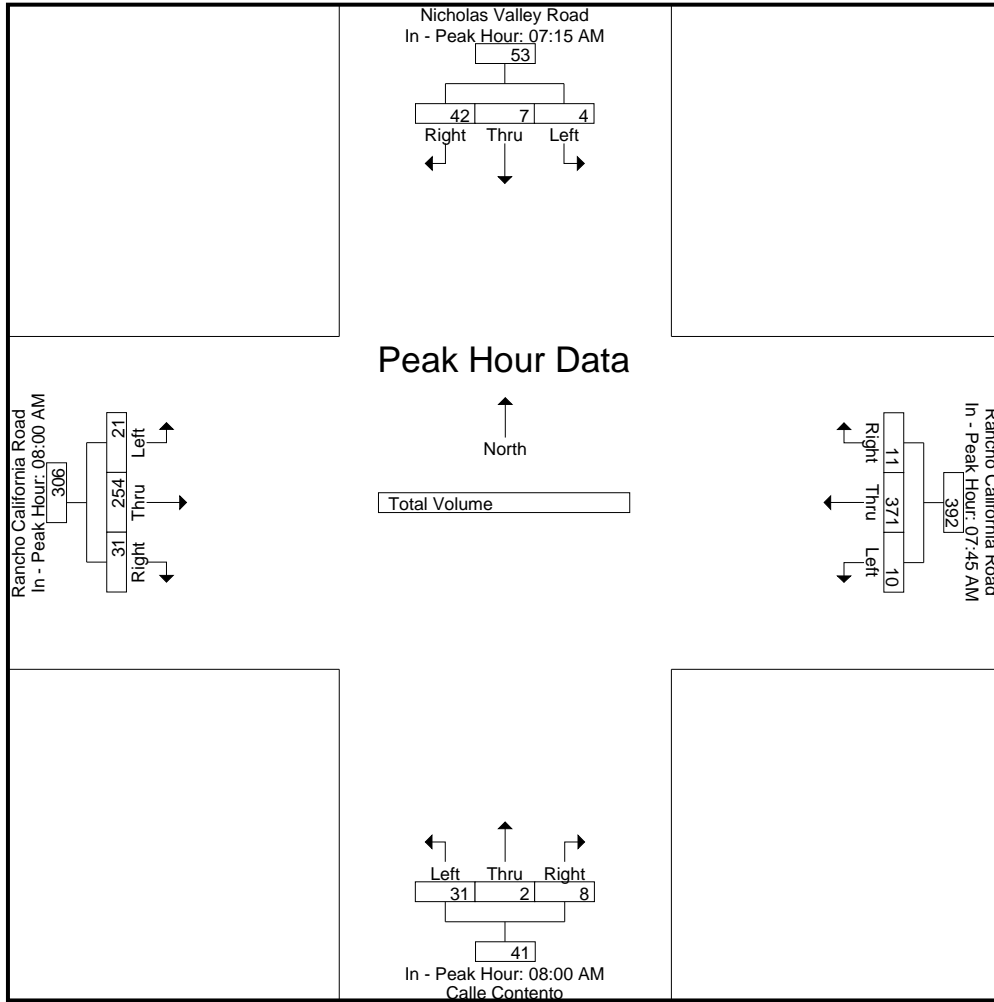
File Name : 03\_CRV\_Nich\_RC PM  
 Site Code : 10522640  
 Start Date : 7/7/2022  
 Page No : 2



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

	04:15 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	1	0	13	14	3	107	3	113	9	5	4	18	13	125	13	151
+15 mins.	5	3	12	20	4	123	6	133	8	4	2	14	10	102	24	136
+30 mins.	1	4	12	17	4	107	8	119	5	3	2	10	6	123	13	142
+45 mins.	10	1	13	24	3	108	5	116	3	1	2	6	6	120	15	141
Total Volume	17	8	50	75	14	445	22	481	25	13	10	48	35	470	65	570
% App. Total	22.7	10.7	66.7		2.9	92.5	4.6		52.1	27.1	20.8		6.1	82.5	11.4	
PHF	.425	.500	.962	.781	.875	.904	.688	.904	.694	.650	.625	.667	.673	.940	.677	.944





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

File Name : 03\_CRV\_Nich\_RC SAT  
 Site Code : 10522640  
 Start Date : 7/9/2022  
 Page No : 1

Groups Printed- Total Volume

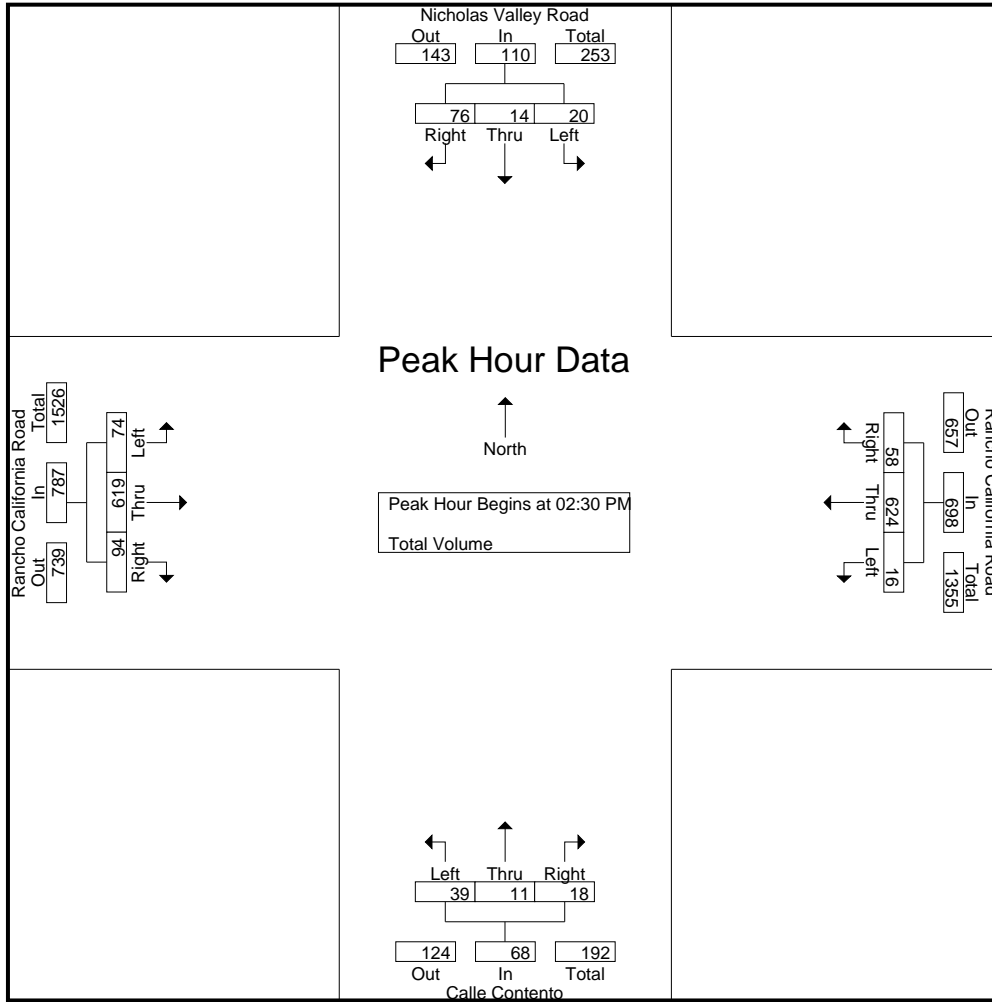
Start Time	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
02:00 PM	6	4	19	29	4	134	15	153	9	1	4	14	20	143	19	182	378
02:15 PM	13	2	17	32	1	131	16	148	9	3	1	13	25	147	27	199	392
02:30 PM	8	6	18	32	3	129	16	148	5	1	2	8	22	163	23	208	396
02:45 PM	7	4	22	33	3	153	20	176	6	4	4	14	19	162	25	206	429
Total	34	16	76	126	11	547	67	625	29	9	11	49	86	615	94	795	1595
03:00 PM	3	2	16	21	5	194	9	208	11	3	6	20	14	148	26	188	437
03:15 PM	2	2	20	24	5	148	13	166	17	3	6	26	19	146	20	185	401
03:30 PM	10	5	14	29	4	150	8	162	9	3	4	16	15	146	14	175	382
03:45 PM	14	2	14	30	1	163	16	180	13	4	7	24	16	115	18	149	383
Total	29	11	64	104	15	655	46	716	50	13	23	86	64	555	78	697	1603
04:00 PM	7	10	24	41	2	160	13	175	10	1	1	12	23	125	17	165	393
04:15 PM	16	6	28	50	3	168	16	187	6	2	3	11	13	138	10	161	409
04:30 PM	5	5	28	38	7	135	9	151	10	3	0	13	14	130	23	167	369
04:45 PM	3	3	26	32	1	181	13	195	5	2	2	9	10	105	16	131	367
Total	31	24	106	161	13	644	51	708	31	8	6	45	60	498	66	624	1538
Grand Total	94	51	246	391	39	1846	164	2049	110	30	40	180	210	1668	238	2116	4736
Apprch %	24	13	62.9		1.9	90.1	8		61.1	16.7	22.2		9.9	78.8	11.2		
Total %	2	1.1	5.2	8.3	0.8	39	3.5	43.3	2.3	0.6	0.8	3.8	4.4	35.2	5	44.7	

Start Time	Nicholas Valley Road Southbound				Rancho California Road Westbound				Calle Contento Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:30 PM																	
02:30 PM	8	6	18	32	3	129	16	148	5	1	2	8	22	163	23	208	396
02:45 PM	7	4	22	33	3	153	20	176	6	4	4	14	19	162	25	206	429
03:00 PM	3	2	16	21	5	194	9	208	11	3	6	20	14	148	26	188	437
03:15 PM	2	2	20	24	5	148	13	166	17	3	6	26	19	146	20	185	401
Total Volume	20	14	76	110	16	624	58	698	39	11	18	68	74	619	94	787	1663
% App. Total	18.2	12.7	69.1		2.3	89.4	8.3		57.4	16.2	26.5		9.4	78.7	11.9		
PHF	.625	.583	.864	.833	.800	.804	.725	.839	.574	.688	.750	.654	.841	.949	.904	.946	.951



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

File Name : 03\_CRV\_Nich\_RC SAT  
 Site Code : 10522640  
 Start Date : 7/9/2022  
 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:

	04:00 PM				03:00 PM				03:00 PM				02:15 PM			
+0 mins.	7	10	24	41	5	194	9	208	11	3	6	20	25	147	27	199
+15 mins.	16	6	28	50	5	148	13	166	17	3	6	26	22	163	23	208
+30 mins.	5	5	28	38	4	150	8	162	9	3	4	16	19	162	25	206
+45 mins.	3	3	26	32	1	163	16	180	13	4	7	24	14	148	26	188
Total Volume	31	24	106	161	15	655	46	716	50	13	23	86	80	620	101	801
% App. Total	19.3	14.9	65.8		2.1	91.5	6.4		58.1	15.1	26.7		10	77.4	12.6	
PHF	.484	.600	.946	.805	.750	.844	.719	.861	.735	.813	.821	.827	.800	.951	.935	.963

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

File Name : 01\_TEM\_Butter\_Rancho AM  
 Site Code : 10522320  
 Start Date : 4/12/2022  
 Page No : 1

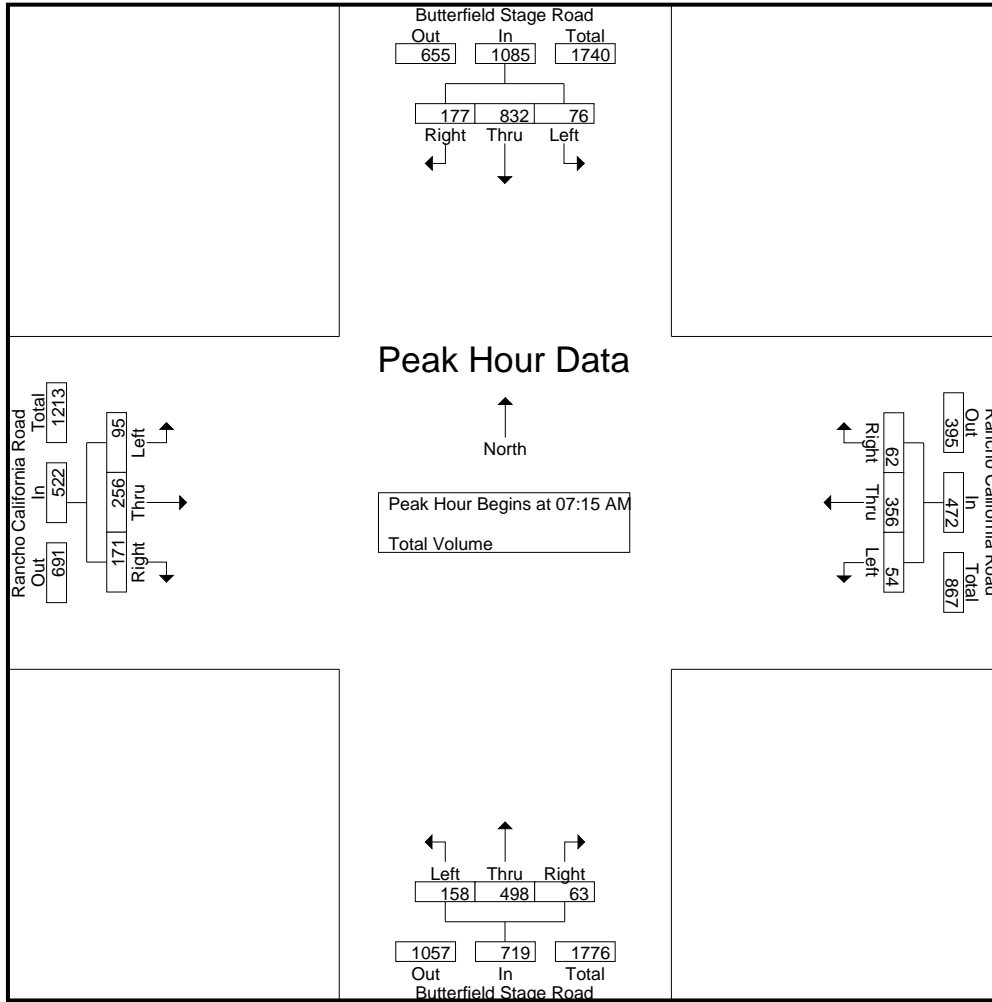
Groups Printed- Total Volume

Start Time	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. 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	

Start Time	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. 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	<b>52</b>	283	<b>16</b>	83	13	112	18	96	<b>20</b>	134	<b>30</b>	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	<b>22</b>	<b>240</b>	48	<b>310</b>	13	98	<b>20</b>	131	47	<b>149</b>	17	<b>213</b>	19	67	<b>55</b>	<b>141</b>	<b>795</b>
08:00 AM	20	179	39	238	16	<b>104</b>	15	<b>135</b>	<b>63</b>	109	10	182	20	<b>74</b>	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

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

File Name : 01\_TEM\_Butter\_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:

	07:00 AM				08:00 AM				07:30 AM				07:30 AM			
+0 mins.	<b>29</b>	190	46	265	16	104	15	135	30	144	16	190	<b>26</b>	61	43	130
+15 mins.	17	214	<b>52</b>	283	<b>28</b>	84	<b>20</b>	132	47	<b>149</b>	<b>17</b>	<b>213</b>	19	67	<b>55</b>	<b>141</b>
+30 mins.	17	199	38	254	24	83	14	121	<b>63</b>	109	10	182	20	<b>74</b>	47	141
+45 mins.	22	<b>240</b>	48	<b>310</b>	21	<b>110</b>	8	<b>139</b>	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

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

File Name : 01\_TEM\_Butter\_Rancho PM  
 Site Code : 10522320  
 Start Date : 4/12/2022  
 Page No : 1

Groups Printed- Total Volume

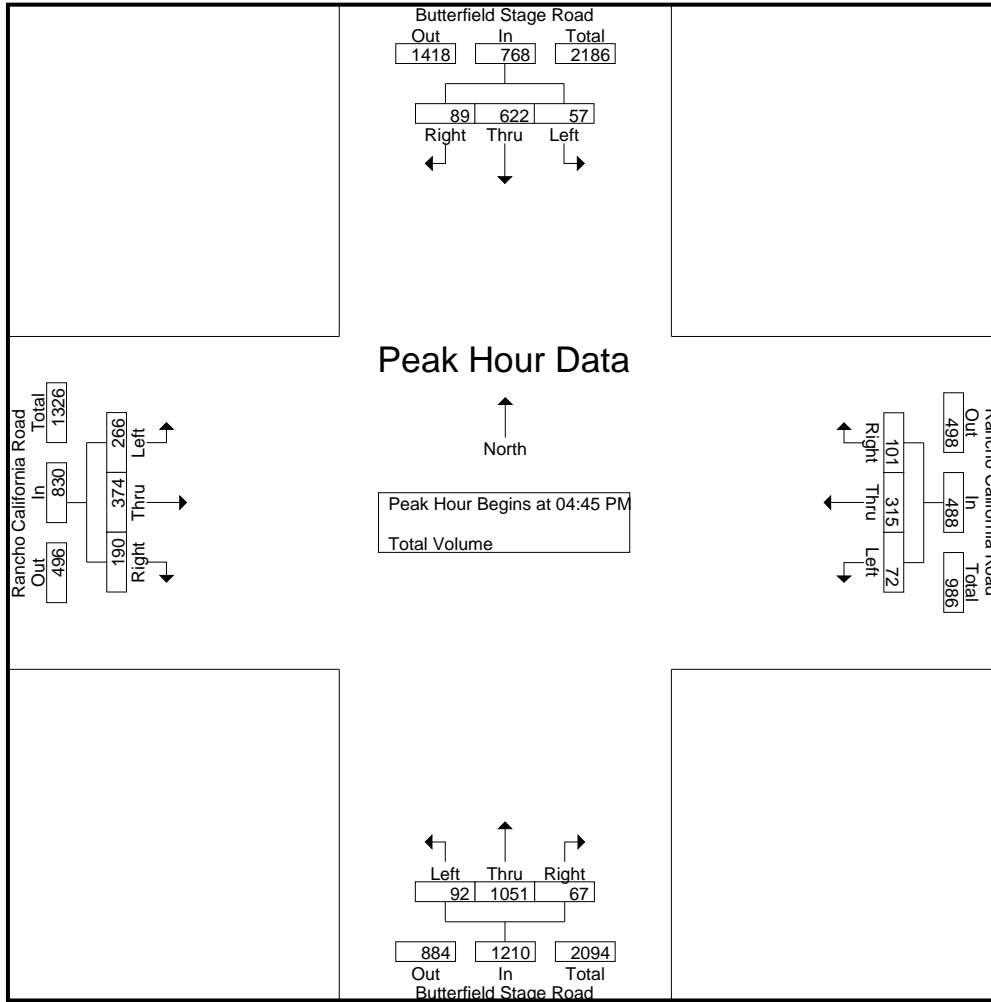
Start Time	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	26	142	27	195	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	

Start Time	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
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

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

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

File Name : 01\_TEM\_Butter\_Rancho PM  
 Site Code : 10522320  
 Start Date : 4/12/2022  
 Page No : 2



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

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 : 1

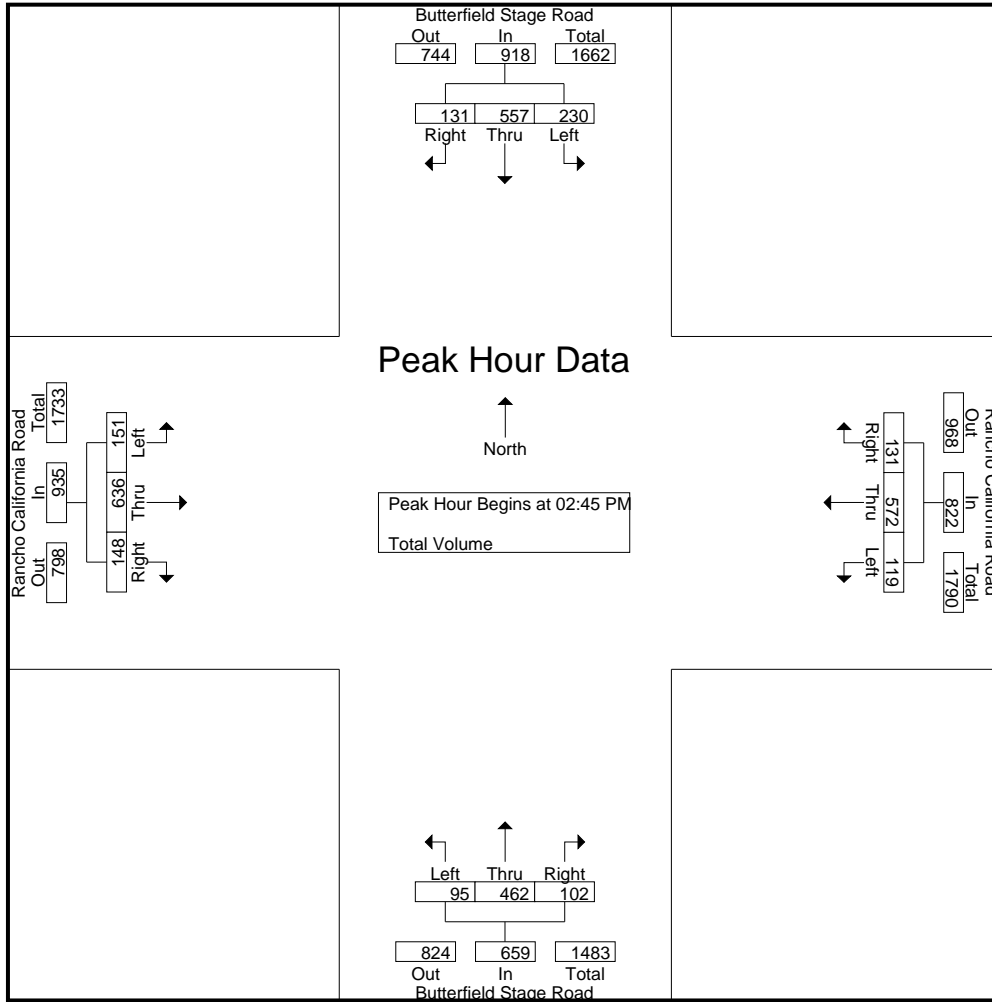
Groups Printed- Total Volume

Start Time	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. 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	

Start Time	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. 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	<b>170</b>	<b>44</b>	<b>251</b>	846
03:00 PM	<b>72</b>	145	<b>38</b>	<b>255</b>	<b>33</b>	<b>152</b>	36	<b>221</b>	<b>28</b>	86	<b>30</b>	144	34	161	38	233	<b>853</b>
03:15 PM	44	<b>159</b>	26	229	31	131	33	195	18	<b>132</b>	26	<b>176</b>	<b>41</b>	140	34	215	815
03:30 PM	47	121	30	198	29	145	<b>38</b>	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

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	<b>182</b>	<b>44</b>	<b>292</b>	33	137	17	187	24	127	22	173	37	<b>170</b>	<b>44</b>	<b>251</b>
+15 mins.	64	147	25	236	28	<b>191</b>	42	<b>261</b>	<b>26</b>	122	<b>27</b>	<b>175</b>	34	161	38	233
+30 mins.	65	155	30	250	36	148	46	230	21	<b>138</b>	13	172	<b>41</b>	140	34	215
+45 mins.	<b>67</b>	132	37	236	<b>41</b>	172	<b>47</b>	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

County of Riverside  
 N/S: Butterfield Stage Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 04\_CRV\_Butter\_RC AM  
 Site Code : 10522640  
 Start Date : 7/7/2022  
 Page No : 1

Groups Printed- Total Volume

Start Time	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
07:00 AM	14	88	27	129	4	46	9	59	5	48	3	56	11	52	23	86	330
07:15 AM	11	108	39	158	7	57	6	70	13	58	5	76	23	33	14	70	374
07:30 AM	17	147	36	200	7	80	10	97	12	59	3	74	14	48	7	69	440
07:45 AM	21	170	40	231	13	94	10	117	17	61	7	85	16	43	21	80	513
Total	63	513	142	718	31	277	35	343	47	226	18	291	64	176	65	305	1657
08:00 AM	16	206	40	262	9	69	13	91	15	89	14	118	22	45	21	88	559
08:15 AM	22	187	38	247	9	99	13	121	29	98	8	135	19	66	21	106	609
08:30 AM	22	138	33	193	11	79	10	100	18	96	10	124	34	60	20	114	531
08:45 AM	26	136	51	213	11	77	17	105	13	92	9	114	17	52	25	94	526
Total	86	667	162	915	40	324	53	417	75	375	41	491	92	223	87	402	2225
Grand Total	149	1180	304	1633	71	601	88	760	122	601	59	782	156	399	152	707	3882
Apprch %	9.1	72.3	18.6		9.3	79.1	11.6		15.6	76.9	7.5		22.1	56.4	21.5		
Total %	3.8	30.4	7.8	42.1	1.8	15.5	2.3	19.6	3.1	15.5	1.5	20.1	4	10.3	3.9	18.2	

