

## **Appendix I: Traffic Impact Study**

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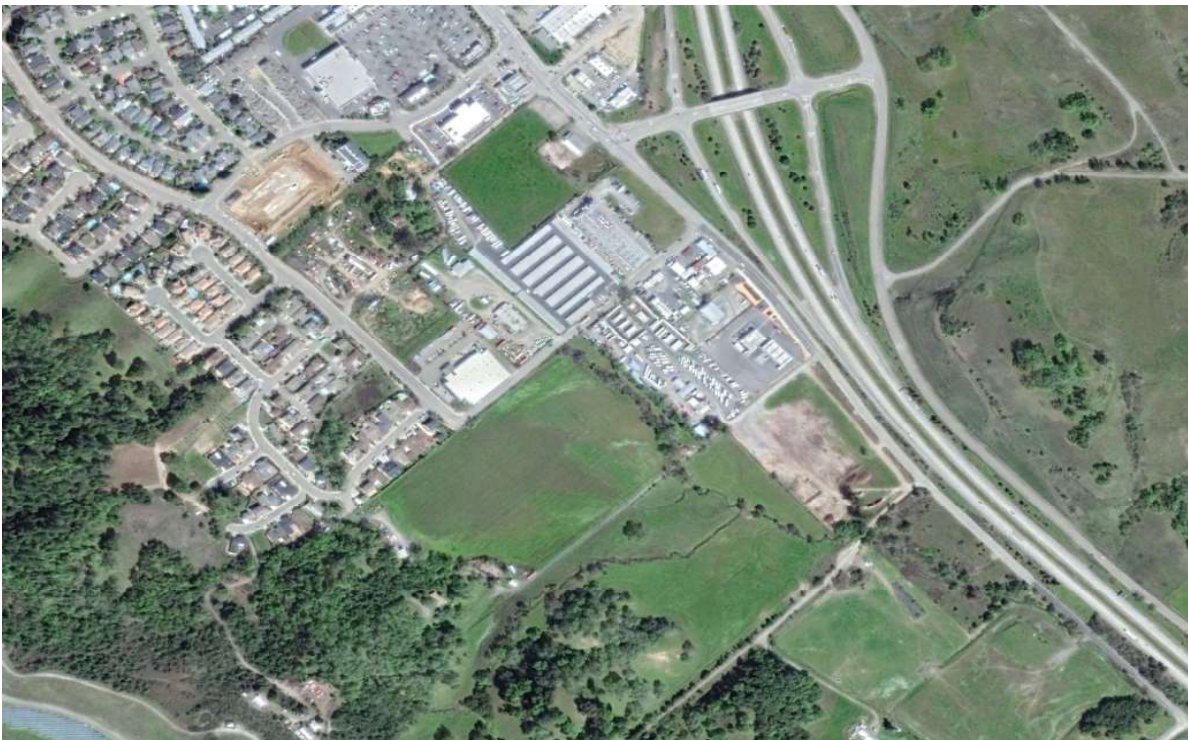
## **I.1 - Traffic Impact Study**

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# Traffic Impact Study for the Baumgardner Ranch Project



Prepared for the City of Cloverdale

Submitted by  
**W-Trans**

May 28, 2019



**TRAFFIC ENGINEERING  
TRANSPORTATION PLANNING**  
*Balancing Functionality and Livability since 1995*  
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# Executive Summary

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The Baumgardner Ranch project includes 79 single-family homes, 60 row-house units, and 166 apartments to be located on an undeveloped parcel on the west side of South Redwood Highway that would be annexed into the City of Cloverdale. The proposed project would be expected to result in 2,092 new daily trips on average, including 152 trips during the weekday a.m. peak hour and 192 trips during the p.m. peak hour.

The operational analysis study area includes seven intersections in the vicinity of the project site and a new intersection that would be created by the project on South Redwood Highway. Analysis indicates that under Existing Conditions all study intersections are operating acceptably overall and on all side-street approaches during both peak hours. The addition of project traffic would cause the intersection of US 101 Overpass/US 101 North Ramps to deteriorate to LOS E overall and LOS F on the minor street approach during the p.m. peak hour, which would be considered unacceptable operation. With implementation of all-way stop-controls, which is recommended as mitigation, the intersection would operate acceptably at LOS C and the project's impact would be considered less-than-significant.

Under the anticipated Future volumes, and with the planned signalization of Cloverdale Boulevard/Treadway Drive but without project-generated trips, the study intersections are expected to continue operating acceptably except for US 101 Overpass/US 101 North Ramps, which would operate at LOS D overall and LOS F on the off-ramp approach during the p.m. peak hour. With the addition of project traffic, the study intersections would continue operating acceptably, except for US 101 Overpass/US 101 North Ramps, which would deteriorate to LOS F both overall and on the stop-controlled approach. With the all-way stop-controls recommended to address impacts under Existing plus Project conditions, the intersection would operate acceptably at LOS C, and the project's impact would be reduced to less-than-significant.

Bicycle facilities, as proposed, are consistent with the *SCTA Countywide Bicycle and Pedestrian Master Plan* and would adequately serve the site and surrounding uses. Sufficient bicycle parking would be provided on-site for use by residents of the apartments. Access for pedestrians and transit would be adequate as the project site would be connected to the surrounding pedestrian network. All new curb ramps constructed with the project should be ADA compliant.

Adequate corner and following sight distances are available at the new intersection on South Redwood Highway and would be available at Foothill Boulevard/Sandholm Lane with removal of the vegetation on the southeast corner. Sight lines are expected to be adequate at the project driveways and the entrance to the neighborhood of single-family homes, though street parking along the Foothill Boulevard extension should be prohibited within the vision triangle at the project access points. Additionally, any new landscaping or monuments along the project frontages should be clear between three and seven feet in height from the top of pavement to allow for unobstructed sight lines.

The travel speeds observed on Foothill Boulevard and South Redwood Highway are consistent with expectations for each respective facility and volumes would not meet the threshold for installation of a left-turn lane at the intersection on South Redwood Highway created by the new project street. It is recommended that the intersections of South Redwood Highway/Street A, Foothill Boulevard/Sandholm Lane, and Foothill Boulevard/Unnamed Project Street all be stop-controlled on the minor street approaches; this would require removal of the existing stop sign on southbound Foothill Boulevard at Sandholm Lane.

The proposed parking supply would not satisfy City requirements, but would be adequate to meet the reduced parking requirements allowed under state law for projects providing affordable housing.

# Introduction

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This report presents an analysis of the potential traffic impacts associated with the proposed Baumgardner Ranch residential development to be located on a parcel on the west side of South Redwood Highway between Sandholm Lane and Kelly Road in the City of Cloverdale. The traffic study was completed in accordance with the criteria established by the City, reflects a scope of work approved by City staff, and is consistent with standard traffic engineering techniques.

## Prelude

The purpose of a traffic impact study is to provide City staff and policy makers with data that they can use to make an informed decision regarding the potential traffic impacts of a proposed project, and any associated improvements that would be required to mitigate these impacts to a level of insignificance as defined by the City's General Plan or other policies. Vehicular traffic impacts are typically evaluated by determining the number of new trips that the proposed use would be expected to generate, distributing these trips to the surrounding street system based on existing travel patterns or anticipated travel patterns specific to the proposed project, then analyzing the impact the new traffic would be expected to have on critical intersections or roadway segments. Impacts relative to access for pedestrians, bicyclists, and to transit are also addressed.

## Project Profile

The proposed project includes 79 single-family homes, 60 row-house units, and 166 apartments to be located on an undeveloped parcel on the west side of South Redwood Highway. As part of the project the land would be annexed into the City of Cloverdale. The development would be accessed via an extension of Foothill Boulevard and a new public street that would connect to South Redwood Highway between the Renner Petroleum property and the planned Vintners Co-op project. The location of the project site is shown in Figure 1.





Traffic Impact Study for the Baumgardner Ranch Project  
**Figure 1 – Study Area and Existing Lane Configurations**

# Transportation Setting

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## Operational Analysis

### Study Area and Periods

The study area consists of the new project streets as well as the following intersections. While the project intersection of Foothill Boulevard/Project Street A was evaluated in terms of geometrics and right-of-way controls, an operational analysis for the intersection was not performed as there would be no conflicting movements so there would be no associated delays.

1. Cloverdale Boulevard/Treadway Drive
2. Treadway Drive/Foothill Boulevard
3. Cloverdale Boulevard/US 101 Overpass
4. US 101 Overpass/ US 101 South Ramps
5. US 101 Overpass/US 101 North Ramps
6. South Redwood Highway/Sandholm Lane
7. Foothill Boulevard/Sandholm Lane
8. South Redwood Highway/Project Street A

Operating conditions during the weekday a.m. and p.m. peak periods were evaluated to capture the highest potential impacts for the proposed project as well as the highest volumes on the local transportation network. The morning peak hour occurs between 7:00 and 9:00 a.m. and reflects conditions during the home to work or school commute, while the p.m. peak hour occurs between 4:00 and 6:00 p.m. and typically reflects the highest level of congestion during the homeward-bound commute.

### Study Roadways

**Foothill Boulevard** is a two-lane roadway that runs on a skewed northwest-southeast alignment in the study area, though for the purposes of this study it was assumed to run north-south. The segment to the north of Sandholm Lane is 50 feet wide and has a 12-foot travel lane, five-foot bike lane, and 8 feet for on-street parking in each direction. The roadway has a posted speed limit of 25 miles per hour (mph). Based on count data collected in February 2019, the segment between Treadway Drive and Sandholm Lane has an average daily traffic (ADT) volume of approximately 710.