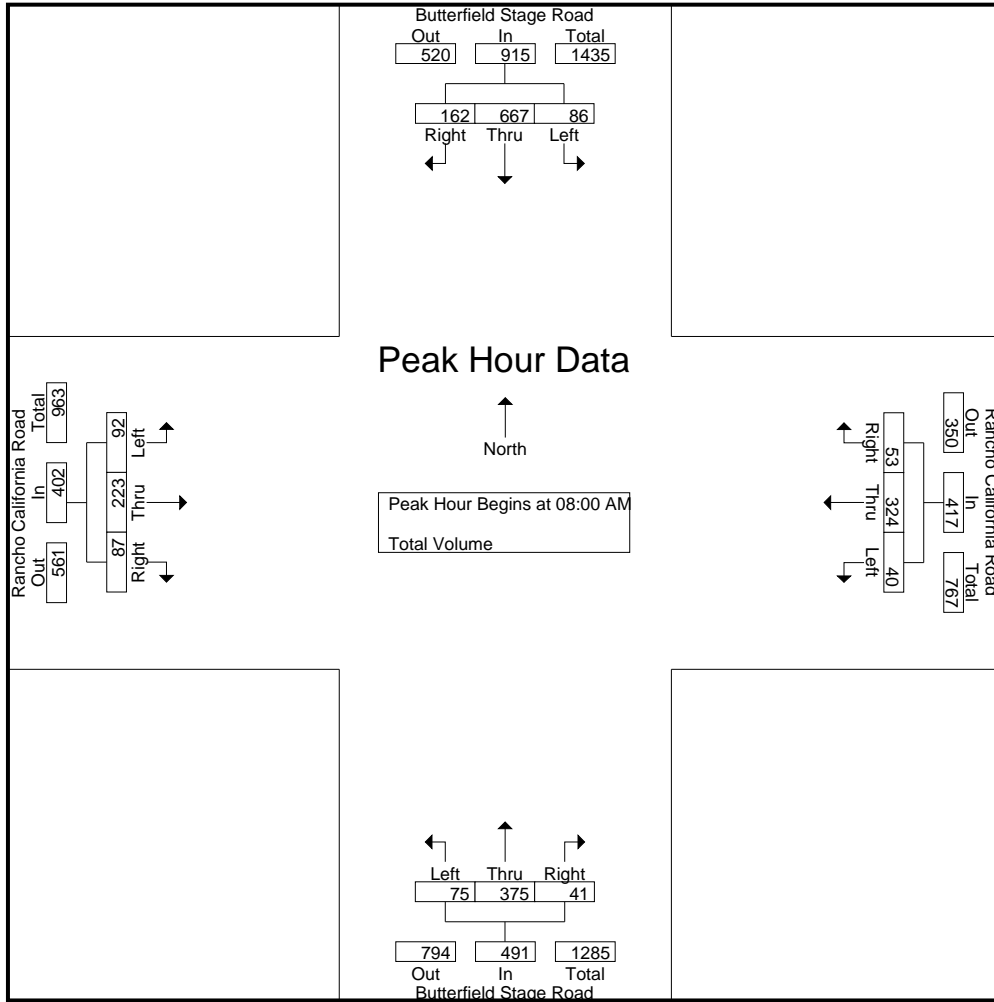
Start Time	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
08:00 AM	16	<b>206</b>	40	<b>262</b>	9	69	13	91	15	89	<b>14</b>	118	22	45	21	88	559
08:15 AM	22	187	38	247	9	<b>99</b>	13	<b>121</b>	<b>29</b>	<b>98</b>	8	<b>135</b>	19	<b>66</b>	21	106	<b>609</b>
08:30 AM	22	138	33	193	<b>11</b>	79	10	100	18	96	10	124	<b>34</b>	60	20	<b>114</b>	531
08:45 AM	<b>26</b>	136	<b>51</b>	213	11	77	<b>17</b>	105	13	92	9	114	17	52	<b>25</b>	94	526
Total Volume	86	667	162	915	40	324	53	417	75	375	41	491	92	223	87	402	2225
% App. Total	9.4	72.9	17.7		9.6	77.7	12.7		15.3	76.4	8.4		22.9	55.5	21.6		
PHF	.827	.809	.794	.873	.909	.818	.779	.862	.647	.957	.732	.909	.676	.845	.870	.882	.913

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



County of Riverside  
 N/S: Butterfield Stage Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 04\_CRV\_Butter\_RC AM  
 Site Code : 10522640  
 Start Date : 7/7/2022  
 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:

	07:30 AM				07:45 AM				08:00 AM				08:00 AM			
+0 mins.	17	147	36	200	13	94	10	117	15	89	14	118	22	45	21	88
+15 mins.	21	170	40	231	9	69	13	91	29	98	8	135	19	66	21	106
+30 mins.	16	206	40	262	9	99	13	121	18	96	10	124	34	60	20	114
+45 mins.	22	187	38	247	11	79	10	100	13	92	9	114	17	52	25	94
Total Volume	76	710	154	940	42	341	46	429	75	375	41	491	92	223	87	402
% App. Total	8.1	75.5	16.4		9.8	79.5	10.7		15.3	76.4	8.4		22.9	55.5	21.6	
PHF	.864	.862	.963	.897	.808	.861	.885	.886	.647	.957	.732	.909	.676	.845	.870	.882

County of Riverside  
 N/S: Butterfield Stage Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 04\_CRV\_Butter\_RC PM  
 Site Code : 10522640  
 Start Date : 7/7/2022  
 Page No : 1

Groups Printed- Total Volume

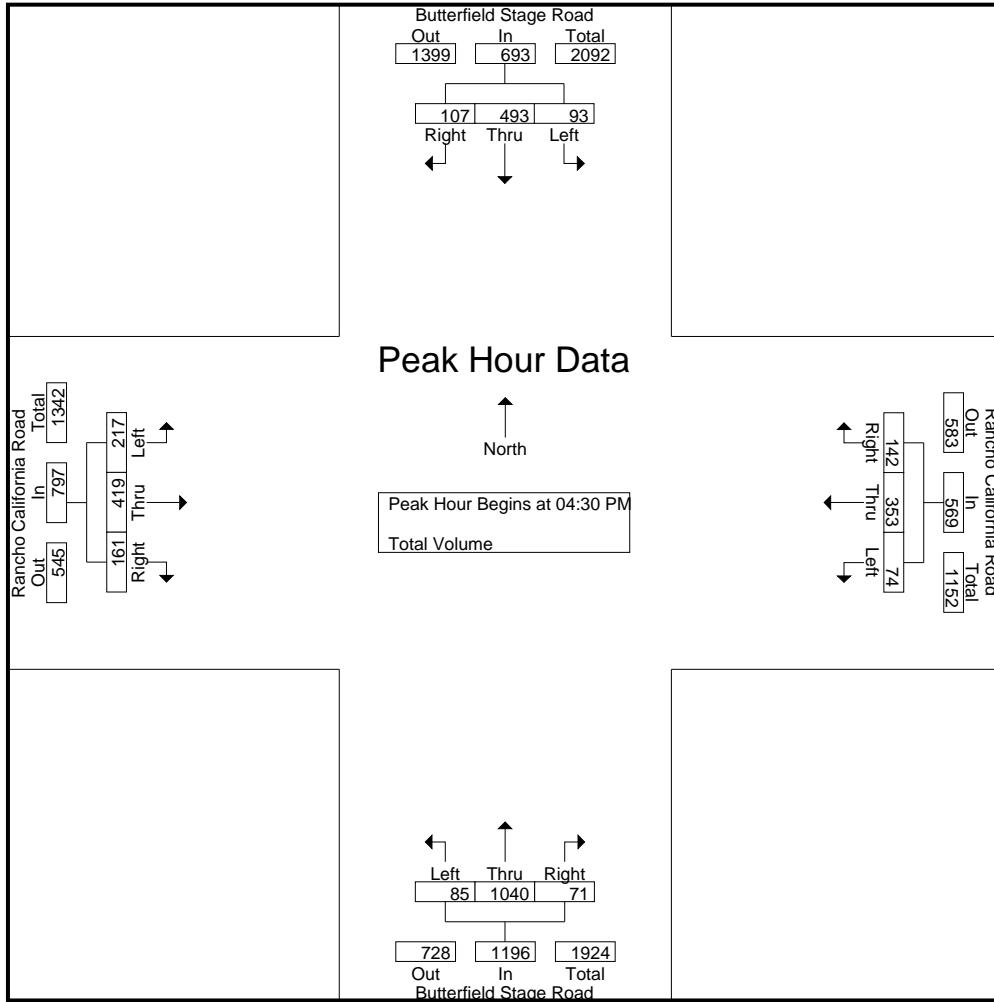
Start Time	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:00 PM	21	107	23	151	19	87	24	130	34	124	19	177	46	100	22	168	626
04:15 PM	28	110	15	153	20	112	39	171	18	215	19	252	54	101	36	191	767
04:30 PM	19	132	38	189	23	95	34	152	11	285	18	314	55	117	41	213	868
04:45 PM	30	119	26	175	18	88	34	140	26	246	14	286	59	101	36	196	797
Total	98	468	102	668	80	382	131	593	89	870	70	1029	214	419	135	768	3058
05:00 PM	23	107	18	148	23	93	40	156	24	257	25	306	42	91	38	171	781
05:15 PM	21	135	25	181	10	77	34	121	24	252	14	290	61	110	46	217	809
05:30 PM	14	105	26	145	23	81	39	143	25	265	21	311	44	93	30	167	766
05:45 PM	20	128	31	179	22	92	28	142	25	238	19	282	45	90	31	166	769
Total	78	475	100	653	78	343	141	562	98	1012	79	1189	192	384	145	721	3125
Grand Total	176	943	202	1321	158	725	272	1155	187	1882	149	2218	406	803	280	1489	6183
Apprch %	13.3	71.4	15.3		13.7	62.8	23.5		8.4	84.9	6.7		27.3	53.9	18.8		
Total %	2.8	15.3	3.3	21.4	2.6	11.7	4.4	18.7	3	30.4	2.4	35.9	6.6	13	4.5	24.1	

Start Time	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
04:30 PM	19	132	<b>38</b>	<b>189</b>	<b>23</b>	<b>95</b>	34	152	11	<b>285</b>	18	<b>314</b>	55	<b>117</b>	41	213	<b>868</b>
04:45 PM	<b>30</b>	119	26	175	18	88	34	140	<b>26</b>	246	14	286	59	101	36	196	797
05:00 PM	23	107	18	148	23	93	<b>40</b>	<b>156</b>	24	257	<b>25</b>	306	42	91	38	171	781
05:15 PM	21	<b>135</b>	25	181	10	77	34	121	24	252	14	290	<b>61</b>	110	<b>46</b>	<b>217</b>	809
Total Volume	93	493	107	693	74	353	142	569	85	1040	71	1196	217	419	161	797	3255
% App. Total	13.4	71.1	15.4		13	62	25		7.1	87	5.9		27.2	52.6	20.2		
PHF	.775	.913	.704	.917	.804	.929	.888	.912	.817	.912	.710	.952	.889	.895	.875	.918	.938

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:30 PM

County of Riverside  
 N/S: Butterfield Stage Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 04\_CRV\_Butter\_RC PM  
 Site Code : 10522640  
 Start Date : 7/7/2022  
 Page No : 2



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

	04:30 PM				04:15 PM				04:30 PM				04:30 PM			
+0 mins.	19	132	<b>38</b>	<b>189</b>	20	<b>112</b>	39	<b>171</b>	11	<b>285</b>	18	<b>314</b>	55	<b>117</b>	41	213
+15 mins.	<b>30</b>	119	26	175	<b>23</b>	95	34	152	<b>26</b>	246	14	286	59	101	36	196
+30 mins.	23	107	18	148	18	88	34	140	24	257	<b>25</b>	306	42	91	38	171
+45 mins.	21	<b>135</b>	25	181	23	93	<b>40</b>	156	24	252	14	290	<b>61</b>	110	<b>46</b>	<b>217</b>
Total Volume	93	493	107	693	84	388	147	619	85	1040	71	1196	217	419	161	797
% App. Total	13.4	71.1	15.4		13.6	62.7	23.7		7.1	87	5.9		27.2	52.6	20.2	
PHF	.775	.913	.704	.917	.913	.866	.919	.905	.817	.912	.710	.952	.889	.895	.875	.918

County of Riverside  
 N/S: Butterfield Stage Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 04\_CRV\_Butter\_RC SAT  
 Site Code : 10522640  
 Start Date : 7/9/2022  
 Page No : 1

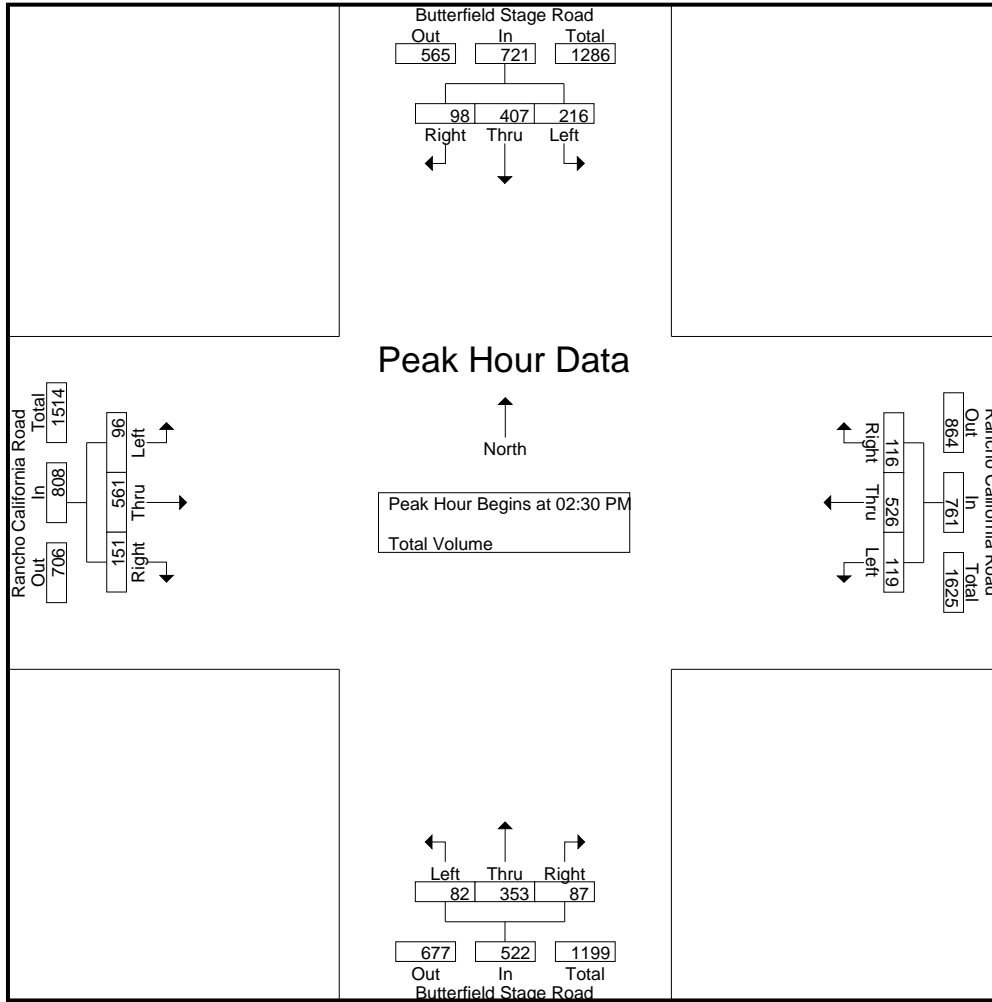
Groups Printed- Total Volume

Start Time	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
02:00 PM	55	130	19	204	23	120	22	165	29	83	22	134	23	135	37	195	698
02:15 PM	47	107	26	180	25	122	25	172	20	90	16	126	29	147	26	202	680
02:30 PM	53	111	22	186	22	105	25	152	26	87	20	133	26	153	37	216	687
02:45 PM	60	98	28	186	35	150	25	210	13	80	32	125	25	150	34	209	730
Total	215	446	95	756	105	497	97	699	88	340	90	518	103	585	134	822	2795
03:00 PM	54	105	26	185	34	124	36	194	19	80	11	110	26	135	42	203	692
03:15 PM	49	93	22	164	28	147	30	205	24	106	24	154	19	123	38	180	703
03:30 PM	37	84	35	156	24	146	34	204	19	79	19	117	28	127	33	188	665
03:45 PM	21	85	28	134	25	131	34	190	28	89	24	141	40	119	39	198	663
Total	161	367	111	639	111	548	134	793	90	354	78	522	113	504	152	769	2723
04:00 PM	26	90	20	136	24	145	30	199	23	92	20	135	27	121	37	185	655
04:15 PM	26	79	19	124	29	160	25	214	27	105	13	145	41	140	49	230	713
04:30 PM	31	89	27	147	26	161	36	223	18	91	24	133	23	97	35	155	658
04:45 PM	18	90	25	133	26	169	31	226	27	108	21	156	28	101	29	158	673
Total	101	348	91	540	105	635	122	862	95	396	78	569	119	459	150	728	2699
Grand Total	477	1161	297	1935	321	1680	353	2354	273	1090	246	1609	335	1548	436	2319	8217
Apprch %	24.7	60	15.3		13.6	71.4	15		17	67.7	15.3		14.4	66.8	18.8		
Total %	5.8	14.1	3.6	23.5	3.9	20.4	4.3	28.6	3.3	13.3	3	19.6	4.1	18.8	5.3	28.2	

Start Time	Butterfield Stage Road Southbound				Rancho California Road Westbound				Butterfield Stage Road Northbound				Rancho California Road Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 04:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 02:30 PM																	
02:30 PM	53	<b>111</b>	22	<b>186</b>	22	105	25	152	<b>26</b>	87	20	133	<b>26</b>	<b>153</b>	37	<b>216</b>	687
02:45 PM	<b>60</b>	98	<b>28</b>	186	<b>35</b>	<b>150</b>	25	<b>210</b>	13	80	<b>32</b>	125	25	150	34	209	<b>730</b>
03:00 PM	54	105	26	185	34	124	<b>36</b>	194	19	80	11	110	26	135	<b>42</b>	203	692
03:15 PM	49	93	22	164	28	147	30	205	24	<b>106</b>	24	<b>154</b>	19	123	38	180	703
Total Volume	216	407	98	721	119	526	116	761	82	353	87	522	96	561	151	808	2812
% App. Total	30	56.4	13.6		15.6	69.1	15.2		15.7	67.6	16.7		11.9	69.4	18.7		
PHF	.900	.917	.875	.969	.850	.877	.806	.906	.788	.833	.680	.847	.923	.917	.899	.935	.963

County of Riverside  
 N/S: Butterfield Stage Road  
 E/W: Rancho California Road  
 Weather: Clear

File Name : 04\_CRV\_Butter\_RC SAT  
 Site Code : 10522640  
 Start Date : 7/9/2022  
 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				04:00 PM				02:15 PM			
+0 mins.	55	<b>130</b>	19	<b>204</b>	24	145	30	199	23	92	20	135	<b>29</b>	147	26	202
+15 mins.	47	107	26	180	<b>29</b>	160	25	214	<b>27</b>	105	13	145	26	<b>153</b>	37	<b>216</b>
+30 mins.	53	111	22	186	26	161	<b>36</b>	223	18	91	<b>24</b>	133	25	150	34	209
+45 mins.	<b>60</b>	98	<b>28</b>	186	26	<b>169</b>	31	<b>226</b>	27	<b>108</b>	21	<b>156</b>	26	135	<b>42</b>	203
Total Volume	215	446	95	756	105	635	122	862	95	396	78	569	106	585	139	830
% App. Total	28.4	59	12.6		12.2	73.7	14.2		16.7	69.6	13.7		12.8	70.5	16.7	
PHF	.896	.858	.848	.926	.905	.939	.847	.954	.880	.917	.813	.912	.914	.956	.827	.961



# Counts Unlimited, Inc.

County of Riverside  
 Rancho California Road  
 E/ Calle Contento  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: (951) 268-6268  
 email: counts@countsunlimited.com

CRV003  
 Site Code: 105-22320

Start Time	09-Apr-22 Sat	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		17	201			10	146				
12:15		16	168			14	161				
12:30		8	174			2	121				
12:45		7	159	48	702	5	141	31	569	79	1271
01:00		6	162			11	145				
01:15		4	187			4	147				
01:30		4	158			1	160				
01:45		4	194	18	701	4	146	20	598	38	1299
02:00		8	160			5	157				
02:15		7	186			3	170				
02:30		2	165			1	190				
02:45		3	<b>201</b>	20	712	6	198	15	715	35	1427
03:00		1	<b>173</b>			1	214				
03:15		4	<b>174</b>			0	196				
03:30		0	<b>178</b>			2	185				
03:45		1	166	6	691	9	180	12	775	18	1466
04:00		1	146			4	176				
04:15		0	178			2	<b>207</b>				
04:30		3	159			3	<b>184</b>				
04:45		1	133	5	616	5	<b>219</b>	14	786	19	1402
05:00		5	147			8	<b>199</b>				
05:15		15	125			14	153				
05:30		23	127			14	208				
05:45		25	115	68	514	29	210	65	770	133	1284
06:00		17	100			35	180				
06:15		27	91			29	195				
06:30		32	94			33	197				
06:45		46	80	122	365	30	151	127	723	249	1088
07:00		32	65			53	111				
07:15		52	78			43	95				
07:30		56	71			58	94				
07:45		53	46	193	260	55	90	209	390	402	650
08:00		56	49			60	78				
08:15		62	40			75	87				
08:30		49	49			107	58				
08:45		95	40	262	178	85	79	327	302	589	480
09:00		68	48			85	94				
09:15		98	46			90	95				
09:30		96	36			88	72				
09:45		92	43	354	173	94	76	357	337	711	510
10:00		123	44			95	63				
10:15		127	30			102	60				
10:30		134	28			95	55				
10:45		<b>182</b>	26	566	128	106	44	398	222	964	350
11:00		<b>184</b>	24			<b>114</b>	54				
11:15		<b>166</b>	20			<b>133</b>	45				
11:30		<b>151</b>	21			<b>106</b>	25				
11:45		178	12	679	77	<b>131</b>	18	484	142	1163	219
Total		2341	5117	2341	5117	2059	6329	2059	6329	4400	11446
Combined Total		7458		7458		8388		8388		15846	
AM Peak	-	10:45	-	-	-	11:00	-	-	-	-	-
Vol.	-	683	-	-	-	484	-	-	-	-	-
P.H.F.	-	0.928	-	-	-	0.910	-	-	-	-	-
PM Peak	-	-	02:45	-	-	-	04:15	-	-	-	-
Vol.	-	-	726	-	-	-	809	-	-	-	-
P.H.F.	-	-	0.903	-	-	-	0.924	-	-	-	-
Percentage		31.4%	68.6%			24.5%	75.5%				
ADT/AADT		ADT 15,846		AADT 15,846							

# Counts Unlimited, Inc.

County of Riverside  
 Rancho California Road  
 W/ Calle Contento  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: (951) 268-6268  
 email: counts@countsunlimited.com

CRV002  
 Site Code: 105-22320

Start Time	09-Apr-22 Sat	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		19	230			11	154				
12:15		22	191			16	165				
12:30		9	196			2	131				
12:45		9	215	59	832	6	142	35	592	94	1424
01:00		8	188			7	147				
01:15		4	215			6	153				
01:30		4	186			2	160				
01:45		5	229	21	818	5	138	20	598	41	1416
02:00		7	202			5	163				
02:15		8	214			3	184				
02:30		3	189			1	210				
02:45		4	<b>225</b>	22	830	6	188	15	745	37	1575
03:00		1	<b>214</b>			2	225				
03:15		4	<b>195</b>			0	194				
03:30		1	<b>214</b>			2	189				
03:45		2	182	8	805	10	193	14	801	22	1606
04:00		1	181			4	180				
04:15		0	206			3	219				
04:30		5	187			5	185				
04:45		5	150	11	724	6	223	18	807	29	1531
05:00		9	162			7	211				
05:15		26	129			15	169				
05:30		18	153			13	<b>220</b>				
05:45		28	143	81	587	43	<b>209</b>	78	809	159	1396
06:00		16	132			33	<b>196</b>				
06:15		35	118			32	<b>214</b>				
06:30		38	117			44	211				
06:45		70	93	159	460	38	170	147	791	306	1251
07:00		35	86			54	139				
07:15		50	92			48	122				
07:30		53	83			71	130				
07:45		63	53	201	314	59	130	232	521	433	835
08:00		68	54			57	107				
08:15		73	54			82	112				
08:30		59	60			115	89				
08:45		118	52	318	220	103	118	357	426	675	646
09:00		86	56			79	110				
09:15		128	49			96	115				
09:30		119	37			105	90				
09:45		122	47	455	189	109	97	389	412	844	601
10:00		142	49			102	80				
10:15		160	33			111	77				
10:30		162	33			111	71				
10:45		<b>211</b>	30	675	145	100	48	424	276	1099	421
11:00		<b>206</b>	28			<b>122</b>	66				
11:15		<b>191</b>	22			<b>132</b>	53				
11:30		<b>190</b>	21			<b>117</b>	25				
11:45		204	13	791	84	<b>142</b>	20	513	164	1304	248
<b>Total</b>		2801	6008	2801	6008	2242	6942	2242	6942	5043	12950
<b>Combined Total</b>		8809		8809		9184		9184		17993	
AM Peak	-	10:45	-	-	-	11:00	-	-	-	-	-
Vol.	-	798	-	-	-	513	-	-	-	-	-
P.H.F.	-	0.945	-	-	-	0.903	-	-	-	-	-
PM Peak	-	-	02:45	-	-	-	05:30	-	-	-	-
Vol.	-	-	848	-	-	-	839	-	-	-	-
P.H.F.	-	-	0.942	-	-	-	0.941	-	-	-	-
Percentage		31.8%	68.2%			24.4%	75.6%				
ADT/AADT		ADT 17,993		AADT 17,993							



# Counts Unlimited, Inc.

City of Temecula  
 Rancho California Road  
 W/ Butterfield Stage Road  
 24 Hour Directional Volume Count

PO Box 1178  
 Corona, CA 92878  
 Phone: (951) 268-6268  
 email: counts@countsunlimited.com

TEM001  
 Site Code: 105-22320

Start Time	09-Apr-22 Sat	Eastbound		Hour Totals		Westbound		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		21	<b>264</b>			17	177				
12:15		25	<b>225</b>			13	178				
12:30		16	<b>255</b>			4	147				
12:45		15	<b>228</b>	77	972	5	152	39	654	116	1626
01:00		15	204			9	163				
01:15		8	193			15	172				
01:30		9	223			4	175				
01:45		5	221	37	841	10	155	38	665	75	1506
02:00		10	215			4	165				
02:15		9	184			2	183				
02:30		8	208			3	190				
02:45		7	231	34	838	4	198	13	736	47	1574
03:00		1	225			5	223				
03:15		3	229			0	178				
03:30		1	213			3	195				
03:45		1	199	6	866	11	191	19	787	25	1653
04:00		4	219			2	192				
04:15		3	195			5	222				
04:30		3	211			8	197				
04:45		7	158	17	783	8	232	23	843	40	1626
05:00		6	181			10	234				
05:15		21	191			16	177				
05:30		19	186			12	220				
05:45		36	162	82	720	40	<b>238</b>	78	869	160	1589
06:00		21	145			35	<b>221</b>				
06:15		36	161			40	<b>225</b>				
06:30		42	124			66	<b>234</b>				
06:45		69	116	168	546	52	218	193	898	361	1444
07:00		49	116			59	144				
07:15		49	140			66	140				
07:30		63	88			88	149				
07:45		71	91	232	435	81	149	294	582	526	1017
08:00		90	91			87	113				
08:15		78	71			117	125				
08:30		87	84			142	112				
08:45		137	66	392	312	128	125	474	475	866	787
09:00		104	82			117	104				
09:15		155	57			120	133				
09:30		131	46			139	111				
09:45		159	76	549	261	137	97	513	445	1062	706
10:00		161	53			126	115				
10:15		220	55			147	84				
10:30		<b>207</b>	43			154	81				
10:45		<b>265</b>	38	853	189	144	58	571	338	1424	527
11:00		<b>250</b>	37			<b>149</b>	51				
11:15		<b>243</b>	29			<b>155</b>	42				
11:30		179	25			<b>167</b>	30				
11:45		239	18	911	109	<b>150</b>	24	621	147	1532	256
<b>Total</b>		3358	6872	3358	6872	2876	7439	2876	7439	6234	14311
<b>Combined Total</b>		10230		10230		10315		10315		20545	
AM Peak	-	10:30	-	-	-	11:00	-	-	-	-	-
Vol.	-	965	-	-	-	621	-	-	-	-	-
P.H.F.	-	0.910	-	-	-	0.930	-	-	-	-	-
PM Peak	-	-	12:00	-	-	-	05:45	-	-	-	-
Vol.	-	-	972	-	-	-	918	-	-	-	-
P.H.F.	-	-	0.920	-	-	-	0.964	-	-	-	-
Percentage		32.8%	67.2%			27.9%	72.1%				
ADT/AADT		ADT 20,545		AADT 20,545							

Intersection		Weekday AM Peak Hour													Weekday PM Peak Hour													Saturday Midday Peak Hour																								
		Northbound			Southbound			Eastbound			Westbound			Sum	Northbound			Southbound			Eastbound			Westbound			Sum	Northbound			Southbound			Eastbound			Westbound			Sum												
No.	Intersection Name	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right									
3	Nicholas Valley Road / Calle Contento at Rancho California Road	29	3	14	6	5	34	17	272	45	37	482	12	956	30	9	9	12	8	36	32	453	55	14	384	13	1055	41	8	18	53	14	76	86	651	97	14	679	91	1828												
4	Butterfield Stage Road at Rancho California Road	158	498	63	76	832	177	95	256	171	54	356	62	2798	92	1051	67	57	622	89	266	374	190	72	315	101	3296	95	462	102	230	557	131	151	636	148	119	572	131	3334												
3	Nicholas Valley Road / Calle Contento at Rancho California Road	27	2	5	2	9	34	19	253	30	10	371	11	773	25	13	10	12	11	49	35	470	65	14	445	22	1171	39	11	18	20	14	76	74	619	94	16	624	58	1663												
4	Butterfield Stage Road at Rancho California Road	75	375	41	86	667	162	92	223	87	40	324	53	2225	85	1040	71	93	493	107	217	419	161	74	353	142	3255	82	353	87	216	407	98	96	561	151	119	526	116	2812												
														Adjustment Factor (Int #3)													Adjustment Factor (Int #3)													Adjustment Factor (Int #3)												
														Adjustment Factor (Int #4)													Adjustment Factor (Int #4)													Adjustment Factor (Int #4)												
														1.237													0.901													1.099												
														1.258													1.013													1.186												

April 2022 Counts (Non-Summer Counts)

July 2022 Counts (Summer Counts)

## **Appendix B**

Existing Conditions LOS Analysis Worksheets

**Intersection Level Of Service Report**

**Intersection 1: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	All-way stop	Delay (sec / veh):	12.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.517

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↔↔		↕↔		↔↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	260	26	93	97	38	252
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]	260	26	93	97	38	252
Peak Hour Factor	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	7	26	27	11	70
Total Analysis Volume [veh/h]	289	29	103	108	42	280
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	560	687	594	673	564	612
Degree of Utilization, x	0.52	0.04	0.17	0.16	0.07	0.46

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	2.95	0.13	0.62	0.57	0.24	2.39
95th-Percentile Queue Length [ft]	73.73	3.30	15.57	14.23	6.02	59.83
Approach Delay [s/veh]	15.11		9.54		12.95	
Approach LOS	C		A		B	
Intersection Delay [s/veh]	12.91					
Intersection LOS	B					

**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	7.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	87	10	64	6	10	15	10	223	86	117	386	4
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]	87	10	64	6	10	15	10	223	86	117	386	4
Peak Hour Factor	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790
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	3	18	2	3	4	3	63	24	33	110	1
Total Analysis Volume [veh/h]	99	11	73	7	11	17	11	254	98	133	439	5
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	277			684			154			123		
Exiting Flow Rate [veh/h]	247			28			566			341		
Demand Flow Rate [veh/h]	87	10	64	6	10	15	10	223	86	117	386	4
Adjusted Demand Flow Rate [veh/h]	99	11	73	7	11	17	11	254	98	133	439	5

**Lanes**

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.98			0.98			0.98		
Entry Flow Rate [veh/h]	187			36			371			589		
Capacity of Entry and Bypass Lanes [veh/h]	1040			687			1180			1217		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	1020			674			1157			1193		
X, volume / capacity	0.18			0.05			0.31			0.48		

**Movement, Approach, & Intersection Results**

Lane LOS	A			A			A			A		
95th-Percentile Queue Length [veh]	0.65			0.16			1.35			2.71		
95th-Percentile Queue Length [ft]	16.31			4.11			33.86			67.87		
Approach Delay [s/veh]	5.20			5.90			6.10			8.23		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	7.01											
Intersection LOS	A											

**Intersection Level Of Service Report**

**Intersection 3: Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)**

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			Nicholas Valley Road			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	1	0	1	1	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]	40.00			40.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Calle Contento			Nicholas Valley Road			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 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

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	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
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 major street		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing major street		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street		0			0			0			0	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

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**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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
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	1071	1029	112	965	907	215	308	268	97	294	280
d1, Uniform Delay [s]	47.54	12.18	12.18	50.82	18.82	18.85	49.99	44.52	44.66	50.94	44.91	44.97
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
l, 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]	9.14	0.73	0.76	10.61	2.88	3.09	1.82	5.87	7.45	6.45	5.75	6.36
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.85	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]	56.67	12.91	12.94	61.43	21.69	21.94	51.80	50.39	52.11	57.38	50.66	51.33
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]	5.13	3.77	3.63	2.56	10.02	9.52	1.44	6.98	6.32	1.76	6.59	6.37
50th-Percentile Queue Length [ft/ln]	128.19	94.17	90.81	63.90	250.41	238.11	36.04	174.55	158.02	44.02	164.77	159.36
95th-Percentile Queue Length [veh/ln]	8.84	6.78	6.54	4.60	15.21	14.59	2.59	11.32	10.44	3.17	10.80	10.52
95th-Percentile Queue Length [ft/ln]	221.03	169.50	163.47	115.02	380.17	364.64	64.87	282.89	261.10	79.24	270.03	262.88

**Movement, Approach, & Intersection Results**

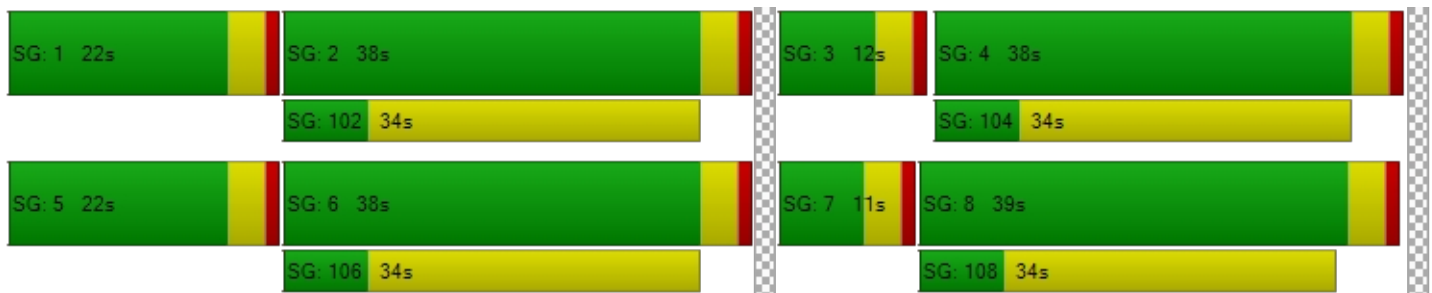
d_M, Delay for Movement [s/veh]	56.67	12.93	12.94	61.43	21.79	21.94	51.80	50.59	52.11	57.38	50.93	51.33
Movement LOS	E	B	B	E	C	C	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	22.55			24.58			51.31			51.72		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	33.62											
Intersection LOS	C											
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 [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	44.58			44.58			44.58			44.58		
I_p,int, Pedestrian LOS Score for Intersection	3.031			3.016			2.836			2.630		
Crosswalk LOS	C			C			C			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	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		
I_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: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	All-way stop	Delay (sec / veh):	10.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.463

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↔↔		↕↔		↔↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	141	55	292	196	41	133
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]	141	55	292	196	41	133
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	14	77	51	11	35
Total Analysis Volume [veh/h]	148	58	307	206	43	140
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	542	662	663	762	574	625
Degree of Utilization, x	0.27	0.09	0.46	0.27	0.07	0.22

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.10	0.29	2.45	1.09	0.24	0.85
95th-Percentile Queue Length [ft]	27.52	7.18	61.28	27.35	6.05	21.37
Approach Delay [s/veh]	10.92		11.29		9.97	
Approach LOS	B		B		A	
Intersection Delay [s/veh]	10.94					
Intersection LOS	B					



**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	7.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	76	18	175	8	11	28	29	373	74	93	363	8
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]	76	18	175	8	11	28	29	373	74	93	363	8
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]	20	5	47	2	3	7	8	100	20	25	97	2
Total Analysis Volume [veh/h]	81	19	187	9	12	30	31	399	79	100	389	9
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	448			581			123			134		
Exiting Flow Rate [veh/h]	195			60			510			607		
Demand Flow Rate [veh/h]	76	18	175	8	11	28	29	373	74	93	363	8
Adjusted Demand Flow Rate [veh/h]	81	19	187	9	12	30	31	399	79	100	389	9

**Lanes**

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.98			0.98			0.98		
Entry Flow Rate [veh/h]	293			53			520			508		
Capacity of Entry and Bypass Lanes [veh/h]	875			763			1217			1205		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	857			748			1193			1181		
X, volume / capacity	0.33			0.07			0.43			0.42		

**Movement, Approach, & Intersection Results**

Lane LOS	A			A			A			A		
95th-Percentile Queue Length [veh]	1.48			0.22			2.18			2.14		
95th-Percentile Queue Length [ft]	37.00			5.48			54.43			53.38		
Approach Delay [s/veh]	7.98			5.51			7.38			7.36		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	7.43											
Intersection LOS	A											

**Intersection Level Of Service Report**

**Intersection 3: Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)**

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			Nicholas Valley Road			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	1	0	1	1	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]	40.00			40.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Calle Contento			Nicholas Valley Road			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]	29.24	29.24	29.24	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 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

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	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
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 major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
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	5	0	0	5	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	29	0	0	29	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	1012	991	99	989	947	339	358	318	107	287	263
d1, Uniform Delay [s]	48.27	16.03	16.05	48.48	14.55	14.56	46.44	41.10	41.12	48.47	42.71	42.82
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
l, 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	2.35	2.41	5.47	1.09	1.14	4.54	5.93	6.68	7.81	4.33	5.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.78	0.57	0.57	0.59	0.38	0.38	0.81	0.86	0.86	0.69	0.77	0.78
d, Delay for Lane Group [s/veh]	58.85	18.39	18.46	53.94	15.64	15.70	50.98	47.03	47.79	56.27	47.03	47.91
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]	2.66	8.49	8.35	1.56	4.80	4.62	3.55	7.85	7.05	2.06	5.58	5.28
50th-Percentile Queue Length [ft/ln]	66.40	212.35	208.74	39.06	120.07	115.45	88.87	196.28	176.27	51.45	139.40	132.08
95th-Percentile Queue Length [veh/ln]	4.78	13.27	13.09	2.81	8.40	8.14	6.40	12.45	11.41	3.70	9.45	9.05
95th-Percentile Queue Length [ft/ln]	119.52	331.85	327.22	70.30	209.93	203.56	159.96	311.16	285.14	92.60	236.22	226.33



**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	58.85	18.42	18.46	53.94	15.67	15.70	50.98	47.18	47.79	56.27	47.31	47.91
Movement LOS	E	B	B	D	B	B	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	21.48			18.49			48.54			48.76		
Approach LOS	C			B			D			D		
d_I, Intersection Delay [s/veh]	31.65											
Intersection LOS	C											
Intersection V/C	0.647											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			9.0			9.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	42.11			42.11			43.92			43.92		
I_p,int, Pedestrian LOS Score for Intersection	3.075			3.109			2.830			2.638		
Crosswalk LOS	C			C			C			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	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		
I_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: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	All-way stop	Delay (sec / veh):	17.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.759

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	204	71	227	199	104	409
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]	204	71	227	199	104	409
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	55	19	61	53	28	109
Total Analysis Volume [veh/h]	218	76	243	213	111	438
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	480	572	562	632	534	577
Degree of Utilization, x	0.45	0.13	0.43	0.34	0.21	0.76

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	2.33	0.46	2.17	1.48	0.78	6.79
95th-Percentile Queue Length [ft]	58.26	11.41	54.21	37.08	19.41	169.87
Approach Delay [s/veh]	14.65		12.67		22.95	
Approach LOS	B		B		C	
Intersection Delay [s/veh]	17.46					
Intersection LOS	C					

**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	13.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	110	26	189	24	7	57	39	476	72	141	642	27
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]	110	26	189	24	7	57	39	476	72	141	642	27
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	29	7	50	6	2	15	10	125	19	37	169	7
Total Analysis Volume [veh/h]	116	27	199	25	7	60	41	501	76	148	675	28
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	578			958			184			188		
Exiting Flow Rate [veh/h]	236			98			868			740		
Demand Flow Rate [veh/h]	110	26	189	24	7	57	39	476	72	141	642	27
Adjusted Demand Flow Rate [veh/h]	116	27	199	25	7	60	41	501	76	148	675	28

**Lanes**

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.98			0.98			0.98		
Entry Flow Rate [veh/h]	349			94			631			869		
Capacity of Entry and Bypass Lanes [veh/h]	766			520			1145			1140		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	751			510			1122			1118		
X, volume / capacity	0.46			0.18			0.55			0.76		

**Movement, Approach, & Intersection Results**

Lane LOS	B			A			A			C		
95th-Percentile Queue Length [veh]	2.40			0.65			3.49			7.77		
95th-Percentile Queue Length [ft]	60.03			16.33			87.16			194.34		
Approach Delay [s/veh]	11.04			9.52			9.83			16.50		
Approach LOS	B			A			A			C		
Intersection Delay [s/veh]	13.01											
Intersection LOS	B											

**Intersection Level Of Service Report**

**Intersection 3: Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)**

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			Nicholas Valley Road			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	1	0	1	1	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]	40.00			40.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	Calle Contento			Nicholas Valley Road			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]	258.06	225.33	188.94	264.29	250.88	214.42	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]	134.59	134.59	134.59	240.46	240.46	240.46	9.21	0.00	0.00	1.37	0.00	0.00
d_A, Approach Delay [s/veh]	235.56			236.50			1.03			0.17		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	27.64											
Intersection LOS	F											

**Intersection Level Of Service Report**

**Intersection 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

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	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		



**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
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 major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
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	5	0	0	5	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	29	0	0	29	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	725	681	263	871	815	213	461	432	141	494	462
d1, Uniform Delay [s]	52.71	25.63	25.66	48.17	20.37	20.37	53.05	41.95	41.95	52.41	38.89	38.90
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
l, 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]	10.39	1.71	1.84	10.32	1.47	1.57	4.69	11.34	11.99	14.61	2.89	3.10
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	0.79	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]	63.10	27.34	27.49	58.49	21.84	21.94	57.74	53.29	53.94	67.02	41.78	42.00
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]	3.00	5.82	5.52	7.04	6.24	5.86	2.27	12.25	11.54	3.93	9.53	8.96
50th-Percentile Queue Length [ft/ln]	74.91	145.51	138.06	176.03	155.94	146.39	56.63	306.23	288.47	98.25	238.25	224.10
95th-Percentile Queue Length [veh/ln]	5.39	9.78	9.38	11.39	10.33	9.82	4.08	17.99	17.11	7.07	14.59	13.87
95th-Percentile Queue Length [ft/ln]	134.83	244.42	234.41	284.83	258.33	245.60	101.93	449.72	427.75	176.85	364.82	346.85

**Movement, Approach, & Intersection Results**

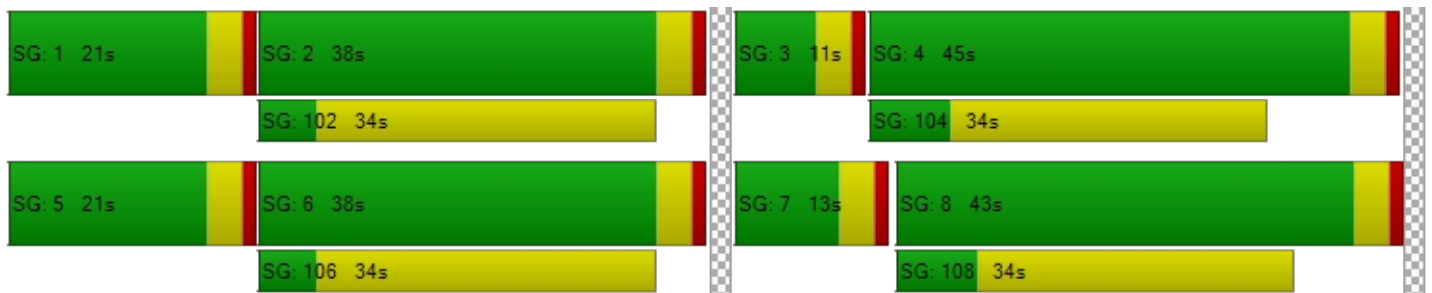
d_M, Delay for Movement [s/veh]	63.10	27.40	27.49	58.49	21.88	21.94	57.74	53.53	53.94	67.02	41.86	42.00
Movement LOS	E	C	C	E	C	C	E	D	D	E	D	D
d_A, Approach Delay [s/veh]	32.55			31.05			54.27			45.53		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	41.43											
Intersection LOS	D											
Intersection V/C	0.676											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			9.0			9.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	47.05			47.05			48.87			48.87		
I_p,int, Pedestrian LOS Score for Intersection	2.854			2.920			2.946			2.908		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	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		
I_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 C**

Project Opening Year (2024) With Ambient Growth  
Without Project Conditions  
LOS Analysis Worksheets

**Intersection Level Of Service Report**

**Intersection 1: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	All-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.542

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↔↔		↕↔		↔↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	270	27	97	101	40	262
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]	270	27	97	101	40	262
Peak Hour Factor	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	75	7	27	28	11	73
Total Analysis Volume [veh/h]	300	30	108	112	44	291
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	554	679	586	663	558	604
Degree of Utilization, x	0.54	0.04	0.18	0.17	0.08	0.48

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.22	0.14	0.67	0.60	0.26	2.61
95th-Percentile Queue Length [ft]	80.55	3.46	16.76	15.12	6.41	65.27
Approach Delay [s/veh]	15.87		9.72		13.49	
Approach LOS	C		A		B	
Intersection Delay [s/veh]	13.44					
Intersection LOS	B					

**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	7.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	90	10	67	6	10	16	10	232	89	122	401	4
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]	90	10	67	6	10	16	10	232	89	122	401	4
Peak Hour Factor	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790
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]	26	3	19	2	3	5	3	66	25	35	114	1
Total Analysis Volume [veh/h]	102	11	76	7	11	18	11	264	101	139	456	5
Pedestrian Volume [ped/h]	0			0			0			0		



**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	288			711			160			126		
Exiting Flow Rate [veh/h]	256			28			588			354		
Demand Flow Rate [veh/h]	90	10	67	6	10	16	10	232	89	122	401	4
Adjusted Demand Flow Rate [veh/h]	102	11	76	7	11	18	11	264	101	139	456	5

**Lanes**

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.98			0.98			0.98		
Entry Flow Rate [veh/h]	193			37			384			612		
Capacity of Entry and Bypass Lanes [veh/h]	1030			669			1173			1213		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	1009			656			1150			1190		
X, volume / capacity	0.19			0.05			0.33			0.50		

**Movement, Approach, & Intersection Results**

Lane LOS	A			A			A			A		
95th-Percentile Queue Length [veh]	0.69			0.17			1.44			2.94		
95th-Percentile Queue Length [ft]	17.17			4.35			35.94			73.45		
Approach Delay [s/veh]	5.33			6.09			6.29			8.59		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	7.28											
Intersection LOS	A											

**Intersection Level Of Service Report**

**Intersection 3: Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)**

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			Nicholas Valley Road			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]	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	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	Yes			Yes			Yes			Yes		

**Volumes**

Name	Calle Contento			Nicholas Valley Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	30	3	15	6	5	35	18	283	47	38	501	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	15	6	5	35	18	283	47	38	501	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	76	13	10	134	3
Total Analysis Volume [veh/h]	32	3	16	6	5	37	19	303	50	41	536	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]	335			621			53			55		
Exiting Flow Rate [veh/h]	98			36			617			332		
Demand Flow Rate [veh/h]	30	3	15	6	5	35	18	283	47	38	501	12
Adjusted Demand Flow Rate [veh/h]	32	3	16	6	5	37	19	303	50	41	536	13

**Lanes**

Override 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
Override 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]	53	12	38	179	202	283	319
Capacity of Entry and Bypass Lanes [veh/h]	982	807	807	1354	1354	1351	1351
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	962	792	792	1327	1327	1325	1325
X, volume / capacity	0.05	0.01	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]	0.17	0.04	0.15	0.45	0.52	0.79	0.92
95th-Percentile Queue Length [ft]	4.19	1.06	3.67	11.35	13.04	19.75	23.02
Approach Delay [s/veh]	4.22	4.93		3.86		4.62	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	4.35						
Intersection LOS	A						

**Intersection Level Of Service Report**

**Intersection 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

Control Type:	Signalized	Delay (sec / veh):	34.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.720

**Intersection Setup**

Name	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	164	518	66	79	865	184	99	266	178	56	370	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]	164	518	66	79	865	184	99	266	178	56	370	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]	47	147	19	22	246	52	28	76	51	16	105	18
Total Analysis Volume [veh/h]	186	589	75	90	983	209	113	302	202	64	420	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 major street		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing major street		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street		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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
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	45	0	16	40	0	11	38	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	29	0	0	29	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	0.57	0.57	0.06	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	0.33	0.33	0.03	0.14	0.15	0.04	0.13	0.14
s, saturation flow rate [veh/h]	1781	1870	1797	1781	1870	1758	3459	1870	1625	1781	1870	1775
c, Capacity [veh/h]	217	1055	1013	116	948	891	216	318	277	99	305	290
d1, Uniform Delay [s]	47.38	12.78	12.78	50.70	19.91	19.97	50.03	44.23	44.36	50.94	44.53	44.60
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
l, 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]	9.26	0.80	0.84	10.67	3.40	3.67	1.96	5.93	7.45	6.91	5.58	6.14
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	0.86	0.32	0.32	0.78	0.65	0.65	0.52	0.84	0.86	0.65	0.82	0.83
d, Delay for Lane Group [s/veh]	56.64	13.58	13.62	61.36	23.31	23.64	51.99	50.17	51.81	57.84	50.11	50.74
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]	5.30	4.07	3.92	2.67	10.94	10.44	1.51	7.26	6.55	1.86	6.81	6.58
50th-Percentile Queue Length [ft/ln]	132.51	101.75	98.08	66.81	273.51	260.96	37.80	181.48	163.69	46.39	170.34	164.47
95th-Percentile Queue Length [veh/ln]	9.08	7.33	7.06	4.81	16.36	15.74	2.72	11.68	10.74	3.34	11.09	10.79
95th-Percentile Queue Length [ft/ln]	226.90	183.15	176.54	120.25	409.12	393.43	68.04	291.95	268.60	83.50	277.36	269.63