**South Redwood Highway** also runs on a skewed northwest-southeast alignment in the study area and was assumed to run north-south. The roadway has a 12-foot travel lane and Class II bike lane in each direction and a posted speed limit of 35 mph within City limits and 50 mph to the south. There is a two-way left-turn lane (TWLTL) between the US 101 Overpass and approximately 185 feet south of Sandholm Lane and the segment along the Renner Petroleum property was recently widened to accommodate a future extension of the TWLTL to the south. The roadway has an ADT volume of approximately 1,380 to the south of Sandholm Lane. South Redwood Highway becomes Cloverdale Boulevard north of the US 101 Overpass and is called Dutcher Creek Road south of City limits.

### Study Intersections

**Cloverdale Boulevard/Treadway Drive** is a tee intersection, stop-controlled on the eastbound Treadway Drive approach. There are bike lanes on all three approaches and parking is allowed on the east side of Cloverdale Boulevard. Crosswalks are provided on the north and west legs. Design plans to signalize the intersection and the adjacent intersection of Cloverdale Boulevard/Santana Drive have been prepared and construction is anticipated to occur in the near term.



**Treadway Drive/Foothill Boulevard** is a tee intersection, stop-controlled on the westbound Treadway Drive approach. Bike lanes are striped on Treadway Drive and Foothill Boulevard and parking is permitted on both sides of Foothill Boulevard. A crosswalk is present on the north leg.

**Cloverdale Boulevard/US 101 Overpass** is a tee-intersection, stop-controlled on the westbound overpass approach.

**US 101 Overpass/US 101 South Ramps** is a four-legged intersection with stop controls on the southbound off-ramp approach. The south leg is the on-ramp to US 101 South.

**US 101 Overpass/US 101 North Ramps** is a four-legged intersection with stop controls on the northbound off-ramp approach. The north leg is the on-ramp to US 101 North.

**South Redwood Highway/Sandholm Lane** is a tee intersection, stop-controlled on the eastbound Sandholm Lane approach. Bike lanes are present in both directions of South Redwood Highway.

**Foothill Boulevard/Sandholm Lane** is a two-legged intersection with stop controls on both approaches. Bike lanes are present on Foothill Boulevard, which currently terminates at the intersection, but would be extended south as part of the project.

**South Redwood Highway/Street A** is a new intersection that would be constructed with the project approximately 750 feet south of Cloverdale Boulevard/Sandholm Lane. The intersection would be stop-controlled on the eastbound project street approach.

The locations of the study intersections and the existing lane configurations and controls are shown in Figure 1.

## Collision History

The collision history for the study area was reviewed to determine any trends or patterns that may indicate a safety issue. Collision rates were calculated based on records available from the California Highway Patrol as published in their *Statewide Integrated Traffic Records System* (SWITRS) reports. The most current five-year period available is October 1, 2013 through September 30, 2018.

As presented in Table 1, the calculated collision rates for the study intersections were compared to average collision rates for similar facilities statewide, as indicated in *2014 Collision Data on California State Highways*, California Department of Transportation (Caltrans). During the five-year study period, Cloverdale Boulevard/Treadway Drive had a collision rate higher than the statewide average for that type of facility; the remaining intersections had collision rates below the statewide average for similar facilities indicating that they are operating acceptably with regards to safety. The collision rate calculations are provided in Appendix A.

**Table 1 – Collision Rates at the Study Intersections**

<b>Study Intersection</b>	<b>Number of Collisions (2013-2018)</b>	<b>Calculated Collision Rate (c/mve)</b>	<b>Statewide Average Collision Rate (c/mve)</b>
1. Cloverdale Blvd/Treadway Dr	4	<b>0.23</b>	0.18
2. Treadway Dr/Foothill Blvd	0	0.00	0.18
3. Cloverdale Blvd/US 101 Overpass	1	0.06	0.18
4. US 101 Overpass/US 101 S Ramps	1	0.07	0.15
5. US 101 Overpass/US 101 N Ramps	0	0.00	0.15
6. S Redwood Hwy/Sandholm Ln	0	0.00	0.18
7. Foothill Blvd/Sandholm Ln	0	0.00	0.05

Note: c/mve = collisions per million vehicles entering; **bold** text = collision rate is higher than the statewide average

Of the four collisions that occurred at Cloverdale Boulevard/Treadway Drive, one was a broadside, one was a sideswipe, and the other two were vehicle-pedestrian collisions attributed to pedestrian right-of-way violations. The City has already initiated a project to signalize the intersection, which would help clarify right-of-way and enhance safety for pedestrians, thereby addressing the pattern of crashes at this location.

## Alternative Modes

### Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. In general, a connected network of sidewalks, crosswalks, and curb ramps provide access for pedestrians on Foothill Boulevard, but such facilities are lacking on Sandholm Lane and Cloverdale Boulevard.

- **Foothill Boulevard** – Continuous sidewalks exist on both sides of Foothill Boulevard between Sandholm Lane and West Cherry Creek Road. Curb ramps are provided at intersections, though without yellow truncated domes, so are not compliant with current Americans with Disability Act (ADA) standards. Pedestrians can use the crosswalk at Treadway Drive to cross from one side of Foothill Boulevard to the other. Lighting is provided by street lights.
- **Sandholm Lane** – Lighting is provided by overhead street lights on the northwest side of the street, but there are no existing pedestrian facilities on Sandholm Lane.
- **South Redwood Highway** – The only sidewalk in the study area is along the recently constructed Renner Petroleum property frontage. Overhead street lighting is also provided along this segment of the roadway and on Cloverdale Boulevard north of the US 101 Overpass, but there are no street lights south of the Renner property.

### Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2017, classifies bikeways into three categories used by the City:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.

In the project area, Class II bike lanes exist on Cloverdale Boulevard, Foothill Boulevard, Treadway Drive, and the US 101 Overpass. Additionally, Sandholm Lane is planned to be a Class III bike route and Class II bike lanes are planned along the project's proposed extension of Foothill Boulevard. Table 2 summarizes the existing and planned bicycle facilities in the project vicinity, as contained in the *SCTA Countywide Bicycle and Pedestrian Master Plan*.

**Table 2 – Bicycle Facility Summary**

<b>Status Facility</b>	<b>Class</b>	<b>Length (miles)</b>	<b>Begin Point</b>	<b>End Point</b>
<b>Existing</b>				
Cloverdale Blvd – S Redwood Hwy	II	1.60	Healdsburg Ave	City Limits (South)
Foothill Blvd	II	1.10	Porterfield Creek Dr	Sandholm Ln
Treadway Dr	II	0.30	Foothill Blvd	Cloverdale Blvd
US 101 Overpass	II	0.20	Cloverdale Blvd	Asti Rd
<b>Planned</b>				
Cloverdale - Lake Sonoma Trail	I	5.08	Lake Sonoma	Dutcher Creek Rd
Foothill Boulevard Ext.	II	0.29	Sandholm Ln	Kelly Rd
Dutcher Creek Rd	II	5.27	City Limits (South)	Dry Creek Rd
Sandholm Ln	III	0.25	Foothill Blvd	Cloverdale Blvd

Source: *SCTA Countywide Bicycle and Pedestrian Master Plan*, Sonoma County Transportation Authority, 2014

## Transit Facilities

Transit services in the City of Cloverdale, and throughout Sonoma County, are provided by Sonoma County Transit (SCT). SCT Route 60 provides regional service between Cloverdale and Santa Rosa with stops in Geyserville, Healdsburg, and Windsor and operates seven days a week with approximately one-half to one-and-a-half-hour headways on weekdays between 6:00 a.m. and 10:00 p.m. and approximately one-hour to two-hour headways on weekends from 7:30 a.m. to 10:00 p.m. Route 60 stops on Cloverdale Boulevard at Sandholm Lane and is approximately one-quarter mile from the project site, which is considered an acceptable walking distance.

SCT Route 68, "The Cloverdale Shuttle," provides loop service to destinations throughout the City of Cloverdale and operates on weekdays with approximately 30-minute headways between 7:30 a.m. and 3:30 p.m. The nearest stop to the project site is approximately one-half mile away on Treadway Drive adjacent to the Grocery Outlet Bargain Market. While this is not generally considered an acceptable walking distance, the transit stop is accessible via bicycle as both Foothill Boulevard and Treadway Drive have bike lanes.

Two to three bicycles can be carried on most SCT buses. Bike rack space is on a first come, first served basis. Additional bicycles are allowed on SCT buses at the discretion of the driver.

Dial-a-ride, also known as paratransit, or door-to-door service, is available for those who are unable to independently use the transit system due to a physical or mental disability. SCT Paratransit is designed to serve the needs of individuals with disabilities within Cloverdale and the greater County of Sonoma area.

# Capacity Analysis

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## Intersection Level of Service Methodologies

Level of Service (LOS) is used to rank traffic operation on various types of facilities based on traffic volumes and roadway capacity using a series of letter designations ranging from A to F. Generally, Level of Service A represents free flow conditions and Level of Service F represents forced flow or breakdown conditions. A unit of measure that indicates a level of delay generally accompanies the LOS designation.

The study intersections were analyzed using methodologies published in the *Highway Capacity Manual* (HCM), Transportation Research Board, 2018. This source contains methodologies for various types of intersection control, all of which are related to a measurement of delay in average number of seconds per vehicle.

The Levels of Service for the intersections with side-street stop controls, or those which are unsignalized and have one or two approaches stop controlled, were analyzed using the “Two-Way Stop-Controlled” intersection capacity method from the HCM. This methodology determines a level of service for each minor turning movement by estimating the level of average delay in seconds per vehicle. Results are presented for individual movements together with the weighted overall average delay for the intersection.