**Movement, Approach, & Intersection Results**

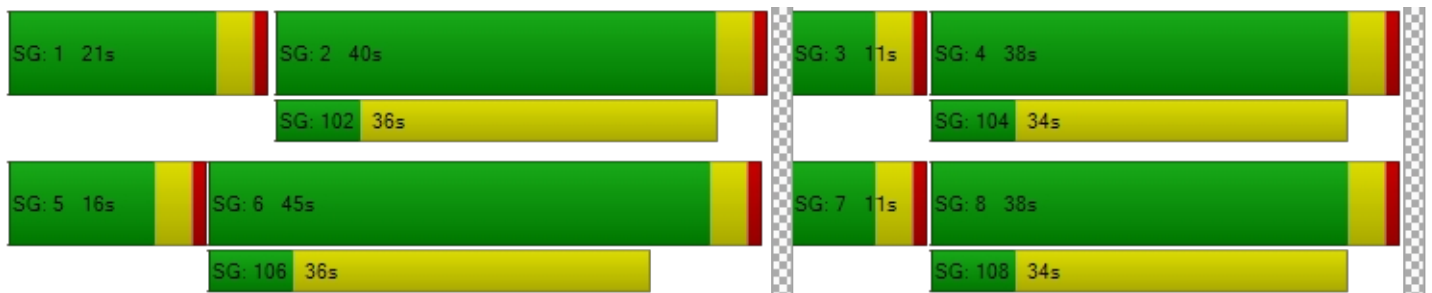
d_M, Delay for Movement [s/veh]	56.64	13.60	13.62	61.36	23.44	23.64	51.99	50.35	51.81	57.84	50.37	50.74
Movement LOS	E	B	B	E	C	C	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	23.02			26.13			51.13			51.27		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	34.23											
Intersection LOS	C											
Intersection V/C	0.720											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	44.58			44.58			44.58			44.58		
I_p,int, Pedestrian LOS Score for Intersection	3.060			3.045			2.850			2.642		
Crosswalk LOS	C			C			C			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	745			654			618			618		
d_b, Bicycle Delay [s]	21.66			24.91			26.28			26.28		
I_b,int, Bicycle LOS Score for Intersection	2.261			2.617			2.069			2.019		
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: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	All-way stop	Delay (sec / veh):	11.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.485

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↔↔		↕↔		↔↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	147	57	304	204	43	138
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]	147	57	304	204	43	138
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	15	80	54	11	36
Total Analysis Volume [veh/h]	154	60	319	214	45	145
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	537	654	658	755	568	617
Degree of Utilization, x	0.29	0.09	0.49	0.28	0.08	0.23

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.18	0.30	2.66	1.17	0.26	0.91
95th-Percentile Queue Length [ft]	29.42	7.54	66.49	29.17	6.42	22.67
Approach Delay [s/veh]	11.14		11.67		10.14	
Approach LOS	B		B		B	
Intersection Delay [s/veh]	11.24					
Intersection LOS	B					

**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	7.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	79	19	182	8	11	29	30	388	77	97	378	8
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	19	182	8	11	29	30	388	77	97	378	8
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]	21	5	49	2	3	8	8	104	21	26	101	2
Total Analysis Volume [veh/h]	85	20	195	9	12	31	32	415	82	104	405	9
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	465			606			128			140		
Exiting Flow Rate [veh/h]	202			62			531			631		
Demand Flow Rate [veh/h]	79	19	182	8	11	29	30	388	77	97	378	8
Adjusted Demand Flow Rate [veh/h]	85	20	195	9	12	31	32	415	82	104	405	9

**Lanes**

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	306	54	540	529
Capacity of Entry and Bypass Lanes [veh/h]	859	744	1212	1197
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	842	730	1188	1174
X, volume / capacity	0.36	0.07	0.45	0.44

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A
95th-Percentile Queue Length [veh]	1.62	0.23	2.34	2.31
95th-Percentile Queue Length [ft]	40.55	5.74	58.54	57.67
Approach Delay [s/veh]	8.41	5.67	7.67	7.68
Approach LOS	A	A	A	A
Intersection Delay [s/veh]	7.76			
Intersection LOS	A			

**Intersection Level Of Service Report**

**Intersection 3: Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)**

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			Nicholas Valley Road			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]	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	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	Yes			Yes			Yes			Yes		

**Volumes**

Name	Calle Contento			Nicholas Valley Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	31	9	9	12	8	37	33	471	57	15	399	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]	31	9	9	12	8	37	33	471	57	15	399	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]	9	3	3	4	2	11	10	138	17	4	117	4
Total Analysis Volume [veh/h]	36	11	11	14	9	43	39	550	67	18	466	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]	615			530			42			88		
Exiting Flow Rate [veh/h]	96			67			556			587		
Demand Flow Rate [veh/h]	31	9	9	12	8	37	33	471	57	15	399	14
Adjusted Demand Flow Rate [veh/h]	36	11	11	14	9	43	39	550	67	18	466	16

**Lanes**

Override 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
Override 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	315	355	240	271
Capacity of Entry and Bypass Lanes [veh/h]	737	877	877	1367	1367	1312	1312
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	723	860	860	1341	1341	1286	1286
X, volume / capacity	0.08	0.03	0.05	0.23	0.26	0.18	0.21

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.26	0.08	0.16	0.89	1.04	0.67	0.77
95th-Percentile Queue Length [ft]	6.53	2.06	3.95	22.26	26.05	16.70	19.36
Approach Delay [s/veh]	5.82	4.58		4.79		4.46	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	4.69						
Intersection LOS	A						

**Intersection Level Of Service Report**

**Intersection 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

Control Type:	Signalized	Delay (sec / veh):	32.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.700

**Intersection Setup**

Name	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	96	1093	70	59	647	93	277	389	198	75	328	105
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]	96	1093	70	59	647	93	277	389	198	75	328	105
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
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]	26	291	19	16	172	25	74	104	53	20	87	28
Total Analysis Volume [veh/h]	102	1165	75	63	690	99	295	415	211	80	350	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 major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
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	41	0	11	40	0	15	41	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	29	0	0	29	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	55	55	6	54	54	11	21	21	6	17	17
g / C, Green / Cycle	0.07	0.53	0.53	0.06	0.51	0.51	0.10	0.20	0.20	0.06	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.06	0.33	0.34	0.04	0.22	0.22	0.09	0.18	0.18	0.04	0.13	0.13
s, saturation flow rate [veh/h]	1781	1870	1831	1781	1870	1789	3459	1870	1660	1781	1870	1718
c, Capacity [veh/h]	129	981	961	102	952	911	359	383	340	109	304	279
d1, Uniform Delay [s]	47.96	17.84	17.87	48.45	16.14	16.14	46.17	40.39	40.40	48.51	42.29	42.39
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
l, 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]	10.19	3.17	3.26	6.04	1.38	1.44	4.75	5.95	6.65	9.19	4.53	5.27
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	0.79	0.64	0.64	0.62	0.42	0.42	0.82	0.87	0.87	0.73	0.79	0.80
d, Delay for Lane Group [s/veh]	58.15	21.00	21.12	54.49	17.52	17.58	50.92	46.35	47.05	57.70	46.81	47.66
Lane Group LOS	E	C	C	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]	2.86	10.09	9.94	1.71	5.64	5.42	3.84	8.46	7.58	2.26	6.04	5.71
50th-Percentile Queue Length [ft/ln]	71.52	252.26	248.60	42.65	141.02	135.43	96.12	211.52	189.49	56.41	151.07	142.64
95th-Percentile Queue Length [veh/ln]	5.15	15.30	15.12	3.07	9.54	9.23	6.92	13.23	12.09	4.06	10.07	9.62
95th-Percentile Queue Length [ft/ln]	128.73	382.50	377.88	76.77	238.40	230.85	173.02	330.78	302.36	101.54	251.86	240.58

**Movement, Approach, & Intersection Results**

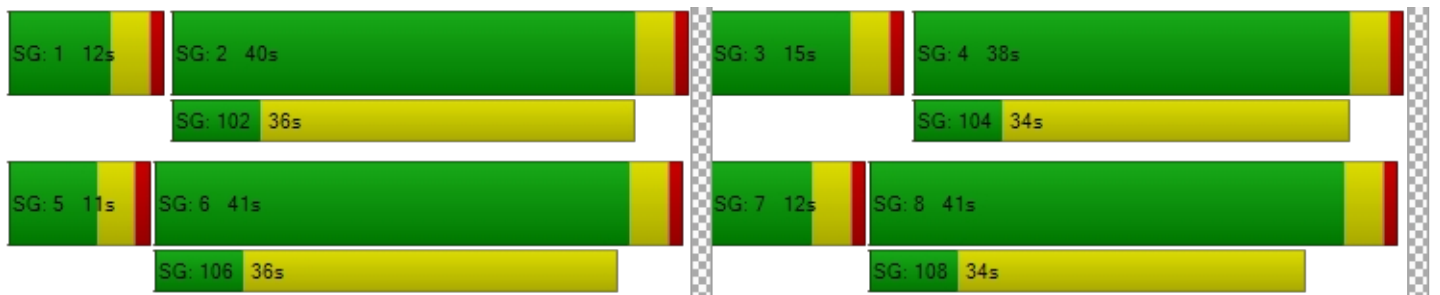
d_M, Delay for Movement [s/veh]	58.15	21.06	21.12	54.49	17.54	17.58	50.92	46.49	47.05	57.70	47.08	47.66
Movement LOS	E	C	C	D	B	B	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	23.88			20.28			48.03			48.77		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	32.81											
Intersection LOS	C											
Intersection V/C	0.700											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	42.11			42.11			42.11			42.11		
I_p,int, Pedestrian LOS Score for Intersection	3.138			3.174			2.859			2.663		
Crosswalk LOS	C			C			C			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	704			685			704			647		
d_b, Bicycle Delay [s]	22.05			22.70			22.05			24.03		
I_b,int, Bicycle LOS Score for Intersection	2.667			2.263			2.319			2.007		
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: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	All-way stop	Delay (sec / veh):	19.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.801

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↔↔		↕↔		↔↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	212	74	236	207	108	425
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]	212	74	236	207	108	425
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	57	20	63	55	29	114
Total Analysis Volume [veh/h]	227	79	253	222	116	455
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	474	562	553	621	526	568
Degree of Utilization, x	0.48	0.14	0.46	0.36	0.22	0.80

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	2.55	0.49	2.38	1.62	0.84	7.79
95th-Percentile Queue Length [ft]	63.83	12.15	59.57	40.49	20.88	194.65
Approach Delay [s/veh]	15.32		13.25		26.04	
Approach LOS	C		B		D	
Intersection Delay [s/veh]	19.12					
Intersection LOS	C					

**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	14.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	114	27	197	25	7	59	41	495	75	147	668	28
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]	114	27	197	25	7	59	41	495	75	147	668	28
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	30	7	52	7	2	16	11	130	20	39	176	7
Total Analysis Volume [veh/h]	120	28	207	26	7	62	43	521	79	155	702	29
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	602			997			192			195		
Exiting Flow Rate [veh/h]	246			102			902			769		
Demand Flow Rate [veh/h]	114	27	197	25	7	59	41	495	75	147	668	28
Adjusted Demand Flow Rate [veh/h]	120	28	207	26	7	62	43	521	79	155	702	29

**Lanes**

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.98			0.98			0.98		
Entry Flow Rate [veh/h]	363			97			656			904		
Capacity of Entry and Bypass Lanes [veh/h]	747			500			1135			1132		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	733			490			1113			1110		
X, volume / capacity	0.48			0.19			0.58			0.80		

**Movement, Approach, & Intersection Results**

Lane LOS	B			B			B			C		
95th-Percentile Queue Length [veh]	2.67			0.71			3.85			9.01		
95th-Percentile Queue Length [ft]	66.78			17.80			96.37			225.13		
Approach Delay [s/veh]	11.88			10.09			10.46			18.68		
Approach LOS	B			B			B			C		
Intersection Delay [s/veh]	14.38											
Intersection LOS	B											

**Intersection Level Of Service Report**

**Intersection 3: Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	6.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Calle Contento			Nicholas Valley Road			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]	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	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	Yes			Yes			Yes			Yes		

**Volumes**

Name	Calle Contento			Nicholas Valley Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	43	8	19	55	15	79	89	677	101	15	706	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]	43	8	19	55	15	79	89	677	101	15	706	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]	11	2	5	14	4	21	23	177	26	4	184	25
Total Analysis Volume [veh/h]	45	8	20	57	16	82	93	707	105	16	737	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]	874			814			91			149		
Exiting Flow Rate [veh/h]	140			204			881			800		
Demand Flow Rate [veh/h]	43	8	19	55	15	79	89	677	101	15	706	95
Adjusted Demand Flow Rate [veh/h]	45	8	20	57	16	82	93	707	105	16	737	99

**Lanes**

Override 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
Override 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]	75	75	84	434	490	409	461
Capacity of Entry and Bypass Lanes [veh/h]	566	678	678	1308	1308	1241	1241
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	555	664	664	1282	1282	1216	1216
X, volume / capacity	0.13	0.11	0.12	0.33	0.37	0.33	0.37

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.45	0.37	0.42	1.47	1.76	1.45	1.74
95th-Percentile Queue Length [ft]	11.28	9.22	10.51	36.74	44.07	36.32	43.53
Approach Delay [s/veh]	8.13	6.73		6.12		6.32	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	6.33						
Intersection LOS	A						

**Intersection Level Of Service Report**

**Intersection 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

Control Type:	Signalized	Delay (sec / veh):	43.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.698

**Intersection Setup**

Name	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	99	480	106	239	579	136	157	661	154	124	595	136
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]	99	480	106	239	579	136	157	661	154	124	595	136
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	123	27	61	148	35	40	169	39	32	152	35
Total Analysis Volume [veh/h]	101	491	108	245	593	139	161	677	158	127	609	139
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 major street		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing major street		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street		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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
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	40	0	23	40	0	11	43	0	14	46	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	29	0	0	29	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	45	45	18	55	55	7	31	31	10	33	33
g / C, Green / Cycle	0.07	0.38	0.38	0.15	0.46	0.46	0.06	0.25	0.25	0.08	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.06	0.16	0.17	0.14	0.20	0.20	0.05	0.23	0.23	0.07	0.21	0.21
s, saturation flow rate [veh/h]	1781	1870	1755	1781	1870	1749	3459	1870	1749	1781	1870	1751
c, Capacity [veh/h]	129	702	659	273	853	798	207	475	444	151	521	488
d1, Uniform Delay [s]	54.81	28.05	28.08	49.96	22.26	22.26	55.69	43.48	43.48	54.20	39.40	39.40
k, delay calibration	0.11	0.50	0.50	0.12	0.50	0.50	0.11	0.25	0.25	0.11	0.16	0.16
l, 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]	10.05	1.99	2.14	11.37	1.67	1.78	6.24	14.11	14.88	11.90	3.12	3.34
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	0.79	0.44	0.44	0.90	0.44	0.44	0.78	0.91	0.91	0.84	0.74	0.74
d, Delay for Lane Group [s/veh]	64.86	30.04	30.22	61.33	23.93	24.04	61.93	57.58	58.35	66.10	42.51	42.74
Lane Group LOS	E	C	C	E	C	C	E	E	E	E	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.24	6.59	6.24	7.75	7.07	6.64	2.51	13.68	12.90	4.16	10.31	9.69
50th-Percentile Queue Length [ft/ln]	81.09	164.63	156.02	193.66	176.83	166.00	62.71	342.11	322.39	103.93	257.69	242.26
95th-Percentile Queue Length [veh/ln]	5.84	10.79	10.34	12.31	11.43	10.87	4.51	19.75	18.79	7.48	15.57	14.80
95th-Percentile Queue Length [ft/ln]	145.97	269.84	258.45	307.78	285.87	271.65	112.87	493.78	469.63	187.07	389.32	369.89

**Movement, Approach, & Intersection Results**

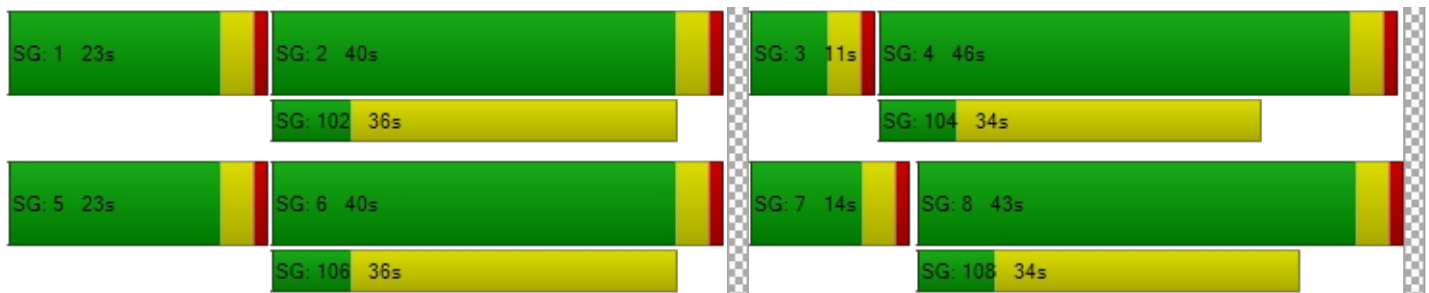
d_M, Delay for Movement [s/veh]	64.86	30.11	30.22	61.33	23.97	24.04	61.93	57.86	58.35	66.10	42.60	42.74
Movement LOS	E	C	C	E	C	C	E	E	E	E	D	D
d_A, Approach Delay [s/veh]	35.14			33.35			58.60			46.03		
Approach LOS	D			C			E			D		
d_I, Intersection Delay [s/veh]	43.92											
Intersection LOS	D											
Intersection V/C	0.698											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.54			49.54			49.54			49.54		
I_p,int, Pedestrian LOS Score for Intersection	2.878			2.946			2.966			2.933		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			650			700		
d_b, Bicycle Delay [s]	29.43			29.43			27.37			25.38		
I_b,int, Bicycle LOS Score for Intersection	2.137			2.366			2.381			2.281		
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**

Project Opening Year (2024) With Ambient Growth  
With Project Conditions  
LOS Analysis Worksheets

**Intersection Level Of Service Report**

**Intersection 1: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	All-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.550

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	273	27	97	111	41	262
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]	273	27	97	111	41	262
Peak Hour Factor	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	7	27	31	11	73
Total Analysis Volume [veh/h]	303	30	108	123	46	291
Pedestrian Volume [ped/h]	0		0		0	



**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	551	674	584	660	555	601
Degree of Utilization, x	0.55	0.04	0.18	0.19	0.08	0.48

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.31	0.14	0.67	0.68	0.27	2.64
95th-Percentile Queue Length [ft]	82.85	3.49	16.83	17.01	6.76	65.89
Approach Delay [s/veh]	16.16		9.80		13.58	
Approach LOS	C		A		B	
Intersection Delay [s/veh]	13.56					
Intersection LOS	B					

**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	7.3
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	90	10	68	6	10	16	10	241	89	122	403	4
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]	90	10	68	6	10	16	10	241	89	122	403	4
Peak Hour Factor	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790
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]	26	3	19	2	3	5	3	69	25	35	115	1
Total Analysis Volume [veh/h]	102	11	77	7	11	18	11	274	101	139	458	5
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	298			713			160			126		
Exiting Flow Rate [veh/h]	256			28			590			365		
Demand Flow Rate [veh/h]	90	10	68	6	10	16	10	241	89	122	403	4
Adjusted Demand Flow Rate [veh/h]	102	11	77	7	11	18	11	274	101	139	458	5

**Lanes**

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.98			0.98			0.98		
Entry Flow Rate [veh/h]	194			37			394			615		
Capacity of Entry and Bypass Lanes [veh/h]	1019			667			1173			1213		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	999			654			1150			1190		
X, volume / capacity	0.19			0.06			0.34			0.51		

**Movement, Approach, & Intersection Results**

Lane LOS	A			A			A			A		
95th-Percentile Queue Length [veh]	0.70			0.17			1.49			2.96		
95th-Percentile Queue Length [ft]	17.50			4.36			37.35			73.91		
Approach Delay [s/veh]	5.40			6.10			6.39			8.62		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	7.33											
Intersection LOS	A											

**Intersection Level Of Service Report**

**Intersection 3: Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)**

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			Nicholas Valley Road			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]	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	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	Yes			Yes			Yes			Yes		

**Volumes**

Name	Calle Contento			Nicholas Valley Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	30	3	17	7	5	35	18	290	47	38	503	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	17	7	5	35	18	290	47	38	503	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	5	2	1	9	5	78	13	10	135	3
Total Analysis Volume [veh/h]	32	3	18	7	5	37	19	310	50	41	539	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]	343			624			54			55		
Exiting Flow Rate [veh/h]	98			36			620			342		
Demand Flow Rate [veh/h]	30	3	17	7	5	35	18	290	47	38	503	12
Adjusted Demand Flow Rate [veh/h]	32	3	18	7	5	37	19	310	50	41	539	13

**Lanes**

Override 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
Override 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	13	38	182	205	285	321
Capacity of Entry and Bypass Lanes [veh/h]	973	805	805	1352	1352	1351	1351
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	954	789	789	1326	1326	1325	1325
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	0.15	0.46	0.53	0.79	0.93
95th-Percentile Queue Length [ft]	4.41	1.16	3.69	11.61	13.35	19.87	23.17
Approach Delay [s/veh]	4.27	4.95		3.89		4.63	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	4.37						
Intersection LOS	A						

**Intersection Level Of Service Report**

**Intersection 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

Control Type:	Signalized	Delay (sec / veh):	34.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.721

**Intersection Setup**

Name	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	164	518	68	81	865	184	99	269	178	56	371	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]	164	518	68	81	865	184	99	269	178	56	371	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]	47	147	19	23	246	52	28	76	51	16	105	18
Total Analysis Volume [veh/h]	186	589	77	92	983	209	113	306	202	64	422	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 major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
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	45	0	16	40	0	11	38	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	29	0	0	29	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	0.33	0.33	0.03	0.14	0.15	0.04	0.14	0.14
s, saturation flow rate [veh/h]	1781	1870	1795	1781	1870	1758	3459	1870	1627	1781	1870	1776
c, Capacity [veh/h]	217	1050	1008	118	946	889	216	320	279	99	307	292
d1, Uniform Delay [s]	47.38	12.93	12.93	50.62	20.00	20.06	50.03	44.17	44.30	50.94	44.45	44.51
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
l, 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]	9.26	0.82	0.85	10.57	3.42	3.70	1.96	5.94	7.44	6.91	5.48	6.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.86	0.32	0.32	0.78	0.65	0.65	0.52	0.84	0.86	0.65	0.82	0.83
d, Delay for Lane Group [s/veh]	56.64	13.74	13.78	61.19	23.42	23.76	51.99	50.12	51.74	57.84	49.92	50.53
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]	5.30	4.12	3.97	2.73	10.97	10.47	1.51	7.31	6.60	1.86	6.83	6.59
50th-Percentile Queue Length [ft/ln]	132.51	102.98	99.17	68.17	274.36	261.82	37.80	182.84	164.95	46.39	170.69	164.79
95th-Percentile Queue Length [veh/ln]	9.08	7.41	7.14	4.91	16.41	15.78	2.72	11.75	10.81	3.34	11.11	10.80
95th-Percentile Queue Length [ft/ln]	226.90	185.36	178.51	122.70	410.19	394.50	68.04	293.72	270.26	83.50	277.82	270.06

**Movement, Approach, & Intersection Results**

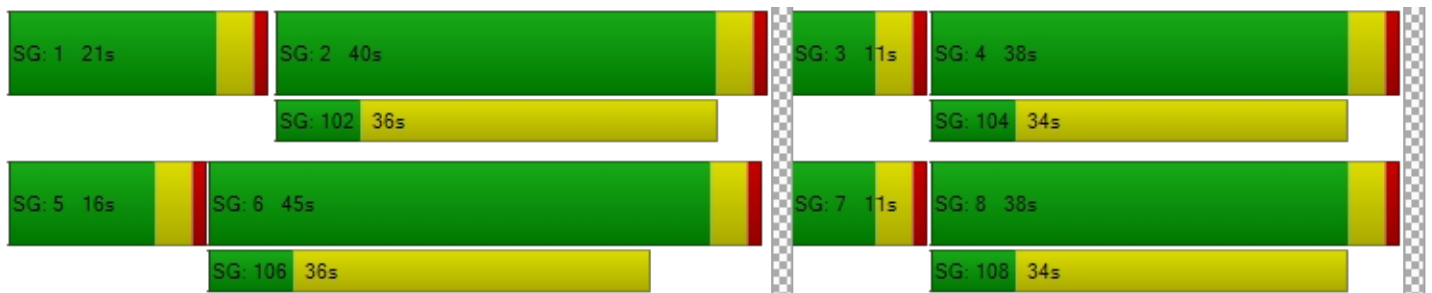
d_M, Delay for Movement [s/veh]	56.64	13.76	13.78	61.19	23.55	23.76	51.99	50.31	51.74	57.84	50.17	50.53
Movement LOS	E	B	B	E	C	C	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	23.12			26.28			51.08			51.09		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	34.30											
Intersection LOS	C											
Intersection V/C	0.721											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	44.58			44.58			44.58			44.58		
I_p,int, Pedestrian LOS Score for Intersection	3.061			3.046			2.852			2.645		
Crosswalk LOS	C			C			C			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	745			654			618			618		
d_b, Bicycle Delay [s]	21.66			24.91			26.28			26.28		
I_b,int, Bicycle LOS Score for Intersection	2.263			2.619			2.072			2.021		
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 5: Glen Oaks Road (NS) at Project Site Access (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

**Intersection Setup**

Name	Glen Oaks Road		Glen Oaks Road		Project 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]	55.00		55.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Glen Oaks Road		Project Site Access	
Base Volume Input [veh/h]	297	0	11	140	0	3
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]	297	0	11	140	0	3
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]	78	0	3	37	0	1
Total Analysis Volume [veh/h]	313	0	12	147	0	3
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	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.91	0.00	11.74	9.97
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.03	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.73	0.73	0.31	0.31
d_A, Approach Delay [s/veh]	0.00		0.60		9.97	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.26					
Intersection LOS	A					

**Intersection Level Of Service Report**

**Intersection 1: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	All-way stop	Delay (sec / veh):	11.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.493

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↔↔		↕↔		↔↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	165	59	304	219	45	138
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]	165	59	304	219	45	138
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	15	80	58	12	36
Total Analysis Volume [veh/h]	173	62	319	230	47	145
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	533	648	647	741	558	605
Degree of Utilization, x	0.32	0.10	0.49	0.31	0.08	0.24