The study intersection of Foothill Boulevard/Sandholm Lane, which has stop signs on both approaches was analyzed using the “All-Way Stop-Controlled” Intersection methodology from the HCM. This methodology evaluates delay for each approach based on turning movements, opposing and conflicting traffic volumes, and the number of lanes. Average vehicle delay is computed for the intersection as a whole, and is then related to a Level of Service.

Since Cloverdale Boulevard/Treadway Drive is planned to be signalized, levels of service for this intersection were evaluated using the signalized methodology from the HCM under Future Conditions. This methodology is based on factors including traffic volumes, green time for each movement, phasing, whether the signals are coordinated or not, truck traffic, and pedestrian activity. Average stopped delay per vehicle in seconds is used as the basis for evaluation in this LOS methodology. Delays were calculated using the signal phasing developed in the design process.

The ranges of delay associated with the various levels of service are indicated in Table 3.

**Table 3 – Intersection Level of Service Criteria**

<b>LOS</b>	<b>Two-Way Stop-Controlled</b>	<b>All-Way Stop-Controlled</b>	<b>Signalized</b>
A	Delay of 0 to 10 seconds. Gaps in traffic are readily available for drivers exiting the minor street.	Delay of 0 to 10 seconds. Upon stopping, drivers are immediately able to proceed.	Delay of 0 to 10 seconds. Most vehicles arrive during the green phase, so do not stop at all.
B	Delay of 10 to 15 seconds. Gaps in traffic are somewhat less readily available than with LOS A, but no queuing occurs on the minor street.	Delay of 10 to 15 seconds. Drivers may wait for one or two vehicles to clear the intersection before proceeding from a stop.	Delay of 10 to 20 seconds. More vehicles stop than with LOS A, but many drivers still do not have to stop.
C	Delay of 15 to 25 seconds. Acceptable gaps in traffic are less frequent, and drivers may approach while another vehicle is already waiting to exit the side street.	Delay of 15 to 25 seconds. Drivers will enter a queue of one or two vehicles on the same approach, and wait for vehicle to clear from one or more approaches prior to entering the intersection.	Delay of 20 to 35 seconds. The number of vehicles stopping is significant, although many still pass through without stopping.
D	Delay of 25 to 35 seconds. There are fewer acceptable gaps in traffic, and drivers may enter a queue of one or two vehicles on the side street.	Delay of 25 to 35 seconds. Queues of more than two vehicles are encountered on one or more approaches.	Delay of 35 to 55 seconds. The influence of congestion is noticeable, and most vehicles have to stop.
E	Delay of 35 to 50 seconds. Few acceptable gaps in traffic are available, and longer queues may form on the side street.	Delay of 35 to 50 seconds. Longer queues are encountered on more than one approach to the intersection.	Delay of 55 to 80 seconds. Most, if not all, vehicles must stop and drivers consider the delay excessive.
F	Delay of more than 50 seconds. Drivers may wait for long periods before there is an acceptable gap in traffic for exiting the side streets, creating long queues.	Delay of more than 50 seconds. Drivers enter long queues on all approaches.	Delay of more than 80 seconds. Vehicles may wait through more than one cycle to clear the intersection.

Reference: *Highway Capacity Manual*, Transportation Research Board, 2018

## Traffic Operation Standards

### City of Cloverdale

The *City of Cloverdale General Plan* indicates that traffic conditions should be maintained at the mid-D Level of Service threshold for peak hour intersection operation. The LOS standard was applied to the overall average intersection delay, and not any single movement or approach. Therefore, an average delay of up to 30 seconds at a stop-controlled intersection and up to 45 seconds at a signalized intersection will be considered acceptable. Exceptions to this standard will be allowed only where the City Council determines that improvements needed to maintain this standard are not feasible.

### Caltrans

Caltrans has jurisdiction over any intersection located on a state route, so the Caltrans standard is applicable to the study intersections along the US 101 Overpass, which is owned and maintained by Caltrans. In the *Guide for the Preparation of Traffic Impact Studies*, Caltrans indicates that they endeavor to maintain operation at the transition from LOS C to LOS D, which translates to an allowable delay of approximately 25 seconds for their stop-

controlled ramp intersections. Based on previous discussions with Caltrans staff, it is understood that the standard is to be applied to the overall average intersection delay, and *not* that associated with any single movement or approach. Under this approach, if one movement experiences very high delay and has moderate to high traffic volumes, the overall delay and level of service should reflect the critical nature of this condition. However, if one movement is expected to experience high delay, but has very low traffic volumes, the overall intersection operation will likely still meet Caltrans standards.

## Existing Conditions

The Existing Conditions scenario provides an evaluation of current operation based on existing traffic volumes during the weekday a.m. and p.m. peak periods. This condition does not include project-generated traffic volumes. Volume data was collected in February 2019 during clear weather and while local schools were in session.

## Intersection Levels of Service

Under Existing Conditions, the study intersections operate acceptably at LOS C or better overall with the minor street approaches operating acceptably at LOS D or better. The existing traffic volumes are shown in Figure 2. A summary of the intersection level of service calculations is contained in Table 4 and copies of the Level of Service calculations for all evaluated scenarios are provided in Appendix B.

**Table 4 – Existing Peak Hour Intersection Levels of Service**

Study Intersection Approach	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
1. Cloverdale Blvd/Treadway Dr <i>Eastbound (Treadway Dr) Approach</i>	3.1 <i>11.4</i>	A <i>B</i>	4.5 <i>16.3</i>	A <i>C</i>
2. Treadway Dr/Foothill Blvd <i>Westbound (Treadway Dr) Approach</i>	5.2 <i>9.2</i>	A <i>A</i>	7.1 <i>9.4</i>	A <i>A</i>
3. Cloverdale Blvd/US 101 Overpass <i>Westbound (Overpass) Approach</i>	7.8 <i>11.4</i>	A <i>B</i>	10.1 <i>14.8</i>	B <i>B</i>
4. US 101 Overpass/101 South Ramps <i>Southbound (Off-Ramp) Approach</i>	1.2 <i>9.7</i>	A <i>A</i>	1.1 <i>12.9</i>	A <i>B</i>
5. US 101 Overpass/101 North Ramps <i>Northbound (Off-Ramp) Approach</i>	6.6 <i>10.9</i>	A <i>B</i>	23.4 <i>33.9</i>	C <i>D</i>
6. South Redwood Hwy/Sandholm Ln <i>Eastbound (Sandholm Ln) Approach</i>	2.0 <i>9.4</i>	A <i>A</i>	1.7 <i>9.8</i>	A <i>A</i>
7. Foothill Blvd/Sandholm Ln	7.0	A	6.8	A

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*





**Traffic Impact Study for the Baumgardner Ranch Project**  
**Figure 2 – Existing Traffic Volumes**

## Future Conditions

Future volumes in the study area were developed using information contained in the County's gravity demand model maintained by the Sonoma County Transportation Authority (SCTA). Typically, the "Furness" method is used to calculate future turning movements at intersections based on existing turning movement data, base year link volumes, and future link volumes; however, many roads in the study area are not included in the County's model so growth factors were used instead.

Growth factors were calculated for the four facilities that are included in the model (Cloverdale Boulevard, US 101 Overpass, US 101 North Ramps, and US 101 South Ramps) and then adjusted to account for the nine years of growth that have already occurred between the base year (2010) and existing (2019) counts. The adjusted growth factors were applied to the existing counts collected for this study to determine likely future (2040) turning movement volumes at the study intersections. At the study intersections for which information was not available in the model, an average growth factor for the area was applied. It should be noted that the County's model is projecting substantial growth in the study area, resulting in an average growth factor of 1.45 during the a.m. peak hour and 1.41 during the p.m. peak hour. The growth factor calculations are included in Appendix C.

Under the anticipated Future volumes, and with the planned signalization of Cloverdale Boulevard/Treadway Drive, the study intersections are expected to continue operating acceptably except for US 101 Overpass/US 101 North Ramps, which would deteriorate to LOS D overall and LOS F on the minor street approach during the p.m. peak hour. Future volumes are shown in Figure 3 and operating conditions are summarized in Table 5.

**Table 5 – Future Peak Hour Intersection Levels of Service**

Study Intersection Approach	AM Peak		PM Peak	
	Delay	LOS	Delay	LOS
1. Cloverdale Blvd/Treadway Dr	13.2	B	13.7	B
2. Treadway Dr/Foothill Blvd	5.3	A	7.3	A
<i>Westbound (Treadway Dr) Approach</i>	9.6	A	9.7	A
3. Cloverdale Blvd/US 101 Overpass	7.9	A	14.5	B
<i>Westbound (Overpass) Approach</i>	13.0	B	23.4	C
4. US 101 Overpass/101 South Ramps	1.3	A	1.5	A
<i>Southbound (Off-Ramp) Approach</i>	10.1	B	15.7	C
5. US 101 Overpass/101 North Ramps	7.4	A	<b>32.6</b>	<b>D</b>
<i>Northbound (Off-Ramp) Approach</i>	11.6	B	<b>50.8</b>	<b>F</b>
With All-Way Stop-Controls	8.7	A	16.8	C
6. South Redwood Hwy/Sandholm Ln	1.9	A	1.7	A
<i>Eastbound (Sandholm Ln) Approach</i>	9.7	A	10.4	B
7. Foothill Blvd/Sandholm Ln	7.1	A	6.8	A

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*; shaded cells = conditions with recommended improvements

As shown in Table 5, installation of all-way stop-controls at the intersection of US 101 Overpass/US 101 South Ramps would result in acceptable operation under the expected Future volumes. The City may wish to consider coordinating with Caltrans to make this improvement to accommodate the expected growth in traffic on the off-ramp during the evening peak hour.





**Traffic Impact Study for the Baumgardner Ranch Project**  
**Figure 3 – Future Traffic Volumes**

## Project Description

As proposed, the project includes 79 single-family homes, 60 row-house units, and 166 apartments to be constructed on the Baumgardner Ranch property which would be annexed into the City of Cloverdale. The development would be accessed via an extension of Foothill Boulevard and a new public street that would connect Foothill Boulevard to South Redwood Highway. The proposed site plan is shown in Figure 4.

## Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 10<sup>th</sup> Edition, 2017. Rates for “Single Family Detached Housing” (ITE LU#210) were applied to the single-family residences, rates for “Multifamily Housing (Mid-Rise)” were applied to the apartments, and rates for “Residential Planned Unit Development” were applied to the row-house units. The site is currently vacant so no trip credits for existing uses were given. Based on application of these rates, the proposed project would be expected to generate an average of 2,092 trips per day, including 152 trips during the a.m. peak hour and 192 trips during the p.m. peak hour.

These results are summarized in Table 6.

**Table 6 – Trip Generation Summary**

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Single Family Detached Housing	79 du	9.44	746	0.74	58	15	43	0.99	78	49	29
Multifamily Housing (Mid-Rise)	166 du	5.44	903	0.36	60	16	44	0.44	73	45	28
Residential PUD	60 du	7.38	443	0.57	34	8	26	0.69	41	27	14
<b>Total</b>			<b>2,092</b>		<b>152</b>	<b>39</b>	<b>113</b>		<b>192</b>	<b>121</b>	<b>71</b>

Note: du = dwelling unit; PUD = Planned Unit Development

## Trip Distribution

The pattern used to allocate new project trips to the street network was determined based on familiarity with the area and surrounding region and likely origins and destinations for residents of the subdivision. The distribution assumptions are summarized in Table 7 and the project volumes are shown in Figure 5.

**Table 7 – Trip Distribution Assumptions**

Route	Percent
US 101 (To/From South)	45
US 101 (To/From North)	10
South Redwood Hwy (To/From South)	10
Cloverdale Blvd (To/From North)	30
Foothill Blvd (To/From North)	5
<b>TOTAL</b>	<b>100%</b>







**Traffic Impact Study for the Baumgardner Ranch Project**  
**Figure 5 – Project Traffic Volumes**



## Intersection Operation

### Existing plus Project Conditions

Upon the addition of project-related traffic to the Existing volumes, the study intersections would continue operating acceptably during the morning peak hour, but the intersection of US 101 Overpass/US 101 North Ramps would drop to LOS E overall and LOS F on the stop-controlled approach during the evening peak hour, which would be considered unacceptable under the Caltrans standards applied. To mitigate this impact, it is recommended that the project be responsible for installing stop signs and legends on the currently uncontrolled Overpass approaches to the intersection. This improvement would reduce the overall delay to an acceptable level at LOS C and the project's impact to less-than-significant. Operating conditions for this scenario are summarized in Table 8.

**Table 8 – Existing and Existing plus Project Peak Hour Intersection Levels of Service**

Study Intersection <i>Approach</i>	Existing Conditions		Existing plus Project	
	AM Peak Delay/ LOS	PM Peak Delay/ LOS	AM Peak Delay/ LOS	PM Peak Delay/ LOS
1. Cloverdale Blvd/Treadway Dr <i>Eastbound (Treadway Dr) Approach</i>	3.1 /A <i>11.4 /B</i>	4.5 /A <i>16.3 /C</i>	3.1 /B <i>11.7 /B</i>	4.6 /A <i>17.8 /C</i>
2. Treadway Dr/Foothill Blvd <i>Westbound (Treadway Dr) Approach</i>	5.2 /A <i>9.2 /A</i>	7.1 /A <i>9.4 /A</i>	4.8 /B <i>9.3 /A</i>	6.9 /A <i>9.5 /A</i>
3. Cloverdale Blvd/US 101 Overpass <i>Westbound (Overpass) Approach</i>	7.8 /A <i>11.4 /B</i>	10.1 /B <i>14.8 /B</i>	8.1 /A <i>14.8 /B</i>	11.2 /B <i>17.7 /C</i>
4. US 101 Overpass/101 South Ramps <i>Southbound (Off-Ramp) Approach</i>	1.2 /A <i>9.7 /A</i>	1.1 /A <i>12.9 /B</i>	1.1 /A <i>9.9 /A</i>	1.2 /A <i>13.8 /B</i>
5. US 101 Overpass/101 North Ramps <i>Northbound (Off-Ramp) Approach</i>	6.6 /A <i>10.9 /B</i>	23.4 /C <i>33.9 /D</i>	7.2 /A <i>11.5 /B</i>	<b>38.8 /E</b> <b>55.8 /F</b>
With All-Way Stop-Controls	-	-	8.6 /A	20.3 /C
6. South Redwood Hwy/Sandholm Ln <i>Eastbound (Sandholm Ln) Approach</i>	2.0 /A <i>9.4 /A</i>	1.7 /A <i>9.8 /A</i>	3.7 /A <i>10.2 /B</i>	2.4 /A <i>11.0 /B</i>
7. Foothill Blvd/Sandholm Ln	7.0 /A	6.8 /A	7.1 /A	7.5 /A
8. S Redwood Hwy/Project St A <i>Eastbound (Project St) Approach</i>	- -	- -	2.2 /A <i>9.1 /A</i>	1.3 /A <i>9.4 /A</i>

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*; **Bold** Text = deficient operation; **Shaded** cells = mitigated conditions

It should be noted that with the addition of project-related traffic volumes, average delay at the intersection of US 101 Overpass/US 101 South Ramps decreases slightly during the a.m. peak hour and average delay at Treadway Drive/Foothill Boulevard decreases slightly during both peak hours. While this is counter-intuitive, this condition occurs when a project adds trips to movements that are currently underutilized or have delays that are below the intersection average, resulting in a better balance between approaches and lower overall average delay. At these locations, the project adds trips predominantly to the through and right-turn movements, which have delays that are lower than the overall intersection average, resulting in a slight reduction in average delay. The conclusion

could incorrectly be drawn that the project improves operation based on this data alone; however, it is more appropriate to conclude that the project trips are expected to make use of excess capacity, so drivers will experience little, if any, change in conditions because of the project.

**Finding** – The addition of project traffic would cause the intersection of US 101 Overpass/US 101 North Ramps to deteriorate to LOS E overall and LOS F on the minor street approach during the p.m. peak hour; all other intersections would continue operating acceptably.

**Recommendation** – As mitigation, it is recommended that the project install stop signs and associated markings on the Overpass approaches to the intersection of US 101 Overpass/US 101 North Ramps.

## Future plus Project Conditions

Upon the addition of project-generated traffic to the anticipated Future volumes, and with the planned signalization of Cloverdale Boulevard/Treadway Drive, the study intersections that were operating acceptably without project traffic would continue to do so and US 101 Overpass/US 101 North Ramps would continue to operate unacceptably with increased delays during the p.m. peak hour. With all-way stop-controls installed at US 101 Overpass/US 101 North Ramps, which was identified as being needed under Existing plus Project Conditions, the intersection would operate acceptably at LOS C. Future plus Project operating conditions are summarized in Table 9.

**Table 9 – Future and Future plus Project Peak Hour Intersection Levels of Service**

Study Intersection Approach	Future Conditions		Future plus Project	
	AM Peak Delay/ LOS	PM Peak Delay/ LOS	AM Peak Delay/ LOS	PM Peak Delay/ LOS
1. Cloverdale Blvd/Treadway Dr	13.2 /B	13.7 /B	13.0 /B	13.6 /B
2. Treadway Dr/Foothill Blvd <i>Westbound (Treadway Dr) Approach</i>	5.3 /A 9.6 /A	7.3 /A 9.7 /A	5.1 /A 9.7 /A	7.1 /A 9.8 /A
3. Cloverdale Blvd/US 101 Overpass <i>Westbound (Overpass) Approach</i>	7.9 /A 13.0 /B	14.5 /B 23.4 /C	9.0 /A 18.9 /C	17.4 /C 29.7 /D
4. US 101 Overpass/101 South Ramps <i>Southbound (Off-Ramp) Approach</i>	1.3 /A 10.1 /B	1.5 /A 15.7 /C	1.3 /A 10.2 /B	1.6 /A 17.0 /C
5. US 101 Overpass/101 North Ramps <i>Northbound (Off-Ramp) Approach</i>	7.4 /A 11.6 /B	<b>32.6 /D</b> <b>50.8 /F</b>	7.9 /A 12.2 /B	<b>57.3 /F</b> <b>87.8 /F</b>
With All-Way Stop-Controls	8.7 /A	16.8 /C	8.9 /A	22.1 /C
6. South Redwood Hwy/Sandholm Ln <i>Eastbound (Sandholm Ln) Approach</i>	1.9 /A 9.7 /A	1.7 /A 10.4 /B	3.3 /A 10.6 /B	2.3 /A 11.1 /B
7. Foothill Blvd/Sandholm Ln	7.1 /A	6.8 /A	7.1 /A	7.4 /A
8. South Redwood Hwy/Project St A <i>Eastbound (Project St) Approach</i>	- -	- -	1.6 /A 9.5 /A	1.0 /A 9.7 /A

Notes: Delay is measured in average seconds per vehicle; LOS = Level of Service; Results for minor approaches to two-way stop-controlled intersections are indicated in *italics*; **Bold** text = deficient operation; Shaded cells = mitigated conditions

It is noted that delays are expected to decrease with the addition of project trips to Future volumes at the intersections of Cloverdale Boulevard/Treadway Drive and Treadway Drive/Foothill Boulevard for the same reasons identified in the Existing plus Project scenario discussion.