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.40	0.32	2.74	1.32	0.27	0.93
95th-Percentile Queue Length [ft]	34.96	7.90	68.39	33.08	6.87	23.24
Approach Delay [s/veh]	11.66		11.95		10.32	
Approach LOS	B		B		B	
Intersection Delay [s/veh]	11.56					
Intersection LOS	B					

**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	8.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	79	19	184	8	11	29	30	402	77	99	394	8
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	19	184	8	11	29	30	402	77	99	394	8
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]	21	5	49	2	3	8	8	108	21	26	105	2
Total Analysis Volume [veh/h]	85	20	197	9	12	31	32	430	82	106	422	9
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	480			625			130			140		
Exiting Flow Rate [veh/h]	204			62			549			649		
Demand Flow Rate [veh/h]	79	19	184	8	11	29	30	402	77	99	394	8
Adjusted Demand Flow Rate [veh/h]	85	20	197	9	12	31	32	430	82	106	422	9

**Lanes**

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.98			0.98			0.98		
Entry Flow Rate [veh/h]	309			54			555			548		
Capacity of Entry and Bypass Lanes [veh/h]	846			730			1210			1197		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	829			715			1186			1174		
X, volume / capacity	0.36			0.07			0.46			0.46		

**Movement, Approach, & Intersection Results**

Lane LOS	A			A			A			A		
95th-Percentile Queue Length [veh]	1.68			0.23			2.47			2.46		
95th-Percentile Queue Length [ft]	41.93			5.87			61.70			61.41		
Approach Delay [s/veh]	8.63			5.79			7.88			7.92		
Approach LOS	A			A			A			A		
Intersection Delay [s/veh]	7.98											
Intersection LOS	A											



**Intersection Level Of Service Report**

**Intersection 3: Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)**

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			Nicholas Valley Road			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]	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	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	Yes			Yes			Yes			Yes		

**Volumes**

Name	Calle Contento			Nicholas Valley Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	31	9	12	13	8	37	33	481	57	18	411	15
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	12	13	8	37	33	481	57	18	411	15
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	4	4	2	11	10	140	17	5	120	4
Total Analysis Volume [veh/h]	36	11	14	15	9	43	39	562	67	21	480	18
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	628			548			46			88		
Exiting Flow Rate [veh/h]	99			69			570			603		
Demand Flow Rate [veh/h]	31	9	12	13	8	37	33	481	57	18	411	15
Adjusted Demand Flow Rate [veh/h]	36	11	14	15	9	43	39	562	67	21	480	18

**Lanes**

Override 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
Override 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]	63	25	44	321	362	249	281
Capacity of Entry and Bypass Lanes [veh/h]	728	863	863	1362	1362	1312	1312
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	713	846	846	1336	1336	1286	1286
X, volume / capacity	0.09	0.03	0.05	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]	0.28	0.09	0.16	0.92	1.07	0.70	0.81
95th-Percentile Queue Length [ft]	7.00	2.19	4.01	22.89	26.83	17.47	20.29
Approach Delay [s/veh]	5.95	4.66		4.85		4.52	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	4.77						
Intersection LOS	A						

**Intersection Level Of Service Report**

**Intersection 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

Control Type:	Signalized	Delay (sec / veh):	33.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.707

**Intersection Setup**

Name	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	96	1093	73	62	647	93	277	394	198	78	334	108
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]	96	1093	73	62	647	93	277	394	198	78	334	108
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
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]	26	291	19	17	172	25	74	105	53	21	89	29
Total Analysis Volume [veh/h]	102	1165	78	66	690	99	295	420	211	83	356	115
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 major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
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	41	0	11	40	0	15	41	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	29	0	0	29	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	55	55	6	53	53	11	22	22	6	17	17
g / C, Green / Cycle	0.07	0.52	0.52	0.06	0.51	0.51	0.10	0.21	0.21	0.06	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.06	0.34	0.34	0.04	0.22	0.22	0.09	0.18	0.18	0.05	0.13	0.13
s, saturation flow rate [veh/h]	1781	1870	1829	1781	1870	1789	3459	1870	1662	1781	1870	1717
c, Capacity [veh/h]	129	976	955	103	949	908	359	386	343	110	307	282
d1, Uniform Delay [s]	47.96	18.07	18.10	48.44	16.26	16.26	46.17	40.32	40.32	48.54	42.22	42.32
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
l, 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]	10.19	3.25	3.35	6.44	1.39	1.46	4.75	5.95	6.64	10.04	4.64	5.40
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	0.79	0.64	0.64	0.64	0.42	0.43	0.82	0.87	0.87	0.76	0.79	0.81
d, Delay for Lane Group [s/veh]	58.15	21.32	21.45	54.89	17.65	17.72	50.92	46.27	46.96	58.58	46.86	47.72
Lane Group LOS	E	C	C	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]	2.86	10.22	10.07	1.79	5.67	5.45	3.84	8.52	7.64	2.36	6.17	5.82
50th-Percentile Queue Length [ft/ln]	71.52	255.60	251.78	44.86	141.80	136.17	96.12	213.01	190.97	59.03	154.33	145.52
95th-Percentile Queue Length [veh/ln]	5.15	15.47	15.28	3.23	9.58	9.27	6.92	13.31	12.17	4.25	10.25	9.78
95th-Percentile Queue Length [ft/ln]	128.73	386.69	381.89	80.75	239.45	231.85	173.02	332.69	304.29	106.26	256.20	244.44

**Movement, Approach, & Intersection Results**

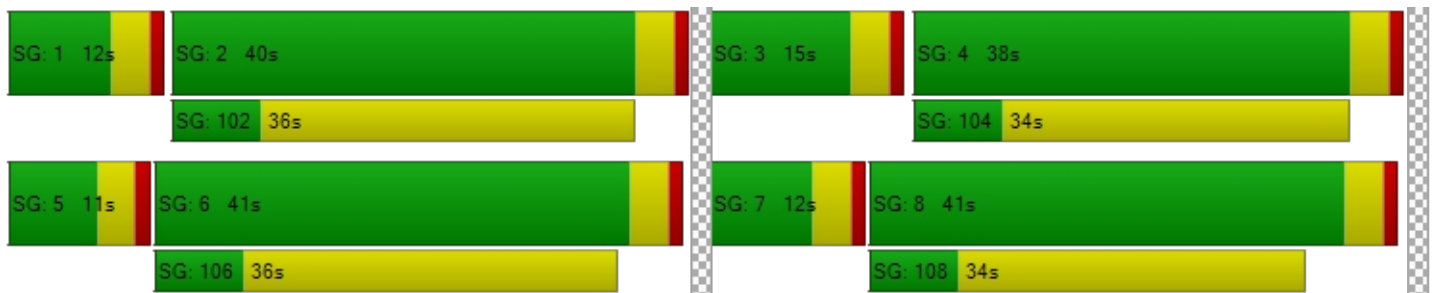
d_M, Delay for Movement [s/veh]	58.15	21.38	21.45	54.89	17.68	17.72	50.92	46.41	46.96	58.58	47.13	47.72
Movement LOS	E	C	C	D	B	B	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	24.18			20.56			47.97			48.97		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	33.06											
Intersection LOS	C											
Intersection V/C	0.707											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	42.11			42.11			42.11			42.11		
I_p,int, Pedestrian LOS Score for Intersection	3.140			3.176			2.862			2.670		
Crosswalk LOS	C			C			C			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	704			685			704			647		
d_b, Bicycle Delay [s]	22.05			22.70			22.05			24.03		
I_b,int, Bicycle LOS Score for Intersection	2.669			2.265			2.324			2.017		
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 5: Glen Oaks Road (NS) at Project Site Access (EW)**

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):	0.025

**Intersection Setup**

Name	Glen Oaks Road		Glen Oaks Road		Project 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]	55.00		55.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Glen Oaks Road		Project Site Access	
Base Volume Input [veh/h]	204	0	17	246	0	20
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]	204	0	17	246	0	20
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]	54	0	4	65	0	5
Total Analysis Volume [veh/h]	215	0	18	259	0	21
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	0.00	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	7.69	0.00	12.10	9.48
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.04	0.04	0.08	0.08
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.01	1.01	1.96	1.96
d_A, Approach Delay [s/veh]	0.00		0.50		9.48	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.66					
Intersection LOS	A					

**Intersection Level Of Service Report**

**Intersection 1: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	All-way stop	Delay (sec / veh):	25.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.880

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↔↔		↕↔		↔↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	291	83	236	276	116	425
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]	291	83	236	276	116	425
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	78	22	63	74	31	114
Total Analysis Volume [veh/h]	312	89	253	296	124	455
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	454	537	508	565	482	517
Degree of Utilization, x	0.69	0.17	0.50	0.52	0.26	0.88

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	5.11	0.59	2.75	3.03	1.02	9.76
95th-Percentile Queue Length [ft]	127.78	14.77	68.65	75.84	25.43	243.92
Approach Delay [s/veh]	22.83		16.24		35.55	
Approach LOS	C		C		E	
Intersection Delay [s/veh]	25.28					
Intersection LOS	D					

**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	18.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	114	27	205	25	7	59	41	557	75	156	738	28
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]	114	27	205	25	7	59	41	557	75	156	738	28
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	30	7	54	7	2	16	11	146	20	41	194	7
Total Analysis Volume [veh/h]	120	28	216	26	7	62	43	586	79	164	776	29
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	668			1081			201			195		
Exiting Flow Rate [veh/h]	255			102			977			845		
Demand Flow Rate [veh/h]	114	27	205	25	7	59	41	557	75	156	738	28
Adjusted Demand Flow Rate [veh/h]	120	28	216	26	7	62	43	586	79	164	776	29

**Lanes**

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	372	97	723	989
Capacity of Entry and Bypass Lanes [veh/h]	699	459	1125	1132
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	685	450	1103	1110
X, volume / capacity	0.53	0.21	0.64	0.87

**Movement, Approach, & Intersection Results**

Lane LOS	B	B	B	C
95th-Percentile Queue Length [veh]	3.16	0.79	4.90	12.22
95th-Percentile Queue Length [ft]	78.97	19.77	122.51	305.51
Approach Delay [s/veh]	13.73	11.21	12.14	24.84
Approach LOS	B	B	B	C
Intersection Delay [s/veh]	18.13			
Intersection LOS	C			

**Intersection Level Of Service Report**

**Intersection 3: Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	6.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Calle Contento			Nicholas Valley Road			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]	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	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	Yes			Yes			Yes			Yes		

**Volumes**

Name	Calle Contento			Nicholas Valley Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	43	8	31	59	15	79	89	723	101	28	759	99
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]	43	8	31	59	15	79	89	723	101	28	759	99
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	8	15	4	21	23	189	26	7	198	26
Total Analysis Volume [veh/h]	45	8	32	62	16	82	93	755	105	29	792	103
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	928			883			109			149		
Exiting Flow Rate [veh/h]	153			208			937			866		
Demand Flow Rate [veh/h]	43	8	31	59	15	79	89	723	101	28	759	99
Adjusted Demand Flow Rate [veh/h]	45	8	32	62	16	82	93	755	105	29	792	103

**Lanes**

Override 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
Override 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]	87	80	84	457	516	443	500
Capacity of Entry and Bypass Lanes [veh/h]	536	636	636	1286	1286	1241	1241
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	525	624	624	1261	1261	1216	1216
X, volume / capacity	0.16	0.13	0.13	0.36	0.40	0.36	0.40

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.57	0.43	0.45	1.63	1.96	1.64	1.98
95th-Percentile Queue Length [ft]	14.34	10.66	11.29	40.69	49.12	40.99	49.51
Approach Delay [s/veh]	8.99	7.27		6.49		6.69	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	6.74						
Intersection LOS	A						

**Intersection Level Of Service Report**

**Intersection 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

Control Type:	Signalized	Delay (sec / veh):	45.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.726

**Intersection Setup**

Name	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		



**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	99	480	118	251	579	136	157	684	154	137	621	149
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]	99	480	118	251	579	136	157	684	154	137	621	149
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	123	30	64	148	35	40	175	39	35	159	38
Total Analysis Volume [veh/h]	101	491	121	257	593	139	161	700	158	140	636	153
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 major street		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing major street		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street		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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
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	40	0	23	40	0	11	43	0	14	46	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	29	0	0	29	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	44	44	19	54	54	7	31	31	10	34	34
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	0.14	0.20	0.20	0.05	0.24	0.24	0.08	0.22	0.22
s, saturation flow rate [veh/h]	1781	1870	1744	1781	1870	1749	3459	1870	1752	1781	1870	1746
c, Capacity [veh/h]	129	680	635	283	843	788	207	485	455	151	532	496
d1, Uniform Delay [s]	54.81	29.25	29.28	49.66	22.73	22.73	55.69	43.15	43.16	54.63	39.35	39.35
k, delay calibration	0.11	0.50	0.50	0.14	0.50	0.50	0.11	0.26	0.26	0.11	0.19	0.19
l, 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]	10.05	2.27	2.46	13.38	1.73	1.85	6.24	14.86	15.66	20.67	4.02	4.30
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	0.79	0.46	0.47	0.91	0.45	0.45	0.78	0.91	0.91	0.93	0.77	0.77
d, Delay for Lane Group [s/veh]	64.86	31.52	31.73	63.04	24.46	24.58	61.93	58.02	58.81	75.30	43.37	43.65
Lane Group LOS	E	C	C	E	C	C	E	E	E	E	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.24	6.96	6.56	8.27	7.18	6.74	2.51	14.13	13.34	4.93	11.06	10.37
50th-Percentile Queue Length [ft/ln]	81.09	174.03	164.02	206.81	179.39	168.41	62.71	353.17	333.49	123.26	276.51	259.21
95th-Percentile Queue Length [veh/ln]	5.84	11.29	10.76	12.99	11.57	10.99	4.51	20.29	19.33	8.57	16.51	15.65
95th-Percentile Queue Length [ft/ln]	145.97	282.20	269.03	324.73	289.22	274.82	112.87	507.27	483.24	214.30	412.86	391.23

**Movement, Approach, & Intersection Results**

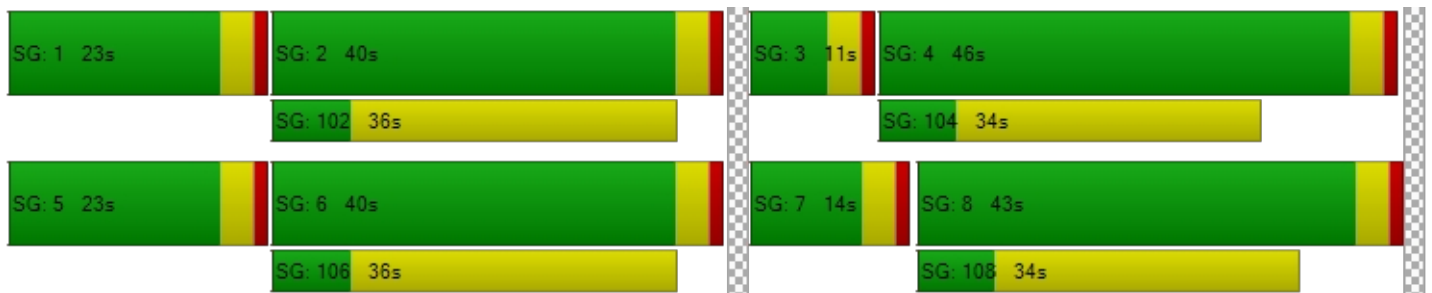
d_M, Delay for Movement [s/veh]	64.86	31.59	31.73	63.04	24.50	24.58	61.93	58.31	58.81	75.30	43.47	43.65
Movement LOS	E	C	C	E	C	C	E	E	E	E	D	D
d_A, Approach Delay [s/veh]	36.33			34.53			58.96			48.30		
Approach LOS	D			C			E			D		
d_I, Intersection Delay [s/veh]	45.21											
Intersection LOS	D											
Intersection V/C	0.726											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.54			49.54			49.54			49.54		
I_p,int, Pedestrian LOS Score for Intersection	2.887			2.955			2.980			2.966		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			650			700		
d_b, Bicycle Delay [s]	29.43			29.43			27.37			25.38		
I_b,int, Bicycle LOS Score for Intersection	2.148			2.376			2.400			2.326		
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 5: Glen Oaks Road (NS) at Project Site Access (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	10.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.126

**Intersection Setup**

Name	Glen Oaks Road		Glen Oaks Road		Project 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]	55.00		55.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Glen Oaks Road		Project Site Access	
Base Volume Input [veh/h]	286	0	77	315	0	88
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]	286	0	77	315	0	88
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]	75	0	20	83	0	23
Total Analysis Volume [veh/h]	301	0	81	332	0	93
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	0.06	0.00	0.00	0.13
d_M, Delay for Movement [s/veh]	0.00	0.00	8.05	0.00	16.66	10.57
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.21	0.21	0.43	0.43
95th-Percentile Queue Length [ft/ln]	0.00	0.00	5.15	5.15	10.75	10.75
d_A, Approach Delay [s/veh]	0.00		1.58		10.57	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	2.03					
Intersection LOS	B					

## **Appendix E**

Project Opening Year (2024) With Ambient Growth & Cumulative Projects  
Without Project Conditions  
LOS Analysis Worksheets

**Intersection Level Of Service Report**

**Intersection 1: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	All-way stop	Delay (sec / veh):	16.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.645

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↵		↵↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	273	32	177	109	60	335
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]	273	32	177	109	60	335
Peak Hour Factor	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	76	9	49	30	17	93
Total Analysis Volume [veh/h]	303	36	196	121	67	372
Pedestrian Volume [ped/h]	0		0		0	



**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	512	617	558	628	534	577
Degree of Utilization, x	0.59	0.06	0.35	0.19	0.13	0.64

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.80	0.19	1.57	0.71	0.43	4.62
95th-Percentile Queue Length [ft]	95.07	4.64	39.24	17.72	10.69	115.41
Approach Delay [s/veh]	18.32		11.53		18.17	
Approach LOS	C		B		C	
Intersection Delay [s/veh]	16.30					
Intersection LOS	C					

**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	8.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	92	10	89	6	10	16	10	320	89	156	449	4
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]	92	10	89	6	10	16	10	320	89	156	449	4
Peak Hour Factor	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790
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]	26	3	25	2	3	5	3	91	25	44	128	1
Total Analysis Volume [veh/h]	105	11	101	7	11	18	11	364	101	177	511	5
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	390			809			199			130		
Exiting Flow Rate [veh/h]	295			28			647			481		
Demand Flow Rate [veh/h]	92	10	89	6	10	16	10	320	89	156	449	4
Adjusted Demand Flow Rate [veh/h]	105	11	101	7	11	18	11	364	101	177	511	5

**Lanes**

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.98			0.98			0.98		
Entry Flow Rate [veh/h]	222			37			486			707		
Capacity of Entry and Bypass Lanes [veh/h]	928			605			1127			1210		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	910			593			1105			1186		
X, volume / capacity	0.24			0.06			0.43			0.58		

**Movement, Approach, & Intersection Results**

Lane LOS	A			A			A			B		
95th-Percentile Queue Length [veh]	0.93			0.19			2.21			3.97		
95th-Percentile Queue Length [ft]	23.26			4.83			55.25			99.15		
Approach Delay [s/veh]	6.39			6.77			7.86			10.14		
Approach LOS	A			A			A			B		
Intersection Delay [s/veh]	8.72											
Intersection LOS	A											

**Intersection Level Of Service Report**

**Intersection 3: Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)**

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			Nicholas Valley Road			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]	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	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	Yes			Yes			Yes			Yes		

**Volumes**

Name	Calle Contento			Nicholas Valley Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	30	6	15	7	6	39	29	370	47	38	547	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	15	7	6	39	29	370	47	38	547	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	8	99	13	10	146	4
Total Analysis Volume [veh/h]	32	6	16	7	6	42	31	396	50	41	586	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]	443			672			55			70		
Exiting Flow Rate [veh/h]	99			55			673			427		
Demand Flow Rate [veh/h]	30	6	15	7	6	39	29	370	47	38	547	16
Adjusted Demand Flow Rate [veh/h]	32	6	16	7	6	42	31	396	50	41	586	17

**Lanes**

Override 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
Override 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]	56	14	43	229	258	309	349
Capacity of Entry and Bypass Lanes [veh/h]	879	771	771	1351	1351	1332	1332
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	862	756	756	1325	1325	1306	1306
X, volume / capacity	0.06	0.02	0.06	0.17	0.19	0.23	0.26

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.20	0.05	0.18	0.61	0.70	0.90	1.05
95th-Percentile Queue Length [ft]	5.01	1.31	4.41	15.22	17.61	22.47	26.31
Approach Delay [s/veh]	4.77	5.23		4.22		4.90	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	4.65						
Intersection LOS	A						

**Intersection Level Of Service Report**

**Intersection 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

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):	0.741

**Intersection Setup**

Name	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	164	518	75	108	865	184	99	328	178	62	403	73
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]	164	518	75	108	865	184	99	328	178	62	403	73
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]	47	147	21	31	246	52	28	93	51	18	114	21
Total Analysis Volume [veh/h]	186	589	85	123	983	209	113	373	202	70	458	83
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing major street		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street		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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
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]	18	40	0	25	47	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	29	0	0	29	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]	14	61	61	10	57	57	7	22	22	6	21	21
g / C, Green / Cycle	0.12	0.53	0.53	0.09	0.50	0.50	0.06	0.19	0.19	0.05	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.10	0.18	0.18	0.07	0.33	0.33	0.03	0.16	0.16	0.04	0.15	0.15
s, saturation flow rate [veh/h]	1781	1870	1789	1781	1870	1758	3459	1870	1653	1781	1870	1772
c, Capacity [veh/h]	214	995	952	152	930	875	207	352	311	98	343	325
d1, Uniform Delay [s]	49.72	15.44	15.44	51.68	21.61	21.69	52.56	45.30	45.39	53.47	45.06	45.11
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
l, 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]	10.17	0.95	1.00	9.59	3.64	3.95	2.22	6.37	7.73	9.14	4.54	4.95
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	0.35	0.35	0.81	0.66	0.66	0.54	0.86	0.87	0.71	0.81	0.81
d, Delay for Lane Group [s/veh]	59.88	16.39	16.44	61.27	25.25	25.64	54.78	51.67	53.11	62.60	49.59	50.06
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]	5.61	4.87	4.67	3.74	11.88	11.35	1.60	8.66	7.86	2.17	7.68	7.37
50th-Percentile Queue Length [ft/ln]	140.26	121.66	116.74	93.42	296.88	283.85	39.94	216.50	196.41	54.35	192.04	184.35
95th-Percentile Queue Length [veh/ln]	9.49	8.48	8.21	6.73	17.53	16.88	2.88	13.49	12.45	3.91	12.23	11.83
95th-Percentile Queue Length [ft/ln]	237.37	212.11	205.34	168.16	438.17	422.00	71.89	337.15	311.34	97.83	305.68	295.69

**Movement, Approach, & Intersection Results**

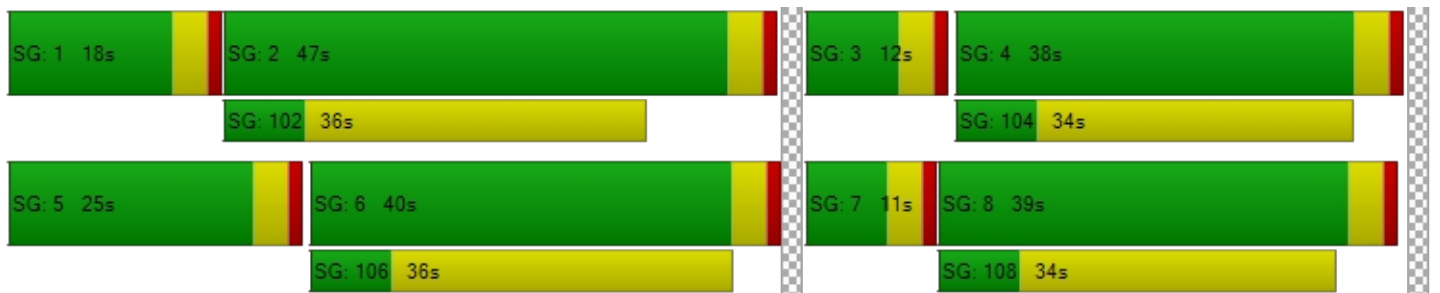
d_M, Delay for Movement [s/veh]	59.88	16.41	16.44	61.27	25.39	25.64	54.78	51.94	53.11	62.60	49.78	50.06
Movement LOS	E	B	B	E	C	C	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	25.82			28.79			52.75			51.29		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	36.75											
Intersection LOS	D											
Intersection V/C	0.741											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	47.05			47.05			47.05			47.05		
I_p,int, Pedestrian LOS Score for Intersection	3.068			3.062			2.882			2.699		
Crosswalk LOS	C			C			C			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	626			748			608			591		
d_b, Bicycle Delay [s]	27.15			22.56			27.84			28.54		
I_b,int, Bicycle LOS Score for Intersection	2.269			2.644			2.127			2.064		
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: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	All-way stop	Delay (sec / veh):	15.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.686

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↔↔		↕↔		↔↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	167	88	396	223	69	244
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]	167	88	396	223	69	244
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	44	23	104	59	18	64
Total Analysis Volume [veh/h]	175	92	416	234	72	256
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	490	587	607	689	529	572
Degree of Utilization, x	0.36	0.16	0.69	0.34	0.14	0.45

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.60	0.55	5.35	1.50	0.47	2.29
95th-Percentile Queue Length [ft]	40.01	13.83	133.65	37.59	11.70	57.36
Approach Delay [s/veh]	12.66		16.98		13.23	
Approach LOS	B		C		B	
Intersection Delay [s/veh]	15.06					
Intersection LOS	C					