**Finding** – With the addition of project traffic to Future volumes, the study intersections would continue operating acceptably, except for US 101 Overpass/US 101 North Ramps, which would deteriorate to LOS F overall and on the stop-controlled approach during the p.m. peak hour.

**Recommendation** – As discussed for Existing plus Project conditions, it is recommended that the project install stop signs and legends on the Overpass approaches to the intersection of US 101 Overpass/US 101 North Ramps. This improvement would result in LOS C operation during the evening peak hour.

# Alternative Modes

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## Pedestrian Facilities

As shown in the site plan, sidewalks would be provided along all streets within the site, as well as on the proposed extension of Foothill Boulevard and the project frontage with Sandholm Lane. Additionally, as shown on the cross section in Figure 6, sidewalks would be provided on both sides of Project Street A. The project would include installation of crosswalks on the east and south legs of the Foothill Boulevard/Sandholm Lane intersection and across the new street connection from the single-family homes to Foothill Boulevard. Additionally, a crosswalk would be striped across Street A at its terminus with South Redwood Highway to connect the existing sidewalk along the Renner property to the proposed sidewalk along the Vintners Co-op property frontage. As proposed, the project site would be connected to the surrounding pedestrian network and residents would be able to walk to the surrounding residential areas as well the commercial uses on Treadway Drive.

**Finding** – As proposed, access for pedestrians would be adequate.

**Recommendation** – All new curb ramps constructed with the project should be ADA compliant.

## Bicycle Facilities

### Lanes and Routes

The proposed project would provide Class II bike lanes in both directions on the extension of Foothill Boulevard and the new project street. The proposed bike lanes on Foothill Boulevard are consistent with plans contained in the *SCTA Countywide Bicycle and Pedestrian Master Plan*, and while the project street is not included in the plan, the bike lanes proposed would connect Foothill Boulevard to South Redwood Highway. The existing bike lanes on Foothill Boulevard, Cloverdale Boulevard, and Treadway Drive combined with the proposed bike lanes on the Foothill Boulevard extension and the project street, together with the planned bike route on Sandholm Lane would provide adequate access for bicyclists in the project vicinity.

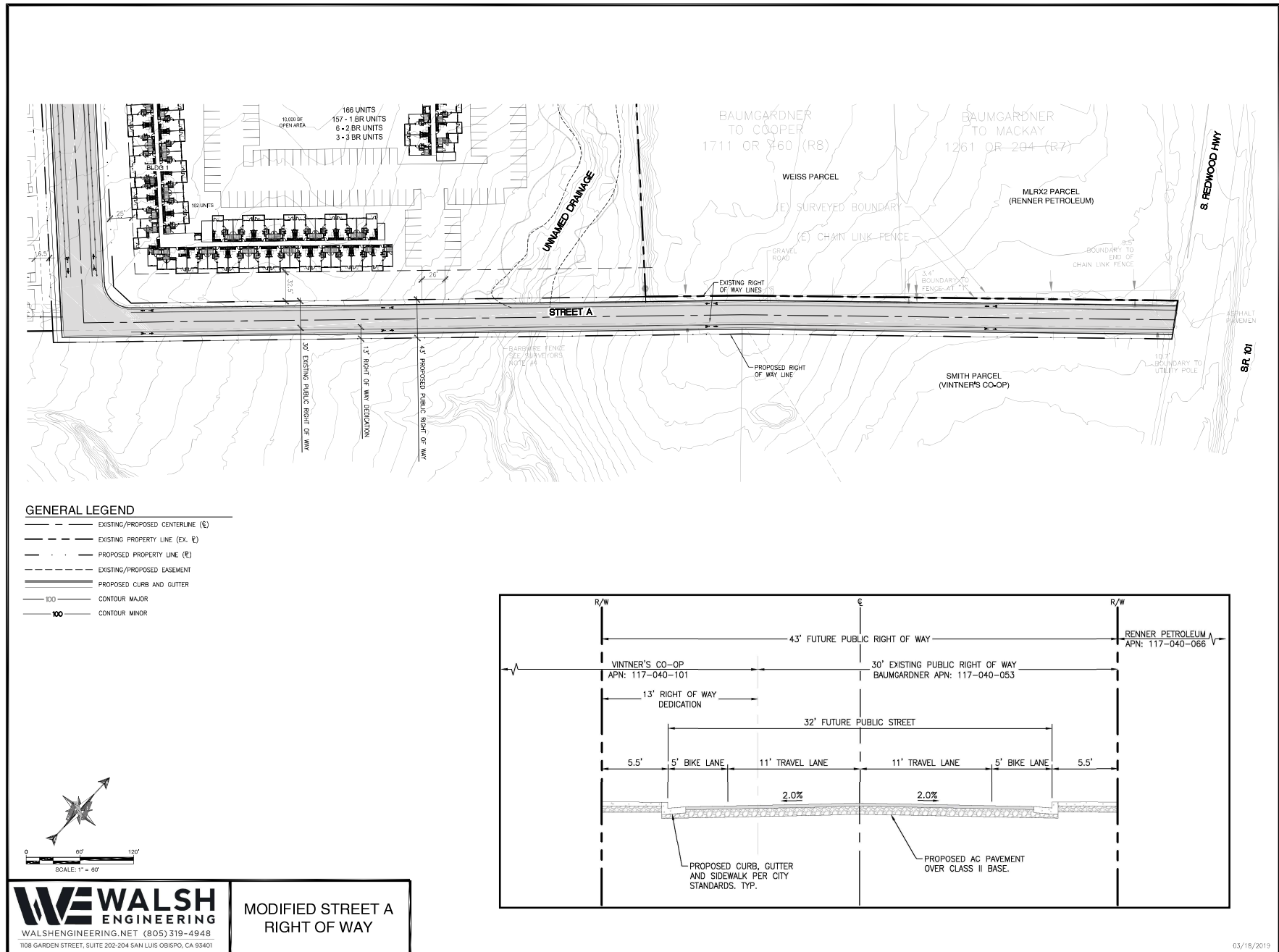
**Finding** – Bicycle facilities, as proposed, are consistent with the *SCTA Countywide Bicycle and Pedestrian Master Plan* and would adequately serve the site and surrounding uses.

### Bicycle Storage

Residents of the single-family homes and row-houses would have access to garages so no additional bicycle parking would be necessary; however, the apartment units would not have garages so bike parking should be provided for use by residents of the apartments. Zoning regulations for the City of Cloverdale do not specify bicycle parking requirements for residential uses, and neither do those for the County of Sonoma, so it is recommended that bike parking for the apartment units be provided in accordance with the *Santa Rosa City Code*, which requires attached multifamily dwellings to provide bike parking at a rate of one space per four dwelling units. Based on a total of 166 apartments, a minimum of 42 bicycle parking spaces should be provided on-site. As shown on the site plan, parking for 42 bicycles would be provided on Parcel C with the apartments.

**Finding** – Adequate bicycle parking would be provided on-site.





Traffic Impact Study for the Baumgardner Ranch Project  
**Figure 6 – Project Street A Layout and Cross Section**

## Transit

The proposed project would be within an acceptable walking distance of the transit stop for SCT Route 60 on South Redwood Highway near Sandholm Lane, which services destinations throughout Cloverdale as well as Geyserville, Healdsburg, Windsor, and Santa Rosa. Additionally, a resident could bicycle to the transit stop for SCT Route 68 on Treadway Drive, which provides access to more destinations within the City of Cloverdale.

**Finding** – Existing transit service is adequate to accommodate demand.

# Access and Circulation

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## Site Access

The project would take access from an extension of Foothill Boulevard and a new public “Street A” that would run parallel to Sandholm Lane, and approximately 750 feet south. The new public street would connect the new section of Foothill Boulevard to South Redwood Highway. Additionally, a connection to Sunset Drive would be provided near the western end of the site. The single-family homes would be accessed from the connection to Sunset Drive or from a new intersection with Foothill Boulevard. The row-house and apartment units would be accessed via a driveway on the east side of Foothill Boulevard and a driveway on the north side of Street A.

## Access Analysis

### Left-Turn Lane Warrants

The need for a left-turn lane on South Redwood Highway at the intersection with Street A was evaluated based on criteria contained in the *Intersection Channelization Design Guide*, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985, as well as a more recent update of the methodology developed by the Washington State Department of Transportation. The NCHRP report references a methodology developed by M. D. Harmelink that includes equations that can be applied to expected or actual traffic volumes to determine the need for a left-turn pocket based on safety issues.

Based on Future plus Project volumes, which are representative of worst-case conditions, a left-turn lane would not be warranted on South Redwood Highway at the intersection with Street A. Copies of the turn lane warrant analysis spreadsheets are provided in Appendix D.

**Finding** – A left-turn lane would not be warranted on South Redwood Highway at Street A.

## Sight Distance

At unsignalized intersections and driveways, a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the crossroad and the driver of an approaching vehicle. Sight distances along South Redwood Highway at the proposed location of Street A were evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distances at intersections of public streets is based on corner sight distance, with approach travel speed used as the basis for determining the recommended sight distance.

For the posted speed of 35 mph on South Redwood Highway to the north of Street A and 50 mph to the south, the recommended corner sight distances are 385 and 550 feet, respectively. Based on a review of field conditions, sight lines are clear for more than 500 feet to the north to the slight bend in the roadway and are clear for more than 600 feet to the south, which is more than adequate for the posted speed limit in each direction. Additionally, adequate stopping sight distance is available on both South Redwood Highway approaches to notice and react to a vehicle slowing or stopped to turn onto Street A.