**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	80	19	236	8	11	29	30	480	79	140	499	8
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]	80	19	236	8	11	29	30	480	79	140	499	8
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]	21	5	63	2	3	8	8	128	21	37	134	2
Total Analysis Volume [veh/h]	86	20	253	9	12	31	32	514	85	150	534	9
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	566			785			174			141		
Exiting Flow Rate [veh/h]	252			62			664			792		
Demand Flow Rate [veh/h]	80	19	236	8	11	29	30	480	79	140	499	8
Adjusted Demand Flow Rate [veh/h]	86	20	253	9	12	31	32	514	85	150	534	9

**Lanes**

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.98			0.98			0.98		
Entry Flow Rate [veh/h]	367			54			644			707		
Capacity of Entry and Bypass Lanes [veh/h]	775			620			1156			1196		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	760			608			1133			1172		
X, volume / capacity	0.47			0.09			0.56			0.59		

**Movement, Approach, & Intersection Results**

Lane LOS	B			A			A			B		
95th-Percentile Queue Length [veh]	2.56			0.28			3.57			4.06		
95th-Percentile Queue Length [ft]	63.96			7.00			89.29			101.61		
Approach Delay [s/veh]	11.28			6.91			9.89			10.37		
Approach LOS	B			A			A			B		
Intersection Delay [s/veh]	10.28											
Intersection LOS	B											

**Intersection Level Of Service Report**

**Intersection 3: Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)**

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			Nicholas Valley Road			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]	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	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	Yes			Yes			Yes			Yes		

**Volumes**

Name	Calle Contento			Nicholas Valley Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	31	14	9	20	14	60	54	557	57	15	514	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]	31	14	9	20	14	60	54	557	57	15	514	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]	9	4	3	6	4	18	16	163	17	4	150	6
Total Analysis Volume [veh/h]	36	16	11	23	16	70	63	651	67	18	600	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]	752			667			58			117		
Exiting Flow Rate [veh/h]	103			106			720			699		
Demand Flow Rate [veh/h]	31	14	9	20	14	60	54	557	57	15	514	21
Adjusted Demand Flow Rate [veh/h]	36	16	11	23	16	70	63	651	67	18	600	25

**Lanes**

Override 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
Override 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	375	423	309	348
Capacity of Entry and Bypass Lanes [veh/h]	642	774	774	1347	1347	1277	1277
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	629	759	759	1321	1321	1252	1252
X, volume / capacity	0.10	0.05	0.09	0.28	0.31	0.24	0.27

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.33	0.16	0.30	1.14	1.35	0.95	1.11
95th-Percentile Queue Length [ft]	8.32	4.06	7.60	28.60	33.84	23.69	27.80
Approach Delay [s/veh]	6.87	5.53		5.36		5.17	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	5.35						
Intersection LOS	A						



**Intersection Level Of Service Report**

**Intersection 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

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):	0.757

**Intersection Setup**

Name	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
	96	1093	88	80	647	93	277	455	198	94	413	141
Base Volume Input [veh/h]	96	1093	88	80	647	93	277	455	198	94	413	141
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]	96	1093	88	80	647	93	277	455	198	94	413	141
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
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]	26	291	23	21	172	25	74	121	53	25	110	38
Total Analysis Volume [veh/h]	102	1165	94	85	690	99	295	485	211	100	440	150
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 major street	0		0			0			0			
v_di, Inbound Pedestrian Volume crossing major street	0		0			0			0			
v_co, Outbound Pedestrian Volume crossing minor street	0		0			0			0			
v_ci, Inbound Pedestrian Volume crossing minor street	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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
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	40	0	11	40	0	16	43	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	29	0	0	29	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	52	52	6	51	51	11	24	24	7	20	20
g / C, Green / Cycle	0.07	0.49	0.49	0.06	0.48	0.48	0.10	0.23	0.23	0.07	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.06	0.34	0.34	0.05	0.22	0.22	0.09	0.20	0.20	0.06	0.16	0.17
s, saturation flow rate [veh/h]	1781	1870	1821	1781	1870	1789	3459	1870	1680	1781	1870	1710
c, Capacity [veh/h]	120	915	891	110	905	865	361	428	385	120	359	328
d1, Uniform Delay [s]	48.49	20.79	20.83	48.56	17.86	17.86	46.08	38.85	38.85	48.43	41.05	41.11
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
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.94	4.36	4.53	10.67	1.59	1.66	4.53	5.16	5.70	13.63	5.86	6.64
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	0.70	0.70	0.77	0.45	0.45	0.82	0.86	0.86	0.83	0.86	0.86
d, Delay for Lane Group [s/veh]	63.43	25.15	25.36	59.24	19.45	19.52	50.61	44.01	44.55	62.06	46.91	47.75
Lane Group LOS	E	C	C	E	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]	3.01	11.58	11.39	2.41	6.06	5.82	3.83	9.15	8.28	2.94	7.86	7.32
50th-Percentile Queue Length [ft/ln]	75.23	289.53	284.68	60.33	151.51	145.47	95.80	228.69	206.92	73.44	196.46	182.89
95th-Percentile Queue Length [veh/ln]	5.42	17.16	16.92	4.34	10.10	9.77	6.90	14.11	13.00	5.29	12.46	11.75
95th-Percentile Queue Length [ft/ln]	135.42	429.06	423.04	108.59	252.45	244.37	172.44	352.70	324.88	132.19	311.40	293.79

**Movement, Approach, & Intersection Results**

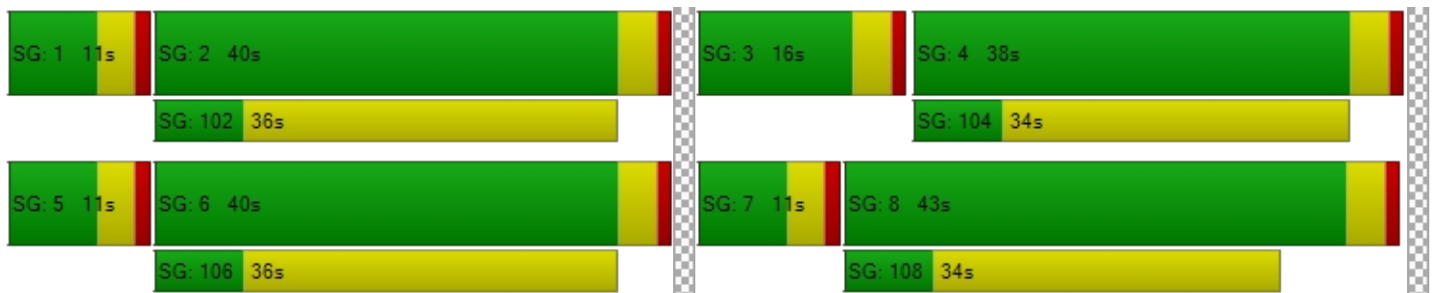
d_M, Delay for Movement [s/veh]	63.43	25.25	25.36	59.24	19.48	19.52	50.61	44.14	44.55	62.06	47.17	47.75
Movement LOS	E	C	C	E	B	B	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	28.12			23.35			46.16			49.45		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	35.38											
Intersection LOS	D											
Intersection V/C	0.757											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	42.11			42.11			42.11			42.11		
I_p,int, Pedestrian LOS Score for Intersection	3.152			3.195			2.902			2.747		
Crosswalk LOS	C			C			C			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	685			685			742			647		
d_b, Bicycle Delay [s]	22.70			22.70			20.77			24.03		
I_b,int, Bicycle LOS Score for Intersection	2.682			2.281			2.377			2.129		
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: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	All-way stop	Delay (sec / veh):	67.5
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.270

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↵↵		↵↵	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	313	162	384	296	191	557
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]	313	162	384	296	191	557
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	84	43	103	79	51	149
Total Analysis Volume [veh/h]	335	173	411	317	204	596
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	428	498	476	525	440	596
Degree of Utilization, x	0.78	0.35	0.86	0.60	0.46	1.27

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	6.84	1.54	9.00	3.97	2.40	24.85
95th-Percentile Queue Length [ft]	170.94	38.53	225.02	99.36	60.03	621.24
Approach Delay [s/veh]	28.14		32.12		124.58	
Approach LOS	D		D		F	
Intersection Delay [s/veh]	67.46					
Intersection LOS	F					

**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	59.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	116	27	308	25	7	59	41	726	77	263	912	28
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]	116	27	308	25	7	59	41	726	77	263	912	28
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	30	7	81	7	2	16	11	191	20	69	240	7
Total Analysis Volume [veh/h]	122	28	324	26	7	62	43	763	81	277	959	29
Pedestrian Volume [ped/h]	0			0			0			0		



**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	849			1385			316			197		
Exiting Flow Rate [veh/h]	372			102			1166			1135		
Demand Flow Rate [veh/h]	116	27	308	25	7	59	41	726	77	263	912	28
Adjusted Demand Flow Rate [veh/h]	122	28	324	26	7	62	43	763	81	277	959	29

**Lanes**

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.98			0.98			0.98		
Entry Flow Rate [veh/h]	484			97			905			1291		
Capacity of Entry and Bypass Lanes [veh/h]	581			336			1000			1129		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	570			330			980			1107		
X, volume / capacity	0.83			0.29			0.91			1.14		

**Movement, Approach, & Intersection Results**

Lane LOS	D			C			D			F		
95th-Percentile Queue Length [veh]	8.65			1.17			13.33			33.81		
95th-Percentile Queue Length [ft]	216.14			29.23			333.28			845.15		
Approach Delay [s/veh]	34.37			16.74			31.04			92.44		
Approach LOS	D			C			D			F		
Intersection Delay [s/veh]	59.66											
Intersection LOS	F											

**Intersection Level Of Service Report**

**Intersection 3: Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Calle Contento			Nicholas Valley Road			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]	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	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	Yes			Yes			Yes			Yes		

**Volumes**

Name	Calle Contento			Nicholas Valley Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	43	32	19	90	41	185	183	875	101	15	921	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]	43	32	19	90	41	185	183	875	101	15	921	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]	11	8	5	23	11	48	48	228	26	4	240	33
Total Analysis Volume [veh/h]	45	33	20	94	43	193	191	913	105	16	961	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]	1222			1042			156			274		
Exiting Flow Rate [veh/h]	167			363			1223			1048		
Demand Flow Rate [veh/h]	43	32	19	90	41	185	183	875	101	15	921	126
Adjusted Demand Flow Rate [veh/h]	45	33	20	94	43	193	191	913	105	16	961	132

**Lanes**

Override 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
Override 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]	100	140	197	580	654	532	600
Capacity of Entry and Bypass Lanes [veh/h]	397	550	550	1233	1233	1107	1107
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	390	540	540	1208	1208	1085	1085
X, volume / capacity	0.25	0.25	0.36	0.47	0.53	0.48	0.54

**Movement, Approach, & Intersection Results**

Lane LOS	B	B	B	A	A	A	A
95th-Percentile Queue Length [veh]	0.98	1.00	1.61	2.58	3.24	2.67	3.37
95th-Percentile Queue Length [ft]	24.59	25.05	40.31	64.55	81.04	66.86	84.17
Approach Delay [s/veh]	13.60	11.34		8.48		9.35	
Approach LOS	B	B		A		A	
Intersection Delay [s/veh]	9.36						
Intersection LOS	A						

**Intersection Level Of Service Report**

**Intersection 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

Control Type:	Signalized	Delay (sec / veh):	56.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.858

**Intersection Setup**

Name	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	99	480	167	301	579	136	157	828	154	190	778	203
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]	99	480	167	301	579	136	157	828	154	190	778	203
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	123	43	77	148	35	40	212	39	49	199	52
Total Analysis Volume [veh/h]	101	491	171	308	593	139	161	847	158	194	796	208
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 major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
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]	25	40	0	25	40	0	11	37	0	18	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	29	0	0	29	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	36	36	21	49	49	7	33	33	14	40	40
g / C, Green / Cycle	0.07	0.30	0.30	0.18	0.40	0.40	0.06	0.27	0.27	0.12	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.06	0.18	0.19	0.17	0.20	0.20	0.05	0.28	0.28	0.11	0.28	0.28
s, saturation flow rate [veh/h]	1781	1870	1707	1781	1870	1749	3459	1870	1769	1781	1870	1738
c, Capacity [veh/h]	127	563	514	312	757	708	202	512	484	208	621	577
d1, Uniform Delay [s]	54.88	35.94	35.98	49.38	26.62	26.62	55.79	43.58	43.58	52.54	37.06	37.12
k, delay calibration	0.11	0.50	0.50	0.22	0.50	0.50	0.11	0.46	0.46	0.11	0.34	0.34
l, 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]	10.80	4.93	5.44	31.38	2.35	2.51	7.01	40.00	41.69	16.78	8.95	9.80
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	0.61	0.62	0.99	0.50	0.50	0.80	1.01	1.01	0.93	0.84	0.84
d, Delay for Lane Group [s/veh]	65.69	40.87	41.42	80.76	28.97	29.13	62.80	83.57	85.26	69.32	46.01	46.92
Lane Group LOS	E	D	D	F	C	C	E	F	F	E	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.27	8.94	8.28	11.46	8.00	7.51	2.53	20.07	19.21	6.55	14.81	13.97
50th-Percentile Queue Length [ft/ln]	81.63	223.60	206.90	286.53	199.94	187.84	63.17	501.63	480.26	163.84	370.31	349.26
95th-Percentile Queue Length [veh/ln]	5.88	13.85	12.99	17.01	12.64	12.01	4.55	27.55	26.56	10.75	21.12	20.10
95th-Percentile Queue Length [ft/ln]	146.93	346.22	324.85	425.34	315.89	300.23	113.70	688.68	664.10	268.80	528.10	502.50

**Movement, Approach, & Intersection Results**

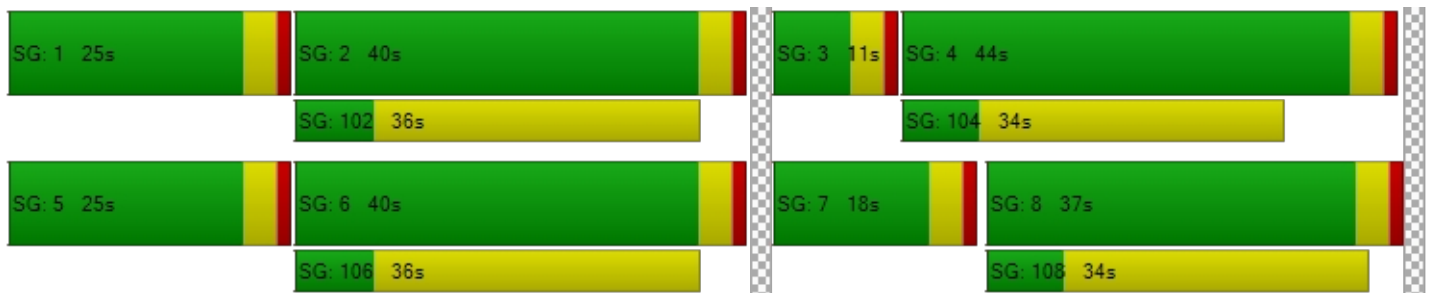
d_M, Delay for Movement [s/veh]	65.69	41.03	41.42	80.76	29.03	29.13	62.80	84.23	85.26	69.32	46.33	46.92
Movement LOS	E	D	D	F	C	C	E	F	F	E	D	D
d_A, Approach Delay [s/veh]	44.38			44.36			81.41			50.15		
Approach LOS	D			D			F			D		
d_I, Intersection Delay [s/veh]	56.40											
Intersection LOS	E											
Intersection V/C	0.858											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.51			49.51			49.51			49.51		
I_p,int, Pedestrian LOS Score for Intersection	2.924			2.993			3.063			3.134		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			550			667		
d_b, Bicycle Delay [s]	29.40			29.40			31.54			26.67		
I_b,int, Bicycle LOS Score for Intersection	2.189			2.418			2.522			2.548		
Bicycle LOS	B			B			B			B		

**Sequence**

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





## **Appendix F**

Project Opening Year (2024) With Ambient Growth & Cumulative Projects  
With Project Conditions  
LOS Analysis Worksheets

**Intersection Level Of Service Report**

**Intersection 1: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	All-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.648

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↔↔		↕↔		↔↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	276	32	177	119	61	335
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]	276	32	177	119	61	335
Peak Hour Factor	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	9	49	33	17	93
Total Analysis Volume [veh/h]	306	36	196	132	68	372
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	510	614	556	625	531	574
Degree of Utilization, x	0.60	0.06	0.35	0.21	0.13	0.65

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	3.91	0.19	1.58	0.79	0.44	4.67
95th-Percentile Queue Length [ft]	97.73	4.66	39.45	19.83	10.94	116.71
Approach Delay [s/veh]	18.68		11.59		18.37	
Approach LOS	C		B		C	
Intersection Delay [s/veh]	16.46					
Intersection LOS	C					

**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	8.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	92	10	90	6	10	16	10	329	89	156	451	4
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]	92	10	90	6	10	16	10	329	89	156	451	4
Peak Hour Factor	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790
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]	26	3	26	2	3	5	3	94	25	44	128	1
Total Analysis Volume [veh/h]	105	11	102	7	11	18	11	374	101	177	513	5
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	400			811			199			130		
Exiting Flow Rate [veh/h]	295			28			649			493		
Demand Flow Rate [veh/h]	92	10	90	6	10	16	10	329	89	156	451	4
Adjusted Demand Flow Rate [veh/h]	105	11	102	7	11	18	11	374	101	177	513	5

**Lanes**

Override Calculated Critical Headway	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1380.00	1380.00
B (coefficient)	0.00102	0.00102	0.00102	0.00102
HV Adjustment Factor	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	223	37	496	709
Capacity of Entry and Bypass Lanes [veh/h]	918	604	1127	1210
Pedestrian Impedance	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	900	592	1105	1186
X, volume / capacity	0.24	0.06	0.44	0.59

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	B
95th-Percentile Queue Length [veh]	0.95	0.19	2.29	3.99
95th-Percentile Queue Length [ft]	23.72	4.85	57.24	99.78
Approach Delay [s/veh]	6.49	6.78	7.99	10.18
Approach LOS	A	A	A	B
Intersection Delay [s/veh]	8.79			
Intersection LOS	A			

**Intersection Level Of Service Report**

**Intersection 3: Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)**

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			Nicholas Valley Road			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]	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	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	Yes			Yes			Yes			Yes		

**Volumes**

Name	Calle Contento			Nicholas Valley Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	30	6	17	8	6	39	29	377	47	38	549	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	17	8	6	39	29	377	47	38	549	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	5	2	2	10	8	101	13	10	147	4
Total Analysis Volume [veh/h]	32	6	18	9	6	42	31	404	50	41	588	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]	453			674			57			70		
Exiting Flow Rate [veh/h]	99			55			675			440		
Demand Flow Rate [veh/h]	30	6	17	8	6	39	29	377	47	38	549	16
Adjusted Demand Flow Rate [veh/h]	32	6	18	9	6	42	31	404	50	41	588	17

**Lanes**

Override 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
Override 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]	58	16	43	233	263	310	350
Capacity of Entry and Bypass Lanes [veh/h]	870	769	769	1349	1349	1332	1332
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	853	754	754	1322	1322	1306	1306
X, volume / capacity	0.07	0.02	0.06	0.17	0.19	0.23	0.26

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.21	0.06	0.18	0.62	0.72	0.90	1.06
95th-Percentile Queue Length [ft]	5.26	1.52	4.42	15.56	18.01	22.56	26.42
Approach Delay [s/veh]	4.85	5.24		4.26		4.91	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	4.67						
Intersection LOS	A						

**Intersection Level Of Service Report**

**Intersection 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

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):	0.742

**Intersection Setup**

Name	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		



**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	164	518	77	110	865	184	99	331	178	62	404	73
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]	164	518	77	110	865	184	99	331	178	62	404	73
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]	47	147	22	31	246	52	28	94	51	18	115	21
Total Analysis Volume [veh/h]	186	589	88	125	983	209	113	376	202	70	459	83
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing major street		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street		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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
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]	18	40	0	25	47	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	29	0	0	29	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]	14	61	61	10	57	57	7	22	22	6	21	21
g / C, Green / Cycle	0.12	0.53	0.53	0.09	0.50	0.50	0.06	0.19	0.19	0.05	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.10	0.19	0.19	0.07	0.33	0.33	0.03	0.16	0.16	0.04	0.15	0.15
s, saturation flow rate [veh/h]	1781	1870	1786	1781	1870	1758	3459	1870	1654	1781	1870	1772
c, Capacity [veh/h]	214	991	947	155	929	873	207	353	312	98	344	326
d1, Uniform Delay [s]	49.72	15.59	15.59	51.61	21.68	21.76	52.56	45.25	45.34	53.47	44.98	45.04
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
l, 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]	10.17	0.97	1.02	9.56	3.66	3.97	2.22	6.39	7.84	9.14	4.46	4.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.87	0.35	0.35	0.81	0.66	0.66	0.54	0.86	0.87	0.71	0.81	0.81
d, Delay for Lane Group [s/veh]	59.88	16.56	16.61	61.17	25.34	25.73	54.78	51.65	53.18	62.60	49.45	49.90
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]	5.61	4.93	4.72	3.79	11.90	11.38	1.60	8.70	7.91	2.17	7.68	7.38
50th-Percentile Queue Length [ft/ln]	140.26	123.16	118.02	94.86	297.55	284.53	39.94	217.60	197.67	54.35	192.10	184.40
95th-Percentile Queue Length [veh/ln]	9.49	8.57	8.28	6.83	17.56	16.91	2.88	13.54	12.52	3.91	12.23	11.83
95th-Percentile Queue Length [ft/ln]	237.37	214.16	207.10	170.75	438.99	422.85	71.89	338.56	312.95	97.83	305.75	295.75

**Movement, Approach, & Intersection Results**

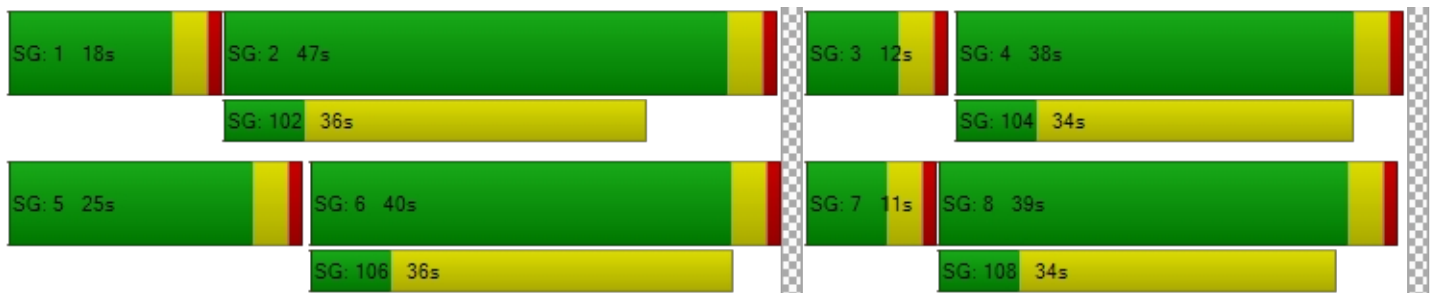
d_M, Delay for Movement [s/veh]	59.88	16.58	16.61	61.17	25.49	25.73	54.78	51.93	53.18	62.60	49.63	49.90
Movement LOS	E	B	B	E	C	C	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	25.92			28.91			52.76			51.15		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	36.81											
Intersection LOS	D											
Intersection V/C	0.742											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	47.05			47.05			47.05			47.05		
I_p,int, Pedestrian LOS Score for Intersection	3.069			3.063			2.883			2.702		
Crosswalk LOS	C			C			C			B		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	626			748			608			591		
d_b, Bicycle Delay [s]	27.15			22.56			27.84			28.54		
I_b,int, Bicycle LOS Score for Intersection	2.272			2.646			2.130			2.065		
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 5: Glen Oaks Road (NS) at Project Site Access (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	10.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

**Intersection Setup**

Name	Glen Oaks Road		Glen Oaks Road		Project 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]	55.00		55.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Glen Oaks Road		Project Site Access	
Base Volume Input [veh/h]	301	0	11	157	0	3
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]	301	0	11	157	0	3
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]	79	0	3	41	0	1
Total Analysis Volume [veh/h]	317	0	12	165	0	3
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	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	7.92	0.00	11.94	10.00
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.03	0.03	0.01	0.01
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.73	0.73	0.31	0.31
d_A, Approach Delay [s/veh]	0.00		0.54		10.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.25					
Intersection LOS	A					

**Intersection Level Of Service Report**

**Intersection 1: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	All-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):	0.698

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↵↵		↑↵		↵↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	185	90	396	238	71	244
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]	185	90	396	238	71	244
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	24	104	63	19	64
Total Analysis Volume [veh/h]	194	95	416	250	75	256
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	487	581	596	675	519	561
Degree of Utilization, x	0.40	0.16	0.70	0.37	0.14	0.46

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	1.89	0.58	5.56	1.71	0.50	2.37
95th-Percentile Queue Length [ft]	47.31	14.52	139.07	42.74	12.53	59.29
Approach Delay [s/veh]	13.34		17.62		13.58	
Approach LOS	B		C		B	
Intersection Delay [s/veh]	15.62					
Intersection LOS	C					



**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	10.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	80	19	238	8	11	29	30	494	79	142	515	8
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]	80	19	238	8	11	29	30	494	79	142	515	8
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]	21	5	64	2	3	8	8	132	21	38	138	2
Total Analysis Volume [veh/h]	86	20	255	9	12	31	32	529	85	152	551	9
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	581			805			176			141		
Exiting Flow Rate [veh/h]	254			62			681			809		
Demand Flow Rate [veh/h]	80	19	238	8	11	29	30	494	79	142	515	8
Adjusted Demand Flow Rate [veh/h]	86	20	255	9	12	31	32	529	85	152	551	9

**Lanes**

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.98			0.98			0.98		
Entry Flow Rate [veh/h]	369			54			659			727		
Capacity of Entry and Bypass Lanes [veh/h]	763			608			1153			1196		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	748			596			1131			1172		
X, volume / capacity	0.48			0.09			0.57			0.61		

**Movement, Approach, & Intersection Results**

Lane LOS	B			A			B			B		
95th-Percentile Queue Length [veh]	2.65			0.29			3.77			4.32		
95th-Percentile Queue Length [ft]	66.37			7.15			94.22			107.98		
Approach Delay [s/veh]	11.64			7.06			10.21			10.74		
Approach LOS	B			A			B			B		
Intersection Delay [s/veh]	10.62											
Intersection LOS	B											

**Intersection Level Of Service Report**

**Intersection 3: Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)**

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			Nicholas Valley Road			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]	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	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	Yes			Yes			Yes			Yes		

**Volumes**

Name	Calle Contento			Nicholas Valley Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	31	14	12	21	14	60	54	567	57	18	526	22
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	12	21	14	60	54	567	57	18	526	22
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	4	6	4	18	16	166	17	5	154	6
Total Analysis Volume [veh/h]	36	16	14	25	16	70	63	662	67	21	614	26
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	765			684			63			117		
Exiting Flow Rate [veh/h]	106			107			734			715		
Demand Flow Rate [veh/h]	31	14	12	21	14	60	54	567	57	18	526	22
Adjusted Demand Flow Rate [veh/h]	36	16	14	25	16	70	63	662	67	21	614	26

**Lanes**

Override 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
Override 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]	68	42	72	380	429	317	358
Capacity of Entry and Bypass Lanes [veh/h]	633	762	762	1341	1341	1277	1277
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	621	747	747	1315	1315	1252	1252
X, volume / capacity	0.11	0.05	0.09	0.28	0.32	0.25	0.28

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.36	0.17	0.31	1.17	1.39	0.98	1.15
95th-Percentile Queue Length [ft]	8.89	4.35	7.73	29.34	34.76	24.57	28.87
Approach Delay [s/veh]	7.03	5.63		5.44		5.24	
Approach LOS	A	A		A		A	
Intersection Delay [s/veh]	5.43						
Intersection LOS	A						

**Intersection Level Of Service Report**

**Intersection 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

Control Type:	Signalized	Delay (sec / veh):	35.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.764

**Intersection Setup**

Name	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
	96	1093	91	83	647	93	277	460	198	97	419	144
Base Volume Input [veh/h]	96	1093	91	83	647	93	277	460	198	97	419	144
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]	96	1093	91	83	647	93	277	460	198	97	419	144
Peak Hour Factor	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380	0.9380
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]	26	291	24	22	172	25	74	123	53	26	112	38
Total Analysis Volume [veh/h]	102	1165	97	88	690	99	295	490	211	103	447	154
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 major street	0		0		0		0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0		0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0		0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0		0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0		0		0		0	
Bicycle Volume [bicycles/h]	0		0		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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
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	40	0	11	40	0	16	43	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	29	0	0	29	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	51	51	7	51	51	11	24	24	7	20	20
g / C, Green / Cycle	0.07	0.49	0.49	0.06	0.48	0.48	0.10	0.23	0.23	0.07	0.19	0.19
(v / s)_i Volume / Saturation Flow Rate	0.06	0.34	0.34	0.05	0.22	0.22	0.09	0.20	0.20	0.06	0.17	0.17
s, saturation flow rate [veh/h]	1781	1870	1820	1781	1870	1789	3459	1870	1681	1781	1870	1709
c, Capacity [veh/h]	120	906	882	113	899	860	361	434	391	120	365	334
d1, Uniform Delay [s]	48.49	21.20	21.25	48.49	18.08	18.08	46.08	38.60	38.60	48.52	40.88	40.94
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
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	14.94	4.58	4.76	10.84	1.62	1.69	4.53	5.00	5.52	15.66	5.87	6.64
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	0.70	0.71	0.78	0.45	0.45	0.82	0.85	0.85	0.86	0.86	0.86
d, Delay for Lane Group [s/veh]	63.43	25.78	26.01	59.33	19.69	19.77	50.61	43.60	44.12	64.18	46.75	47.57
Lane Group LOS	E	C	C	E	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]	3.01	11.80	11.60	2.50	6.11	5.87	3.83	9.17	8.30	3.08	8.00	7.44
50th-Percentile Queue Length [ft/ln]	75.23	295.00	289.97	62.50	152.82	146.72	95.80	229.16	207.48	77.11	200.07	185.95
95th-Percentile Queue Length [veh/ln]	5.42	17.43	17.18	4.50	10.17	9.84	6.90	14.13	13.02	5.55	12.64	11.91
95th-Percentile Queue Length [ft/ln]	135.42	435.84	429.61	112.50	254.19	246.04	172.44	353.29	325.59	138.80	316.06	297.76



**Movement, Approach, & Intersection Results**

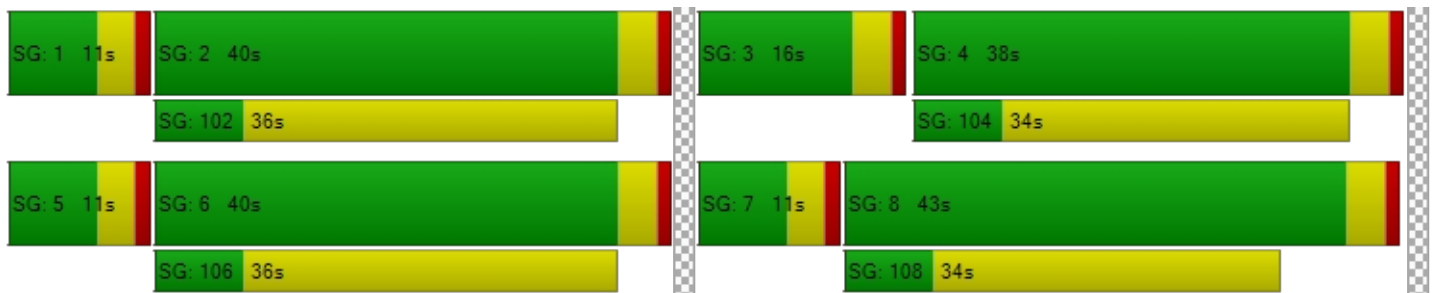
d_M, Delay for Movement [s/veh]	63.43	25.88	26.01	59.33	19.73	19.77	50.61	43.72	44.12	64.18	47.00	47.57
Movement LOS	E	C	C	E	B	B	D	D	D	E	D	D
d_A, Approach Delay [s/veh]	28.70			23.71			45.85			49.64		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	35.66											
Intersection LOS	D											
Intersection V/C	0.764											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	42.11			42.11			42.11			42.11		
I_p,int, Pedestrian LOS Score for Intersection	3.154			3.198			2.905			2.755		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	685			685			742			647		
d_b, Bicycle Delay [s]	22.70			22.70			20.77			24.03		
I_b,int, Bicycle LOS Score for Intersection	2.685			2.283			2.381			2.140		
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 5: Glen Oaks Road (NS) at Project Site Access (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	9.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

**Intersection Setup**

Name	Glen Oaks Road		Glen Oaks Road		Project 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]	55.00		55.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Glen Oaks Road		Project Site Access	
Base Volume Input [veh/h]	228	0	17	266	0	20
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]	228	0	17	266	0	20
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]	60	0	4	70	0	5
Total Analysis Volume [veh/h]	240	0	18	280	0	21
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	0.00	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	7.75	0.00	12.56	9.63
Movement LOS	A	A	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.04	0.04	0.08	0.08
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.03	1.03	2.02	2.02
d_A, Approach Delay [s/veh]	0.00		0.47		9.63	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.61					
Intersection LOS	A					

**Intersection Level Of Service Report**

**Intersection 1: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	All-way stop	Delay (sec / veh):	82.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.328

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↔↔		↕↔		↔↕	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	392	171	384	365	199	557
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]	392	171	384	365	199	557
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	105	46	103	98	53	149
Total Analysis Volume [veh/h]	420	183	411	391	213	596
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

**Lanes**

Capacity per Entry Lane [veh/h]	420	484	454	498	423	596
Degree of Utilization, x	1.01	0.38	0.91	0.79	0.50	1.33

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	12.73	1.74	10.02	7.16	2.76	26.75
95th-Percentile Queue Length [ft]	318.30	43.62	250.42	179.05	68.91	668.72
Approach Delay [s/veh]	56.98		41.06		141.91	
Approach LOS	F		E		F	
Intersection Delay [s/veh]	82.25					
Intersection LOS	F					

**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	80.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	116	27	316	25	7	59	41	788	77	272	982	28
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]	116	27	316	25	7	59	41	788	77	272	982	28
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	30	7	83	7	2	16	11	207	20	72	258	7
Total Analysis Volume [veh/h]	122	28	332	26	7	62	43	829	81	286	1033	29
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	916			1470			325			197		
Exiting Flow Rate [veh/h]	381			102			1241			1211		
Demand Flow Rate [veh/h]	116	27	316	25	7	59	41	788	77	272	982	28
Adjusted Demand Flow Rate [veh/h]	122	28	332	26	7	62	43	829	81	286	1033	29

**Lanes**

Override Calculated Critical Headway	No			No			No			No		
User-Defined Critical Headway [s]	4.00			4.00			4.00			4.00		
Override Calculated Follow-Up Time	No			No			No			No		
User-Defined Follow-Up Time [s]	3.00			3.00			3.00			3.00		
A (intercept)	1380.00			1380.00			1380.00			1380.00		
B (coefficient)	0.00102			0.00102			0.00102			0.00102		
HV Adjustment Factor	0.98			0.98			0.98			0.98		
Entry Flow Rate [veh/h]	492			97			973			1375		
Capacity of Entry and Bypass Lanes [veh/h]	543			309			991			1129		
Pedestrian Impedance	1.00			1.00			1.00			1.00		
Capacity per Entry Lane [veh/h]	532			303			971			1107		
X, volume / capacity	0.91			0.31			0.98			1.22		

**Movement, Approach, & Intersection Results**

Lane LOS	E			C			F			F		
95th-Percentile Queue Length [veh]	10.70			1.31			17.82			42.14		
95th-Percentile Queue Length [ft]	267.51			32.74			445.57			1053.58		
Approach Delay [s/veh]	46.94			18.86			45.17			121.99		
Approach LOS	E			C			F			F		
Intersection Delay [s/veh]	80.58											
Intersection LOS	F											

**Intersection Level Of Service Report**

**Intersection 3: Nicholas Valley Road / Calle Contento (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	10.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Calle Contento			Nicholas Valley Road			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]	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1	0	0	1	1	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	Yes			Yes			Yes			Yes		

**Volumes**

Name	Calle Contento			Nicholas Valley Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	43	32	31	94	41	185	183	921	101	28	974	130
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]	43	32	31	94	41	185	183	921	101	28	974	130
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	8	25	11	48	48	240	26	7	254	34
Total Analysis Volume [veh/h]	45	33	32	98	43	193	191	961	105	29	1017	136
Pedestrian Volume [ped/h]	0			0			0			0		



**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	1275			1113			173			274		
Exiting Flow Rate [veh/h]	181			367			1280			1113		
Demand Flow Rate [veh/h]	43	32	31	94	41	185	183	921	101	28	974	130
Adjusted Demand Flow Rate [veh/h]	45	33	32	98	43	193	191	961	105	29	1017	136

**Lanes**

Override 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
Override 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]	113	144	197	603	680	567	639
Capacity of Entry and Bypass Lanes [veh/h]	376	516	516	1213	1213	1107	1107
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	369	506	506	1189	1189	1085	1085
X, volume / capacity	0.30	0.28	0.38	0.50	0.56	0.51	0.58

**Movement, Approach, & Intersection Results**

Lane LOS	C	B	B	A	A	A	B
95th-Percentile Queue Length [veh]	1.23	1.13	1.77	2.85	3.62	3.01	3.84
95th-Percentile Queue Length [ft]	30.74	28.29	44.28	71.35	90.57	75.33	96.11
Approach Delay [s/veh]	15.36	12.46		9.07		10.02	
Approach LOS	C	B		A		B	
Intersection Delay [s/veh]	10.09						
Intersection LOS	B						

**Intersection Level Of Service Report**

**Intersection 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

Control Type:	Signalized	Delay (sec / veh):	60.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.887

**Intersection Setup**

Name	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	0
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	99	480	179	313	579	136	157	851	154	203	804	216
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]	99	480	179	313	579	136	157	851	154	203	804	216
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	123	46	80	148	35	40	218	39	52	206	55
Total Analysis Volume [veh/h]	101	491	183	320	593	139	161	871	158	208	823	221
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 major street		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing major street		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street		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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
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]	25	40	0	25	40	0	11	37	0	18	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	29	0	0	29	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	36	36	21	49	49	7	33	33	14	40	40
g / C, Green / Cycle	0.07	0.30	0.30	0.18	0.40	0.40	0.06	0.27	0.27	0.12	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.06	0.19	0.19	0.18	0.20	0.20	0.05	0.28	0.28	0.12	0.29	0.29
s, saturation flow rate [veh/h]	1781	1870	1699	1781	1870	1749	3459	1870	1771	1781	1870	1736
c, Capacity [veh/h]	127	563	512	312	757	708	202	512	485	208	621	576
d1, Uniform Delay [s]	54.88	36.11	36.14	49.50	26.62	26.63	55.79	43.58	43.58	53.00	37.63	37.73
k, delay calibration	0.11	0.50	0.50	0.24	0.50	0.50	0.11	0.48	0.48	0.11	0.36	0.37
l, 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]	10.80	5.19	5.75	42.58	2.35	2.51	7.01	46.91	48.82	29.16	11.69	12.99
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	0.63	0.63	1.03	0.50	0.50	0.80	1.03	1.03	1.00	0.87	0.87
d, Delay for Lane Group [s/veh]	65.69	41.30	41.89	92.08	28.97	29.14	62.80	90.48	92.40	82.16	49.32	50.72
Lane Group LOS	E	D	D	F	C	C	E	F	F	F	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	3.27	9.19	8.47	12.56	8.00	7.51	2.53	21.05	20.20	7.72	16.02	15.19
50th-Percentile Queue Length [ft/ln]	81.63	229.79	211.70	313.96	199.93	187.86	63.17	526.23	504.96	193.02	400.56	379.73
95th-Percentile Queue Length [veh/ln]	5.88	14.16	13.24	18.62	12.64	12.01	4.55	29.13	28.15	12.28	22.59	21.58
95th-Percentile Queue Length [ft/ln]	146.93	354.09	331.00	465.44	315.88	300.26	113.70	728.21	703.67	307.02	564.68	539.52

**Movement, Approach, & Intersection Results**

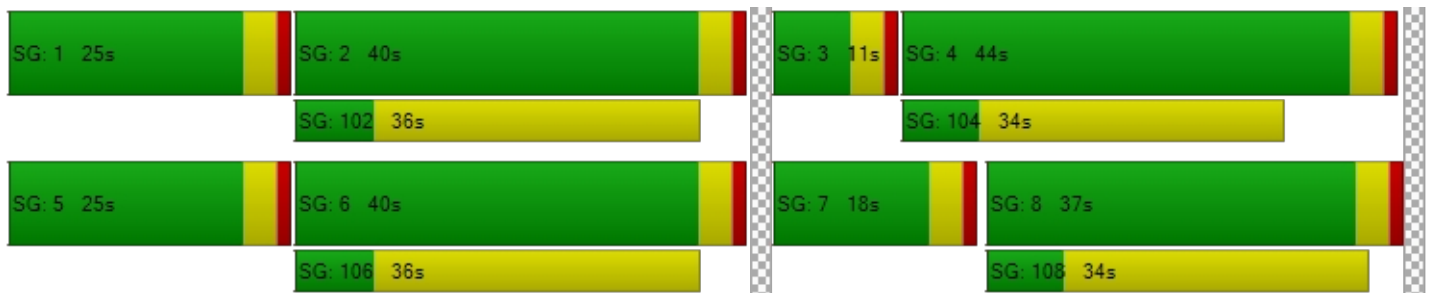
d_M, Delay for Movement [s/veh]	65.69	41.47	41.89	92.08	29.03	29.14	62.80	91.24	92.40	82.16	49.80	50.72
Movement LOS	E	D	D	F	C	C	E	F	F	F	D	D
d_A, Approach Delay [s/veh]	44.72			48.22			87.55			55.34		
Approach LOS	D			D			F			E		
d_I, Intersection Delay [s/veh]	60.64											
Intersection LOS	E											
Intersection V/C	0.887											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.51			49.51			49.51			49.51		
I_p,int, Pedestrian LOS Score for Intersection	2.934			3.002			3.077			3.167		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			550			667		
d_b, Bicycle Delay [s]	29.40			29.40			31.54			26.67		
I_b,int, Bicycle LOS Score for Intersection	2.199			2.428			2.541			2.593		
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 5: Glen Oaks Road (NS) at Project Site Access (EW)**

Control Type:	Two-way stop	Delay (sec / veh):	11.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.136

**Intersection Setup**

Name	Glen Oaks Road		Glen Oaks Road		Project 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]	55.00		55.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Glen Oaks Road		Glen Oaks Road		Project Site Access	
Base Volume Input [veh/h]	340	0	77	368	0	88
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]	340	0	77	368	0	88
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]	89	0	20	97	0	23
Total Analysis Volume [veh/h]	358	0	81	387	0	93
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	0.07	0.00	0.00	0.14
d_M, Delay for Movement [s/veh]	0.00	0.00	8.22	0.00	18.69	11.07
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.22	0.22	0.47	0.47
95th-Percentile Queue Length [ft/ln]	0.00	0.00	5.42	5.42	11.68	11.68
d_A, Approach Delay [s/veh]	0.00		1.42		11.07	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	1.84					
Intersection LOS	B					



## **Appendix G**




Project Opening Year (2024) With Ambient Growth & Cumulative Projects  
With Project Conditions With Improvements  
LOS Analysis Worksheets

**Intersection Level Of Service Report**

**Intersection 1: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	Signalized	Delay (sec / veh):	19.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.428

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	276	32	177	119	61	335
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	276	32	177	119	61	335
Peak Hour Factor	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	9	49	33	17	93
Total Analysis Volume [veh/h]	306	36	196	132	68	372
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

**Phasing & Timing**

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	3	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	58	0	21	0	11	32
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	10	0	10	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	18	18	54	54	6	64
g / C, Green / Cycle	0.20	0.20	0.60	0.60	0.06	0.71
(v / s)_i Volume / Saturation Flow Rate	0.17	0.02	0.10	0.08	0.04	0.20
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1781	1870
c, Capacity [veh/h]	352	314	1130	960	115	1334
d1, Uniform Delay [s]	34.99	29.65	7.88	7.69	40.95	4.62
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.57	0.16	0.33	0.30	4.74	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.87	0.11	0.17	0.14	0.59	0.28
d, Delay for Lane Group [s/veh]	41.56	29.81	8.21	7.99	45.70	5.14
Lane Group LOS	D	C	A	A	D	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	6.57	0.60	1.44	0.96	1.54	1.76
50th-Percentile Queue Length [ft/ln]	164.28	15.12	35.93	23.89	38.46	43.97
95th-Percentile Queue Length [veh/ln]	10.77	1.09	2.59	1.72	2.77	3.17
95th-Percentile Queue Length [ft/ln]	269.37	27.22	64.68	43.01	69.22	79.14

**Movement, Approach, & Intersection Results**

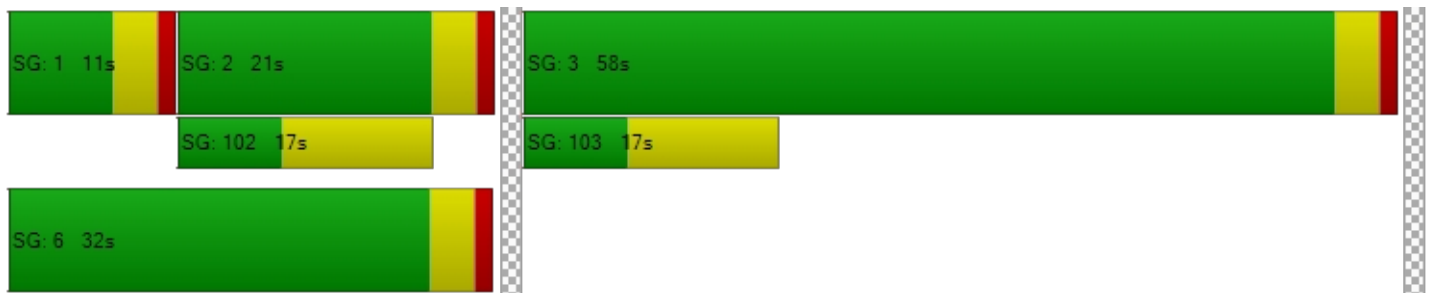
d_M, Delay for Movement [s/veh]	41.56	29.81	8.21	7.99	45.70	5.14
Movement LOS	D	C	A	A	D	A
d_A, Approach Delay [s/veh]	40.32		8.12		11.41	
Approach LOS	D		A		B	
d_I, Intersection Delay [s/veh]	19.34					
Intersection LOS	B					
Intersection V/C	0.428					

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	2.263	2.485	2.304
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	378	622
d_b, Bicycle Delay [s]	7.21	29.62	21.37
I_b,int, Bicycle LOS Score for Intersection	1.560	2.101	2.286
Bicycle LOS	A	B	B

**Sequence**

Ring 1	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**

**Intersection 1: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	7.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	276	32	177	119	61	335
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]	276	32	177	119	61	335
Peak Hour Factor	0.9010	0.9010	0.9010	0.9010	0.9010	0.9010
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	77	9	49	33	17	93
Total Analysis Volume [veh/h]	306	36	196	132	68	372
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	200		69		312	
Exiting Flow Rate [veh/h]	204		692		237	
Demand Flow Rate [veh/h]	276	32	177	119	61	335
Adjusted Demand Flow Rate [veh/h]	306	36	196	132	68	372

**Lanes**

Override Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Override Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1380.00		1380.00		1380.00	
B (coefficient)	0.00102		0.00102		0.00102	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	349		335		449	
Capacity of Entry and Bypass Lanes [veh/h]	1126		1286		1004	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	1104		1261		985	
X, volume / capacity	0.31		0.26		0.45	

**Movement, Approach, & Intersection Results**

Lane LOS	A		A		A	
95th-Percentile Queue Length [veh]	1.33		1.05		2.35	
95th-Percentile Queue Length [ft]	33.23		26.15		58.63	
Approach Delay [s/veh]	6.27		5.16		8.82	
Approach LOS	A		A		A	
Intersection Delay [s/veh]			6.95			
Intersection LOS			A			



**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	5.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	92	10	90	6	10	16	10	329	89	156	451	4
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]	92	10	90	6	10	16	10	329	89	156	451	4
Peak Hour Factor	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790	0.8790
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]	26	3	26	2	3	5	3	94	25	44	128	1
Total Analysis Volume [veh/h]	105	11	102	7	11	18	11	374	101	177	513	5
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	400			811			199			130		
Exiting Flow Rate [veh/h]	295			28			649			493		
Demand Flow Rate [veh/h]	92	10	90	6	10	16	10	329	89	156	451	4
Adjusted Demand Flow Rate [veh/h]	105	11	102	7	11	18	11	374	101	177	513	5

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	223	37	233	263	334	376
Capacity of Entry and Bypass Lanes [veh/h]	918	604	1185	1185	1263	1263
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	900	592	1162	1162	1238	1238
X, volume / capacity	0.24	0.06	0.20	0.22	0.26	0.30

**Movement, Approach, & Intersection Results**

Lane LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh]	0.95	0.19	0.73	0.85	1.07	1.26
95th-Percentile Queue Length [ft]	23.72	4.85	18.24	21.21	26.65	31.43
Approach Delay [s/veh]	6.49	6.78	4.97		5.46	
Approach LOS	A	A	A		A	
Intersection Delay [s/veh]	5.48					
Intersection LOS	A					

**Intersection Level Of Service Report**

**Intersection 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

Control Type:	Signalized	Delay (sec / veh):	34.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.747

**Intersection Setup**

Name	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	1
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
Base Volume Input [veh/h]	164	518	77	110	865	184	99	331	178	62	404	73
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]	164	518	77	110	865	184	99	331	178	62	404	73
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]	47	147	22	31	246	52	28	94	51	18	115	21
Total Analysis Volume [veh/h]	186	589	88	125	983	209	113	376	202	70	459	83
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Overla
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]	18	40	0	19	41	0	13	39	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	29	0	0	29	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]	13	57	57	10	54	54	7	21	21	6	20	34
g / C, Green / Cycle	0.12	0.52	0.52	0.09	0.49	0.49	0.06	0.19	0.19	0.06	0.18	0.31
(v / s)_i Volume / Saturation Flow Rate	0.10	0.19	0.19	0.07	0.33	0.33	0.03	0.16	0.16	0.04	0.13	0.05
s, saturation flow rate [veh/h]	1781	1870	1786	1781	1870	1758	3459	1870	1654	1781	3560	1589
c, Capacity [veh/h]	216	971	928	156	909	855	216	356	315	102	658	491
d1, Uniform Delay [s]	47.47	15.60	15.60	49.26	21.61	21.69	50.03	43.14	43.22	50.95	41.99	27.73
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
l, 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]	9.68	1.02	1.07	8.99	3.98	4.32	1.96	6.04	7.17	8.03	1.35	0.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.86	0.36	0.36	0.80	0.67	0.68	0.52	0.86	0.87	0.69	0.70	0.17
d, Delay for Lane Group [s/veh]	57.14	16.62	16.67	58.25	25.59	26.01	51.99	49.17	50.39	58.98	43.34	27.89
Lane Group LOS	E	B	B	E	C	C	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]	5.33	4.79	4.60	3.60	11.62	11.11	1.51	8.25	7.47	2.05	5.69	1.54
50th-Percentile Queue Length [ft/ln]	133.16	119.87	114.89	90.01	290.39	277.85	37.80	206.19	186.81	51.29	142.27	38.53
95th-Percentile Queue Length [veh/ln]	9.11	8.39	8.11	6.48	17.21	16.58	2.72	12.96	11.96	3.69	9.60	2.77
95th-Percentile Queue Length [ft/ln]	227.79	209.65	202.78	162.01	430.13	414.54	68.04	323.94	298.88	92.32	240.08	69.35