Sight lines were also field measured at Foothill Boulevard/Sandholm Lane. Although the intersection is currently stop-controlled on both approaches, field conditions were reviewed to determine if adequate sight distances are available for the intersection to be stop-controlled on the Sandholm Lane approach only. For the posted speed limit of 25 mph on Foothill Boulevard, the recommended corner sight distance is 275 feet. A review of field conditions indicates that from a position on the Sandholm Lane approach, sight lines are clear for more than 300 feet looking north on Foothill Boulevard. Trees and shrubbery are currently blocking sight lines to the south, but

these would be removed to construct the new southern leg and with their removal sight lines are expected to be adequate as the new leg would align with the existing Foothill Boulevard leg and be orthogonal to Sandholm Lane. Therefore, sight lines to the south of Sandholm Lane are also expected to be adequate.

The project driveways on Foothill Boulevard and Street A and the street connection on Foothill Boulevard do not yet exist so adequacy of sight lines at these locations were evaluated based on the proposed site plan. All public streets to be created by the project would be straight and flat so sight lines are expected to be adequate for drivers waiting on the minor street approaches, as well as for following drivers; however, any potential frontage improvements that could potentially obstruct sight lines, such as landscaping or signing, should be placed outside of the vision triangles at each access point. Additionally, the curb should be painted red near the driveways as necessary to ensure that parked vehicles do not restrict sight lines.

**Finding** – Adequate corner and following sight distances are available at South Redwood Highway/Street A and would be available at Foothill Boulevard/Sandholm Lane with removal of the vegetation on the southeast corner. Based on the site plan, sight lines are expected to be adequate at the project driveways and the entrance to the neighborhood of single-family homes.

**Recommendation** – Street parking along the Foothill Boulevard extension should be prohibited within the vision triangle at the project access points. Any new landscaping or monuments along the project frontage should be clear between three and seven feet in height from the top of pavement to allow for unobstructed sight lines.

## Travel Speeds

A 24-hour speed survey was conducted on Foothill Boulevard between Treadway Drive and Mt. Diablo Way and on South Redwood Highway between Sandholm Lane and Kelly Road to determine if Engineering and Traffic Surveys should be prepared to modify the speed limits. The average speed on Foothill Boulevard was 26 mph and the 85<sup>th</sup> percentile speed was 31 mph, both of which are common for roadways with a posted speed limit of 25-mph. Although the critical speed indicates a speed limit of 30 mph, due to the residential character of the area along with the presence of bike lanes lower speeds are desired; therefore an update to the Engineering and Traffic survey to modify the existing speed limit does not appear to be warranted.

The average speed on South Redwood Highway was 42 mph and 85th percentile speed was 50 mph. Although the speed survey was taken in a segment with a speed limit of 35 mph, the higher speeds are likely due to motorists traveling southbound speeding up in anticipation of the 50-mph speed limit to the south and those traveling northbound still slowing down from higher speeds. This is typical for a transition zone such as the subject segment of South Redwood Highway so an Engineering and Traffic Surveys is not recommended at this time to modify the speed limit as this would result in a need to increase the speed limit. Because the development occurring in the area is changing its character, travel speeds are likely to decrease in the future as drivers routinely encounter entering or turning traffic, causing a change in behavior and lower travel speeds. A speed survey would be more appropriate after the area has been built out and is occupied. Copies of the speed survey data are included in Appendix E.

**Finding** – The speeds observed on Foothill Boulevard and South Redwood Highway are consistent with expectations for each respective facility.

## Design Considerations

### Intersection Controls

The proposed project would create three new intersections of public streets and modify the existing intersection of Foothill Boulevard/Sandholm Lane. Consideration was given the controls that should be implemented at each location.

- **Foothill Boulevard/Sandholm Lane** – The project would extend Foothill Boulevard south from Sandholm Lane and as such would add a third leg to the existing configuration. The intersection is currently stop-controlled on both approaches and as shown in the site plan, would be stop-controlled on the new Foothill Boulevard approach. A preliminary review of the existing and expected future volumes at the intersection indicates that volumes would not be high enough to warrant installation of all-way stop-controls (ASWC). Without a collision or sight distance issue, the provision of ASWC would add unnecessary delay to those traveling on Foothill Boulevard. Since the intersection would be orthogonal and sight lines are expected to be adequate, it is recommended that the westbound Sandholm Lane approach be stop-controlled and the Foothill Boulevard approaches free. This would result in a more standard two-way stop-controlled configuration wherein the terminating street is the one with a stop sign. Based on Future plus Project volumes, which represents worst-case conditions, the intersection would operate at LOS A overall and on the side-street approach with these recommended controls. Because removal of the stop sign from the southbound Foothill Boulevard approach could surprise some drivers, temporary signing should be installed on Sandholm Lane indicating that cross traffic does NOT stop; this could be removed six months after the project is occupied and drivers have become familiar with the changed pattern.
- **Foothill Boulevard (Extension)/Unnamed Project Street** – Access to the single-family homes would be provided via an unnamed street that would intersect the extension of Foothill Boulevard approximately 420 feet south of Sandholm Lane; no controls are shown on the site plan. It is recommended that the intersection be stop-controlled on the unnamed project street approach, as is typical for traffic from a local street entering a collector.
- **Foothill Boulevard (Extension)/Street A** – The extension of Foothill Boulevard would create an intersection with Street A; however, there would be no conflicting turning movements so no controls would be necessary in the near term. When Foothill Boulevard is extended further south, the intersection would be a candidate for stop controls on the terminating Street A approach.
- **South Redwood Highway/Street A** – Street A would create a new intersection with South Redwood Highway just south of the Renner Petroleum site; no controls for this intersection are shown on the site plan. As is typical for minor street approaches to arterials, it is recommended that the Street A approach be stop-controlled. This control-type was assumed throughout the operational analysis and results in acceptable LOS in all evaluated scenarios.

**Finding** – No controls would be necessary at the intersection of Foothill Boulevard/Street A.

**Recommendation** – The intersections of South Redwood Highway/Street A, Foothill Boulevard/Sandholm Lane, and Foothill Boulevard/Unnamed Project Street should all be stop-controlled on the minor street approaches.

## Street A

As shown in Figure 6, Street A would be 32 feet wide and would have two 11-foot travel lanes and two five-foot Class II bike lanes. Sidewalks would be provided on both sides of the street. The entire public right-of-way, including sidewalks, would be 43 feet wide, 30 feet of which would come from the Baumgardner Ranch property and 13 feet from the Vintners Co-op property. The *Urban Street Geometric Design Handbook*, Institute of Transportation Engineers, 2008 provides guidance on recommended bike lane widths and the width of adjacent travel lanes. For low-volume collector streets with typical speeds up to 25 mph, the recommended bike lane width adjacent to a curb is five feet and the minimum width of the adjacent travel lane is 10 feet with a maximum width of 11 to 12 feet. The cross section proposed for Street A is consistent with recommendations contained in the handbook and vehicles, bicyclists, and pedestrians would all be accommodated with the design.

**Finding** – The proposed cross section for Street A is consistent with design recommendations for a low-volume collector street with bike lanes.

# Parking

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The project was analyzed to determine if the proposed parking supply would be sufficient to satisfy applicable City and State requirements. The project site, as proposed, would provide 237 parking spaces for the single-family residences, consisting of two garage spaces and one street space per unit and 155 parking spaces for the row-house units, consisting of two garage spaces per unit plus an additional 35 shared spaces. A total of 184 shared spaces would be provided for residents of the apartments.

## City Requirements

For the City of Cloverdale, parking supply requirements are based on the City's Municipal Code, Chapter 18.11, Parking and Loading Requirements. Single family homes are required to provide two parking spaces per unit, one of which must be covered, and cluster ownership housing (which is applicable to row-house units) is required to provide one covered space per unit plus one and one-half shared spaces per unit plus another one-half space per unit which may be restricted or unrestricted, for a total of three spaces per unit. Single-bedroom apartments are required to provide one covered space per unit plus one shared space per unit and two- or more-bedroom apartments are required to provide one covered space per unit plus two shared spaces per unit.

Based on application of these rates, a total of 158 spaces would be required for the single-family homes, 180 spaces would be required for the row-house units, and 341 spaces would be required for the apartments. The proposed supply for the single-family homes would be more than adequate to satisfy City requirements, but the supply for the row-house units would be 25 spaces short and the supply for the apartments would be 157 spaces short.

## California Density Bonus Law

Under Government Code 65915-65918, the proposed project would be eligible for reduced parking requirements based on the planned restriction of at least 10 percent of the total units for lower income residents. Under state law, developments that are eligible cannot be required by jurisdictions to provide a parking ratio exceeding one on-site parking space per one-bedroom unit, two parking spaces per unit with two or three bedrooms, or two and one-half parking spaces per unit with four bedrooms. Based on these rates, a total of 182 spaces would be required for the single-family homes, 123 spaces would be required for the row-houses, and 175 spaces would be required for the apartments. As proposed, the project would satisfy the reduced parking requirements allowed under state law.

The parking analysis is summarized in Table 10.