**Movement, Approach, & Intersection Results**

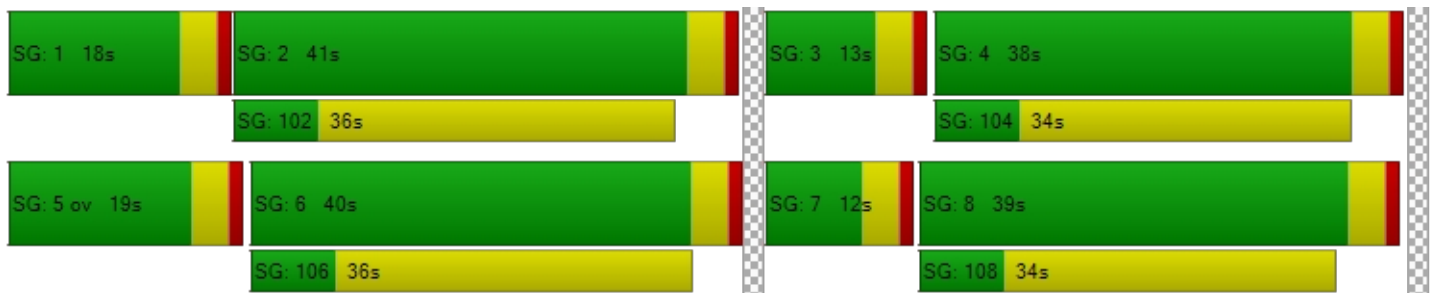
d_M, Delay for Movement [s/veh]	57.14	16.64	16.67	58.25	25.75	26.01	51.99	49.40	50.39	58.98	43.34	27.89
Movement LOS	E	B	B	E	C	C	D	D	D	E	D	C
d_A, Approach Delay [s/veh]	25.37			28.88			50.11			43.03		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	34.71											
Intersection LOS	C											
Intersection V/C	0.747											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	44.58			44.58			44.58			44.58		
I_p,int, Pedestrian LOS Score for Intersection	3.067			3.061			2.881			2.788		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	654			672			636			618		
d_b, Bicycle Delay [s]	24.91			24.25			25.59			26.28		
I_b,int, Bicycle LOS Score for Intersection	2.272			2.646			2.130			2.065		
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: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	Signalized	Delay (sec / veh):	16.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.431

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	



**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	185	90	396	238	71	244
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	185	90	396	238	71	244
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	24	104	63	19	64
Total Analysis Volume [veh/h]	194	95	416	250	75	256
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

**Phasing & Timing**

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	3	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	58	0	21	0	11	32
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	10	0	10	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	60	60	6	70
g / C, Green / Cycle	0.14	0.14	0.66	0.66	0.07	0.78
(v / s)_i Volume / Saturation Flow Rate	0.11	0.06	0.22	0.16	0.04	0.14
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1781	1870
c, Capacity [veh/h]	242	216	1242	1056	119	1450
d1, Uniform Delay [s]	37.74	35.77	6.54	6.03	40.92	2.63
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	6.12	1.41	0.73	0.53	5.36	0.27
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.80	0.44	0.34	0.24	0.63	0.18
d, Delay for Lane Group [s/veh]	43.86	37.18	7.26	6.56	46.28	2.90
Lane Group LOS	D	D	A	A	D	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	4.24	1.86	2.71	1.52	1.71	0.65
50th-Percentile Queue Length [ft/ln]	106.05	46.56	67.67	37.91	42.71	16.16
95th-Percentile Queue Length [veh/ln]	7.62	3.35	4.87	2.73	3.08	1.16
95th-Percentile Queue Length [ft/ln]	190.49	83.81	121.80	68.24	76.88	29.09

**Movement, Approach, & Intersection Results**

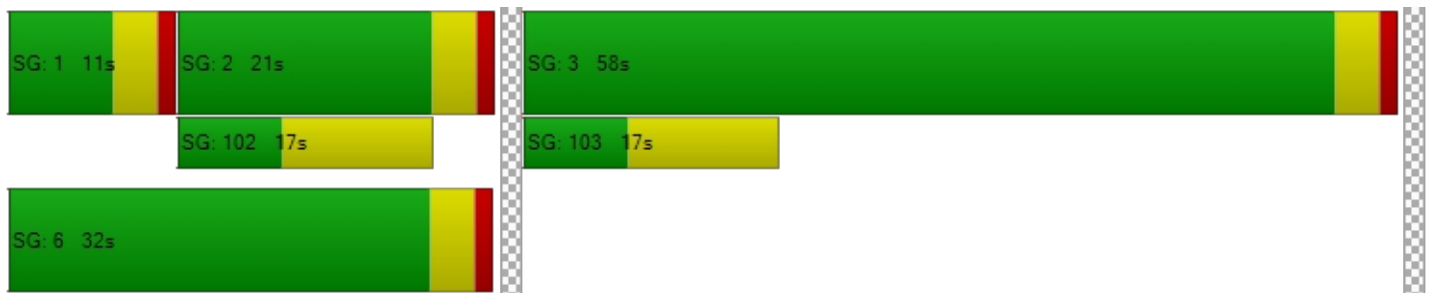
d_M, Delay for Movement [s/veh]	43.86	37.18	7.26	6.56	46.28	2.90
Movement LOS	D	D	A	A	D	A
d_A, Approach Delay [s/veh]	41.66		7.00		12.73	
Approach LOS	D		A		B	
d_I, Intersection Delay [s/veh]	16.26					
Intersection LOS	B					
Intersection V/C	0.431					

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	2.306	2.544	2.396
Crosswalk LOS	B	B	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1200	378	622
d_b, Bicycle Delay [s]	7.21	29.62	21.37
I_b,int, Bicycle LOS Score for Intersection	1.560	2.659	2.106
Bicycle LOS	A	B	B

**Sequence**

Ring 1	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-






**Intersection Level Of Service Report**

**Intersection 1: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	7.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	185	90	396	238	71	244
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]	185	90	396	238	71	244
Peak Hour Factor	0.9520	0.9520	0.9520	0.9520	0.9520	0.9520
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	49	24	104	63	19	64
Total Analysis Volume [veh/h]	194	95	416	250	75	256
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	424		77		198	
Exiting Flow Rate [veh/h]	332		459		521	
Demand Flow Rate [veh/h]	185	90	396	238	71	244
Adjusted Demand Flow Rate [veh/h]	194	95	416	250	75	256

**Lanes**

Override Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Override Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1380.00		1380.00		1380.00	
B (coefficient)	0.00102		0.00102		0.00102	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	295		680		338	
Capacity of Entry and Bypass Lanes [veh/h]	896		1277		1128	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	878		1252		1106	
X, volume / capacity	0.33		0.53		0.30	

**Movement, Approach, & Intersection Results**

Lane LOS	A		A		A	
95th-Percentile Queue Length [veh]	1.44		3.27		1.27	
95th-Percentile Queue Length [ft]	36.11		81.68		31.63	
Approach Delay [s/veh]	7.75		8.76		6.14	
Approach LOS	A		A		A	
Intersection Delay [s/veh]			7.86			
Intersection LOS			A			

**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	6.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	80	19	238	8	11	29	30	494	79	142	515	8
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]	80	19	238	8	11	29	30	494	79	142	515	8
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]	21	5	64	2	3	8	8	132	21	38	138	2
Total Analysis Volume [veh/h]	86	20	255	9	12	31	32	529	85	152	551	9
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	581			805			176			141		
Exiting Flow Rate [veh/h]	254			62			681			809		
Demand Flow Rate [veh/h]	80	19	238	8	11	29	30	494	79	142	515	8
Adjusted Demand Flow Rate [veh/h]	86	20	255	9	12	31	32	529	85	152	551	9

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	369	54	310	350	342	385
Capacity of Entry and Bypass Lanes [veh/h]	763	608	1210	1210	1250	1250
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	748	596	1186	1186	1225	1225
X, volume / capacity	0.48	0.09	0.26	0.29	0.27	0.31

**Movement, Approach, & Intersection Results**

Lane LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh]	2.65	0.29	1.02	1.20	1.12	1.32
95th-Percentile Queue Length [ft]	66.37	7.15	25.58	30.11	27.92	32.99
Approach Delay [s/veh]	11.64	7.06	5.54		5.61	
Approach LOS	B	A	A		A	
Intersection Delay [s/veh]	6.86					
Intersection LOS	A					



**Intersection Level Of Service Report**

**Intersection 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

Control Type:	Signalized	Delay (sec / veh):	33.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.735

**Intersection Setup**

Name	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	1
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
	96	1093	91	83	647	93	277	460	198	97	419	144
Base Volume Input [veh/h]	96	1093	91	83	647	93	277	460	198	97	419	144
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]	96	1093	91	83	647	93	277	460	198	97	419	144
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]	25	280	23	21	166	24	71	118	51	25	107	37
Total Analysis Volume [veh/h]	98	1121	93	85	664	95	284	472	203	99	430	148
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 major street	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street	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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Overla
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	41	0	11	40	0	15	42	0	11	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	29	0	0	29	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]	7	52	52	7	52	52	11	23	23	7	19	30
g / C, Green / Cycle	0.07	0.50	0.50	0.07	0.49	0.49	0.10	0.22	0.22	0.07	0.18	0.29
(v / s)_i Volume / Saturation Flow Rate	0.06	0.33	0.33	0.05	0.21	0.21	0.08	0.19	0.19	0.06	0.12	0.09
s, saturation flow rate [veh/h]	1781	1870	1820	1781	1870	1789	3459	1870	1681	1781	3560	1589
c, Capacity [veh/h]	125	926	901	120	921	881	349	407	366	120	657	461
d1, Uniform Delay [s]	48.10	19.95	19.98	48.00	17.08	17.08	46.30	39.71	39.71	48.40	39.76	29.22
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
l, 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]	10.33	3.74	3.87	7.42	1.41	1.48	4.64	6.00	6.61	13.03	1.12	0.40
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	0.79	0.66	0.67	0.71	0.42	0.42	0.81	0.87	0.87	0.82	0.65	0.32
d, Delay for Lane Group [s/veh]	58.43	23.69	23.86	55.42	18.49	18.56	50.94	45.71	46.32	61.43	40.88	29.62
Lane Group LOS	E	C	C	E	B	B	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]	2.76	10.73	10.53	2.32	5.62	5.40	3.70	9.04	8.19	2.89	5.00	2.82
50th-Percentile Queue Length [ft/ln]	68.92	268.35	263.20	57.97	140.60	135.05	92.48	225.88	204.67	72.28	124.92	70.43
95th-Percentile Queue Length [veh/ln]	4.96	16.11	15.85	4.17	9.51	9.21	6.66	13.97	12.88	5.20	8.66	5.07
95th-Percentile Queue Length [ft/ln]	124.05	402.68	396.23	104.35	237.83	230.34	166.47	349.13	321.99	130.11	216.57	126.77

**Movement, Approach, & Intersection Results**

d_M, Delay for Movement [s/veh]	58.43	23.77	23.86	55.42	18.52	18.56	50.94	45.86	46.32	61.43	40.88	29.62
Movement LOS	E	C	C	E	B	B	D	D	D	E	D	C
d_A, Approach Delay [s/veh]	26.36			22.24			47.46			41.43		
Approach LOS	C			C			D			D		
d_I, Intersection Delay [s/veh]	33.47											
Intersection LOS	C											
Intersection V/C	0.735											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	42.11			42.11			42.11			42.11		
I_p,int, Pedestrian LOS Score for Intersection	3.122			3.164			2.889			2.820		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	704			685			723			647		
d_b, Bicycle Delay [s]	22.05			22.70			21.40			24.03		
I_b,int, Bicycle LOS Score for Intersection	2.642			2.256			2.351			2.118		
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: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	Signalized	Delay (sec / veh):	23.5
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.694

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration	↔↔		↑↔		↔↑	
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	1	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	150.00	150.00	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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	392	171	384	365	199	557
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	392	171	384	365	199	557
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	105	46	103	98	53	149
Total Analysis Volume [veh/h]	420	183	411	391	213	596
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street	0		0		0	
v_di, Inbound Pedestrian Volume crossing major street	0		0		0	
v_co, Outbound Pedestrian Volume crossing minor street	0		0		0	
v_ci, Inbound Pedestrian Volume crossing minor street	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

**Intersection Settings**

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

**Phasing & Timing**

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	3	0	2	0	1	6
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	30	0	30	0	30	30
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	45	0	21	0	24	45
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	10	0	10	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

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



**Lane Group Calculations**

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	24	24	41	41	13	58
g / C, Green / Cycle	0.27	0.27	0.46	0.46	0.14	0.65
(v / s)_i Volume / Saturation Flow Rate	0.24	0.12	0.22	0.25	0.12	0.32
s, saturation flow rate [veh/h]	1781	1589	1870	1589	1781	1870
c, Capacity [veh/h]	472	422	860	731	252	1208
d1, Uniform Delay [s]	31.81	27.47	16.84	17.43	37.67	8.28
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	5.91	0.71	1.90	2.80	7.53	1.44
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

**Lane Group Results**

X, volume / capacity	0.89	0.43	0.48	0.54	0.84	0.49
d, Delay for Lane Group [s/veh]	37.72	28.18	18.74	20.22	45.20	9.73
Lane Group LOS	D	C	B	C	D	A
Critical Lane Group	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	8.67	3.05	5.57	5.60	4.80	4.91
50th-Percentile Queue Length [ft/ln]	216.65	76.30	139.18	140.02	120.11	122.71
95th-Percentile Queue Length [veh/ln]	13.49	5.49	9.44	9.48	8.40	8.54
95th-Percentile Queue Length [ft/ln]	337.35	137.34	235.91	237.05	209.97	213.55

**Movement, Approach, & Intersection Results**

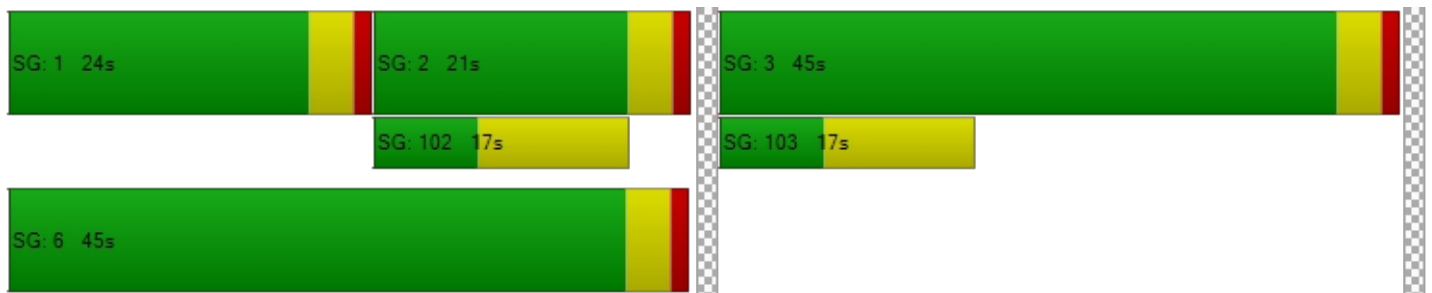
d_M, Delay for Movement [s/veh]	37.72	28.18	18.74	20.22	45.20	9.73
Movement LOS	D	C	B	C	D	A
d_A, Approach Delay [s/veh]	34.82		19.46		19.07	
Approach LOS	C		B		B	
d_I, Intersection Delay [s/veh]	23.50					
Intersection LOS	C					
Intersection V/C	0.694					

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.68	34.68	34.68
I_p,int, Pedestrian LOS Score for Intersection	2.659	2.924	2.700
Crosswalk LOS	B	C	B
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	911	378	911
d_b, Bicycle Delay [s]	13.35	29.62	13.35
I_b,int, Bicycle LOS Score for Intersection	1.560	2.883	2.894
Bicycle LOS	A	C	C

**Sequence**

Ring 1	1	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



**Intersection Level Of Service Report**

**Intersection 1: Glen Oaks Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	23.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
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]	55.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

**Volumes**

Name	Glen Oaks Road		Rancho California Road		Rancho California Road	
Base Volume Input [veh/h]	392	171	384	365	199	557
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]	392	171	384	365	199	557
Peak Hour Factor	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
Total 15-Minute Volume [veh/h]	105	46	103	98	53	149
Total Analysis Volume [veh/h]	420	183	411	391	213	596
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Number of Conflicting Circulating Lanes	1		1		1	
Circulating Flow Rate [veh/h]	419		217		428	
Exiting Flow Rate [veh/h]	616		1036		606	
Demand Flow Rate [veh/h]	392	171	384	365	199	557
Adjusted Demand Flow Rate [veh/h]	420	183	411	391	213	596

**Lanes**

Override Calculated Critical Headway	No		No		No	
User-Defined Critical Headway [s]	4.00		4.00		4.00	
Override Calculated Follow-Up Time	No		No		No	
User-Defined Follow-Up Time [s]	3.00		3.00		3.00	
A (intercept)	1380.00		1380.00		1380.00	
B (coefficient)	0.00102		0.00102		0.00102	
HV Adjustment Factor	0.98		0.98		0.98	
Entry Flow Rate [veh/h]	616		819		826	
Capacity of Entry and Bypass Lanes [veh/h]	900		1106		892	
Pedestrian Impedance	1.00		1.00		1.00	
Capacity per Entry Lane [veh/h]	883		1085		874	
X, volume / capacity	0.68		0.74		0.93	

**Movement, Approach, & Intersection Results**

Lane LOS	C		C		E	
95th-Percentile Queue Length [veh]	5.59		7.10		13.82	
95th-Percentile Queue Length [ft]	139.63		177.52		345.58	
Approach Delay [s/veh]	15.82		15.81		36.69	
Approach LOS	C		C		E	
Intersection Delay [s/veh]			23.44			
Intersection LOS			C			

**Intersection Level Of Service Report**

**Intersection 2: Anza Road (NS) at Rancho California Road (EW)**

Control Type:	Roundabout	Delay (sec / veh):	16.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes		

**Intersection Setup**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Anza Road			Anza Road			Rancho California			Rancho California		
Base Volume Input [veh/h]	116	27	316	25	7	59	41	788	77	272	982	28
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]	116	27	316	25	7	59	41	788	77	272	982	28
Peak Hour Factor	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510	0.9510
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]	30	7	83	7	2	16	11	207	20	72	258	7
Total Analysis Volume [veh/h]	122	28	332	26	7	62	43	829	81	286	1033	29
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

Number of Conflicting Circulating Lanes	1			1			1			1		
Circulating Flow Rate [veh/h]	916			1470			325			197		
Exiting Flow Rate [veh/h]	381			102			1241			1211		
Demand Flow Rate [veh/h]	116	27	316	25	7	59	41	788	77	272	982	28
Adjusted Demand Flow Rate [veh/h]	122	28	332	26	7	62	43	829	81	286	1033	29

**Lanes**

Override Calculated Critical Headway	No	No	No	No	No	No
User-Defined Critical Headway [s]	4.00	4.00	4.00	4.00	4.00	4.00
Override Calculated Follow-Up Time	No	No	No	No	No	No
User-Defined Follow-Up Time [s]	3.00	3.00	3.00	3.00	3.00	3.00
A (intercept)	1380.00	1380.00	1420.00	1420.00	1420.00	1420.00
B (coefficient)	0.00102	0.00102	0.00091	0.00091	0.00091	0.00091
HV Adjustment Factor	0.98	0.98	0.98	0.98	0.98	0.98
Entry Flow Rate [veh/h]	492	97	457	516	647	729
Capacity of Entry and Bypass Lanes [veh/h]	543	309	1057	1057	1188	1188
Pedestrian Impedance	1.00	1.00	1.00	1.00	1.00	1.00
Capacity per Entry Lane [veh/h]	532	303	1036	1036	1164	1164
X, volume / capacity	0.91	0.31	0.43	0.49	0.54	0.61

**Movement, Approach, & Intersection Results**

Lane LOS	E	C	A	A	A	B
95th-Percentile Queue Length [veh]	10.70	1.31	2.22	2.74	3.41	4.42
95th-Percentile Queue Length [ft]	267.51	32.74	55.51	68.60	85.23	110.54
Approach Delay [s/veh]	46.94	18.86	8.75		10.24	
Approach LOS	E	C	A		B	
Intersection Delay [s/veh]	16.18					
Intersection LOS	C					

**Intersection Level Of Service Report**

**Intersection 4: Butterfield Stage Road (NS) at Rancho California Road (EW)**

Control Type:	Signalized	Delay (sec / veh):	54.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.887

**Intersection Setup**

Name	Butterfield Stage Road			Butterfield Stage Road			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	1	0	0	1	0	0	2	0	0	1	0	1
Entry Pocket Length [ft]	210.00	100.00	100.00	235.00	100.00	100.00	260.00	100.00	100.00	110.00	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]	55.00			55.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

**Volumes**

Name	Butterfield Stage Road			Butterfield Stage Road			Rancho California Road			Rancho California Road		
	99	480	179	313	579	136	157	851	154	203	804	216
Base Volume Input [veh/h]	99	480	179	313	579	136	157	851	154	203	804	216
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]	99	480	179	313	579	136	157	851	154	203	804	216
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	123	46	80	148	35	40	218	39	52	206	55
Total Analysis Volume [veh/h]	101	491	183	320	593	139	161	871	158	208	823	221
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 major street		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing major street		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing minor street		0			0			0			0	
v_ci, Inbound Pedestrian Volume crossing minor street		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	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Overla
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]	25	40	0	25	40	0	11	38	0	17	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	29	0	0	29	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	36	36	21	49	49	7	34	34	13	40	65
g / C, Green / Cycle	0.07	0.30	0.30	0.18	0.40	0.40	0.06	0.28	0.28	0.11	0.33	0.54
(v / s)_i Volume / Saturation Flow Rate	0.06	0.19	0.19	0.18	0.20	0.20	0.05	0.28	0.28	0.12	0.23	0.14
s, saturation flow rate [veh/h]	1781	1870	1699	1781	1870	1749	3459	1870	1771	1781	3560	1589
c, Capacity [veh/h]	127	564	512	312	758	709	202	527	499	193	1182	859
d1, Uniform Delay [s]	54.88	36.09	36.12	49.50	26.60	26.61	55.79	43.09	43.09	53.50	34.84	14.73
k, delay calibration	0.11	0.50	0.50	0.24	0.50	0.50	0.11	0.45	0.46	0.11	0.11	0.11
l, 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]	10.80	5.17	5.73	42.58	2.34	2.50	7.01	37.65	39.41	53.22	0.75	0.16
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	0.63	0.63	1.03	0.50	0.50	0.80	1.00	1.00	1.08	0.70	0.26
d, Delay for Lane Group [s/veh]	65.69	41.26	41.85	92.08	28.94	29.11	62.80	80.74	82.50	106.72	35.59	14.89
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]	3.27	9.19	8.46	12.56	7.99	7.51	2.53	20.28	19.46	8.47	10.00	2.99
50th-Percentile Queue Length [ft/ln]	81.63	229.71	211.62	313.96	199.87	187.81	63.17	507.06	486.44	211.69	250.03	74.80
95th-Percentile Queue Length [veh/ln]	5.88	14.16	13.24	18.62	12.63	12.01	4.55	27.69	26.76	13.63	15.19	5.39
95th-Percentile Queue Length [ft/ln]	146.93	353.99	330.90	465.44	315.80	300.18	113.70	692.26	668.96	340.86	379.69	134.65

**Movement, Approach, & Intersection Results**

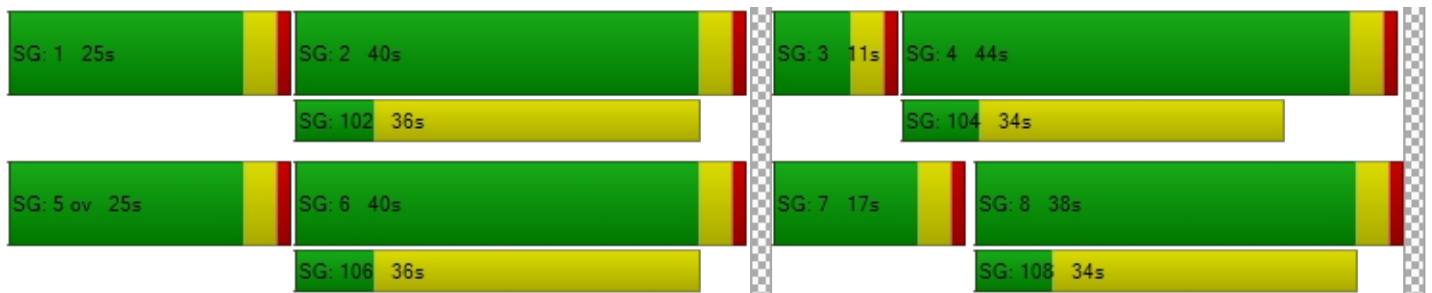
d_M, Delay for Movement [s/veh]	65.69	41.43	41.85	92.08	29.00	29.11	62.80	81.43	82.50	106.72	35.59	14.89
Movement LOS	E	D	D	F	C	C	E	F	F	F	D	B
d_A, Approach Delay [s/veh]	44.69			48.21			79.05			43.75		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	54.86											
Intersection LOS	D											
Intersection V/C	0.887											

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	11.0			11.0			11.0			11.0		
M_corner, Corner Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft <sup>2</sup> /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	49.51			49.51			49.51			49.51		
I_p,int, Pedestrian LOS Score for Intersection	2.934			3.002			3.077			3.178		
Crosswalk LOS	C			C			C			C		
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	600			600			567			667		
d_b, Bicycle Delay [s]	29.40			29.40			30.82			26.67		
I_b,int, Bicycle LOS Score for Intersection	2.199			2.428			2.541			2.593		
Bicycle LOS	B			B			B			B		

**Sequence**

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



## **Appendix H**

Special Events Operation Schedule