**Table 10 – Parking Analysis**

<b>Land Use</b>	<b>Units</b>	<b>Rate</b>	<b>Parking Spaces</b>
<b>City Required Parking</b>			
Single-Family Dwelling	79 du	2 space/du	158
Cluster Ownership Housing	60 du	3 space/du	180
Apartments			
One-Bedroom Units	157 du	2 space/du	314
Two (or more)-Bedroom Units	9 du	3 space/du	27
<b>Total City Requirements</b>			<b>679</b>
<b>State Required Parking</b>			
Single-Family Dwelling			
Three-Bedroom Units	31 du	2 space/du	62
Four-Bedroom Units	48 du	2.5 space/du	120
Row-Houses			
Two- or Three-Bedroom Units	55 du	2 space/du	110
Four-Bedroom Units	5 du	2.5 space/du	13
Apartments			
One-Bedroom Units	157 du	1 space/du	157
Two- or Three-Bedroom Units	9 du	2 space/du	18
<b>Total State Requirements</b>			<b>480</b>
<b>Total Proposed</b>			<b>576</b>

Notes: du = dwelling unit

**Finding** – The proposed parking supply for the single-family homes would satisfy City requirements and although the supply for the row-house and apartment units would not meet City requirements, adequate parking would be provided to meet the reduced parking requirements allowed under state law for affordable housing projects.

# Conclusions and Recommendations

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## Conclusions

- Based on application of standard ITE rates, the proposed project would be expected to generate an average of 2,092 trips per day, including 152 trips during the a.m. peak hour and 192 trips during the p.m. peak hour.
- Under Existing Conditions, the study intersections operate acceptably at LOS C or better overall with the minor street approaches operating acceptably at LOS D or better. The addition of project traffic would cause the intersection of US 101 Overpass/US 101 North Ramps to deteriorate to LOS E overall and LOS F on the minor street approach during the p.m. peak hour; all other intersections would continue operating acceptably.
- Under the anticipated Future volumes, the study intersections are expected to continue operating acceptably except for US 101 Overpass/US 101 North Ramps, which would operate at LOS D overall and LOS F on the minor street approach during the p.m. peak hour. With the addition of project traffic, the study intersections would continue operating acceptably, except for US 101 Overpass/US 101 North Ramps, which would deteriorate to LOS F overall and on the stop-controlled approach.
- As proposed, access for pedestrians, bicyclists, and transit would be adequate.
- A left-turn lane would not be warranted on South Redwood Highway at Street A.
- Adequate corner and following sight distances are available at South Redwood Highway/Street A and would be available at Foothill Boulevard/Sandholm Lane with removal of the vegetation on the southeast corner. Additionally, sight lines are expected to be adequate at the project driveways and the intersection providing access to the single-family homes.
- The speeds observed on Foothill Boulevard and South Redwood Highway are consistent with expectations for each respective facility.
- No stop controls would be necessary at the intersection of Foothill Boulevard/Street A in the near-term.
- The proposed cross section for Street A is consistent with design recommendations for a low-volume collector street with bike lanes.
- The proposed parking supply for the single-family homes would satisfy City requirements. Although the supply for the row-house and apartment units would not meet City requirements, adequate parking would be provided to meet the reduced state requirements applicable to projects that provide housing for low-income residents.

## Recommendations

- To mitigate its impact under Existing plus Project and Future plus Project Conditions, it is recommended that the project obtain an encroachment permit to install all-way stop-controls at US 101 Overpass/US 101 North Ramps. This improvement would reduce the project's impact on the surrounding roadway network to less-than-significant.
- If not completed as part of the project, the City may wish to consider coordinating with Caltrans to install all-way stop-controls at US 101 Overpass/US 101 North Ramps to accommodate the expected growth in traffic on the off-ramp approach under Future Conditions.



- All new curb ramps constructed with the project should be ADA compliant.
- Parking should be prohibited along the Foothill Boulevard extension within the vision triangle at the project access points. Any new landscaping or monuments along the project frontage should be clear between three and seven feet in height from the top of pavement to allow for unobstructed sight lines.
- The intersections of South Redwood Highway/Street A, Foothill Boulevard/Sandholm Lane, and Foothill Boulevard/Unnamed Project Street should all be stop-controlled on the minor street approaches.

# Study Participants and References

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## Study Participants

<b>Principal in Charge</b>	Dalene J. Whitlock, PE, PTOE
<b>Assistant Engineer</b>	Cameron Nye, EIT
<b>Graphics</b>	Katia Wolfe
<b>Editing/Formatting</b>	Katia Wolfe
<b>Quality Control</b>	Dalene J. Whitlock, PE, PTOE

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*Intersection Channelization Design Guide*, National Cooperative Highway Research Program (NCHRP) Report No. 279, Transportation Research Board, 1985  
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CLO084

# Appendix A

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## Collision Rate Calculations



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### Intersection Collision Rate Calculations

#### Traffic Impact Study for the Baumgardner Ranch Project

**Intersection # 1:** Cloverdale Blvd & Treadway Dr

**Date of Count:** Thursday, February 7, 2019

**Number of Collisions:** 4

**Number of Injuries:** 2

**Number of Fatalities:** 0

**ADT:** 9400

**Start Date:** October 1, 2013

**End Date:** September 30, 2018

**Number of Years:** 5

**Intersection Type:** Tee

**Control Type:** Stop & Yield Controls

**Area:** Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{4}{9,400} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
<b>Study Intersection</b>	<b>0.23 c/mve</b>	<b>0.0%</b>	<b>50.0%</b>
<b>Statewide Average*</b>	<b>0.18 c/mve</b>	<b>0.7%</b>	<b>36.4%</b>

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

\* 2013 Collision Data on California State Highways, Caltrans

**Intersection # 2:** Treadway Dr & Foothill Blvd

**Date of Count:** Thursday, February 7, 2019

**Number of Collisions:** 0

**Number of Injuries:** 0

**Number of Fatalities:** 0

**ADT:** 2100

**Start Date:** October 1, 2013

**End Date:** September 30, 2018

**Number of Years:** 5

**Intersection Type:** Tee

**Control Type:** Stop & Yield Controls

**Area:** Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{0}{2,100} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
<b>Study Intersection</b>	<b>0.00 c/mve</b>	<b>0.0%</b>	<b>0.0%</b>
<b>Statewide Average*</b>	<b>0.18 c/mve</b>	<b>0.7%</b>	<b>36.4%</b>

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

\* 2013 Collision Data on California State Highways, Caltrans

### Intersection Collision Rate Calculations

#### Traffic Impact Study for the Baumgardner Ranch Project

**Intersection # 3:** Cloverdale Blvd & US 101 Overpass

**Date of Count:** Thursday, February 7, 2019

**Number of Collisions:** 1

**Number of Injuries:** 0

**Number of Fatalities:** 0

**ADT:** 9700

**Start Date:** October 1, 2013

**End Date:** September 30, 2018

**Number of Years:** 5

**Intersection Type:** Tee

**Control Type:** Stop & Yield Controls

**Area:** Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{1}{9,700} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
<b>Study Intersection</b>	<b>0.06 c/mve</b>	<b>0.0%</b>	<b>0.0%</b>
<b>Statewide Average*</b>	<b>0.18 c/mve</b>	<b>0.7%</b>	<b>36.4%</b>

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

\* 2013 Collision Data on California State Highways, Caltrans

**Intersection # 4:** US 101 Overpass & US 101 South Ramps

**Date of Count:** Thursday, February 7, 2019

**Number of Collisions:** 1

**Number of Injuries:** 0

**Number of Fatalities:** 0

**ADT:** 8400

**Start Date:** October 1, 2013

**End Date:** September 30, 2018

**Number of Years:** 5

**Intersection Type:** Four-Legged

**Control Type:** Stop & Yield Controls

**Area:** Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{1}{8,400} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
<b>Study Intersection</b>	<b>0.07 c/mve</b>	<b>0.0%</b>	<b>0.0%</b>
<b>Statewide Average*</b>	<b>0.15 c/mve</b>	<b>1.0%</b>	<b>41.9%</b>

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

\* 2013 Collision Data on California State Highways, Caltrans

### Intersection Collision Rate Calculations

#### Traffic Impact Study for the Baumgardner Ranch Project

**Intersection # 5:** US 101 Overpass & US 101 North Ramps

**Date of Count:** Thursday, February 7, 2019

**Number of Collisions:** 0

**Number of Injuries:** 0

**Number of Fatalities:** 0

**ADT:** 6700

**Start Date:** October 1, 2013

**End Date:** September 30, 2018

**Number of Years:** 5

**Intersection Type:** Four-Legged

**Control Type:** Stop & Yield Controls

**Area:** Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{0}{6,700} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
<b>Study Intersection</b>	<b>0.00 c/mve</b>	<b>0.0%</b>	<b>0.0%</b>
<b>Statewide Average*</b>	<b>0.15 c/mve</b>	<b>1.0%</b>	<b>41.9%</b>

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

\* 2013 Collision Data on California State Highways, Caltrans

**Intersection # 6:** South Redwood Hwy & Sandholm Ln

**Date of Count:** Thursday, February 7, 2019

**Number of Collisions:** 0

**Number of Injuries:** 0

**Number of Fatalities:** 0

**ADT:** 2200

**Start Date:** October 1, 2013

**End Date:** September 30, 2018

**Number of Years:** 5

**Intersection Type:** Tee

**Control Type:** Stop & Yield Controls

**Area:** Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{0}{2,200} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
<b>Study Intersection</b>	<b>0.00 c/mve</b>	<b>0.0%</b>	<b>0.0%</b>
<b>Statewide Average*</b>	<b>0.18 c/mve</b>	<b>0.7%</b>	<b>36.4%</b>

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

\* 2013 Collision Data on California State Highways, Caltrans

### Intersection Collision Rate Calculations

#### Traffic Impact Study for the Baumgardner Ranch Project

**Intersection # 7:** Foothill Blvd & Sandholm Ln

**Date of Count:** Thursday, February 7, 2019

**Number of Collisions:** 0

**Number of Injuries:** 0

**Number of Fatalities:** 0

**ADT:** 310

**Start Date:** October 1, 2013

**End Date:** September 30, 2018

**Number of Years:** 5

**Intersection Type:** Tee

**Control Type:** 4 Way Stop

**Area:** Urban

$$\text{collision rate} = \frac{\text{Number of Collisions} \times 1 \text{ Million}}{\text{ADT} \times 365 \text{ Days per Year} \times \text{Number of Years}}$$

$$\text{collision rate} = \frac{0}{310} \times \frac{1,000,000}{365 \times 5}$$

	Collision Rate	Fatality Rate	Injury Rate
<b>Study Intersection</b>	<b>0.00 c/mve</b>	<b>0.0%</b>	<b>0.0%</b>
<b>Statewide Average*</b>	<b>0.05 c/mve</b>	<b>1.1%</b>	<b>35.9%</b>

ADT = average daily total vehicles entering intersection

c/mve = collisions per million vehicles entering intersection

\* 2013 Collision Data on California State Highways, Caltrans



# Appendix B

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## Intersection Level of Service Calculations



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Intersection Level Of Service Report  
Intersection 1: Cloverdale Blvd/Treadway Dr

Control Type: Two-way stop  
Analysis Method: HCM 6th Edition  
Analysis Period: 15 minutes  
Delay (sec / veh): 12.8  
Level Of Service: B  
Volume to Capacity (v/c): 0.042

Intersection Setup

Name	Treadway Dr		Cloverdale Blvd		Cloverdale Blvd	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration	T		T		T	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	1	0	0	0
Pocket Length [ft]	100.00	150.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

Volumes

Name	Treadway Dr		Cloverdale Blvd		Cloverdale Blvd	
Base Volume Input [veh/h]	19	133	46	118	311	47
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	1.00	1.00	1.00	1.00	1.00	1.00
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]	19	133	46	118	311	47
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	35	12	31	81	12
Total Analysis Volume [veh/h]	20	139	48	123	324	49
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.19	0.04	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.82	11.22	8.16	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.71	0.13	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.25	17.86	3.16	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.42		2.29		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]			3.14			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 2: Foothill Blvd/Treadway Dr**

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):	0.019

**Intersection Setup**

Name	Treadway Dr		Foothill Blvd		Foothill Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Treadway Dr		Foothill Blvd		Foothill Blvd	
Base Volume Input [veh/h]	13	18	22	28	74	5
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	1.00	1.00	1.00	1.00	1.00	1.00
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]	13	18	22	28	74	5
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	5	6	8	20	1
Total Analysis Volume [veh/h]	14	19	24	30	80	5
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.02	0.02	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	10.00	8.64	0.00	0.00	7.45	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.12	0.12	0.00	0.00	0.16	0.16
95th-Percentile Queue Length [ft/ln]	2.90	2.90	0.00	0.00	4.07	4.07
d_A, Approach Delay [s/veh]	9.22		0.00		7.01	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]			5.23			
Intersection LOS			A			

Intersection Level Of Service Report  
Intersection 3: Cloverdale Blvd/US 101 Overpass

Control Type: Two-way stop Delay (sec / veh): 28.0  
Analysis Method: HCM 6th Edition Level Of Service: D  
Analysis Period: 15 minutes Volume to Capacity (v/c): 0.133

Intersection Setup

Name	US 101 Overpass		S Redwood Hwy		Cloverdale Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	US 101 Overpass		S Redwood Hwy		Cloverdale Blvd	
Base Volume Input [veh/h]	23	189	36	29	443	67
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	1.00	1.00	1.00	1.00	1.00	1.00
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]	23	189	36	29	443	67
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	49	9	7	114	17
Total Analysis Volume [veh/h]	24	195	37	30	457	69
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.19	0.00	0.00	0.30	0.00
d_M, Delay for Movement [s/veh]	28.00	9.38	0.00	0.00	8.34	0.00
Movement LOS	D	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.45	0.71	0.00	0.00	1.26	0.00
95th-Percentile Queue Length [ft/ln]	11.25	17.70	0.00	0.00	31.51	0.00
d_A, Approach Delay [s/veh]	11.42		0.00		7.24	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	7.77					
Intersection LOS	D					

**Intersection Level Of Service Report**  
**Intersection 4: US 101 Overpass/S Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	14.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.008

**Intersection Setup**

Name	SB Off-Ramp			US 101 Overpass			US 101 Overpass			SB On-Ramp		
Approach	Southbound			Eastbound			Westbound			Northwestbound		
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 Pocket	0	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	100.00	100.00	100.00	200.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	SB Off-Ramp			US 101 Overpass			US 101 Overpass			SB On-Ramp		
Base Volume Input [veh/h]	3	3	75	0	88	387	5	137	0	0	0	0
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	3	3	75	0	88	387	5	137	0	0	0	0
Peak Hour Factor	0.9300	0.9300	0.9300	1.0000	0.9300	0.9300	0.9300	0.9300	1.0000	1.0000	1.0000	1.0000
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]	1	1	20	0	24	104	1	37	0	0	0	0
Total Analysis Volume [veh/h]	3	3	81	0	95	416	5	147	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.19	14.66	9.40	0.00	0.00	0.00	8.43	0.00	0.00	0.00	0.00	0.00
Movement LOS	B	B	A		A	A	A	A				
95th-Percentile Queue Length [veh/ln]	0.04	0.04	0.30	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.05	1.05	7.40	0.00	0.00	0.00	0.36	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.67			0.00			0.28			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.18											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 5: US 101 Overpass/N Ramps**

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):	0.175

**Intersection Setup**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Approach	Northbound			Eastbound			Westbound			Southeastbound		
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 Pocket	0	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Base Volume Input [veh/h]	106	0	11	50	42	0	0	40	1	0	0	0
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	106	0	11	50	42	0	0	40	1	0	0	0
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	1.0000	1.0000	0.8500	0.8500	1.0000	1.0000	1.0000
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]	31	0	3	15	12	0	0	12	0	0	0	0
Total Analysis Volume [veh/h]	125	0	13	59	49	0	0	47	1	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.18	0.00	0.01	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.11	11.55	8.58	7.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	B	B	A	A	A			A	A			
95th-Percentile Queue Length [veh/ln]	0.63	0.63	0.04	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	15.78	15.78	0.97	2.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.87			4.04			0.00			0.00		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	6.59											
Intersection LOS	B											



Intersection Level Of Service Report

Intersection 6: S Redwood Hwy/Sandholm Ln

Control Type:	Two-way stop	Delay (sec / veh):	9.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.039

Intersection Setup

Name	Sandholm Ln		S Redwood Hwy		S Redwood Hwy	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration	T		I		T	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sandholm Ln		S Redwood Hwy		S Redwood Hwy	
Base Volume Input [veh/h]	28	4	3	38	60	28
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	1.00	1.00	1.00	1.00	1.00	1.00
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]	28	4	3	38	60	28
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	1	1	11	18	8
Total Analysis Volume [veh/h]	33	5	4	45	71	33
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
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	0.04	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.43	8.90	7.43	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.14	0.14	0.01	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.44	3.44	0.20	0.20	0.00	0.00
d_A, Approach Delay [s/veh]	9.36		0.61		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]				2.02		
Intersection LOS				A		

**Intersection Level Of Service Report**  
**Intersection 7: Foothill Blvd/Sandholm Ln**

Control Type:	All-way stop	Delay (sec / veh):	7.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.033

**Intersection Setup**

Name	Sandholm Ln		Foothill Blvd		Foothill Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Sandholm Ln		Foothill Blvd		Foothill Blvd	
Base Volume Input [veh/h]	0	11	0	0	25	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
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]	0	11	0	0	25	0
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	0	0	7	0
Total Analysis Volume [veh/h]	0	13	0	0	29	0
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	1059	904	866
Degree of Utilization, x	0.01	0.00	0.03




**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.04	0.00	0.10
95th-Percentile Queue Length [ft]	0.93	0.00	2.60
Approach Delay [s/veh]	6.44	0.00	7.30
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.04		
Intersection LOS	A		

**Intersection Level Of Service Report**  
**Intersection 1: Cloverdale Blvd/Treadway Dr**

Control Type:	Two-way stop	Delay (sec / veh):	25.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.308

**Intersection Setup**

Name	Treadway Dr		Cloverdale Blvd		Cloverdale Blvd	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	1	0	0	0
Pocket Length [ft]	100.00	150.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

**Volumes**

Name	Treadway Dr		Cloverdale Blvd		Cloverdale Blvd	
Base Volume Input [veh/h]	73	102	170	377	159	55
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	1.00	1.00	1.00	1.00	1.00	1.00
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]	73	102	170	377	159	55
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	27	45	100	42	15
Total Analysis Volume [veh/h]	78	109	181	401	169	59
Pedestrian Volume [ped/h]	1		0		3	

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.31	0.12	0.14	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	25.40	9.71	8.11	0.00	0.00	0.00
Movement LOS	D	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.26	0.43	0.47	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	31.53	10.65	11.70	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.25		2.52		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	4.52					
Intersection LOS	D					

**Intersection Level Of Service Report**  
**Intersection 2: Foothill Blvd/Treadway Dr**

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):	0.056

**Intersection Setup**

Name	Treadway Dr		Foothill Blvd		Foothill Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Treadway Dr		Foothill Blvd		Foothill Blvd	
Base Volume Input [veh/h]	40	91	12	21	37	10
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	1.00	1.00	1.00	1.00	1.00	1.00
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]	40	91	12	21	37	10
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	27	4	6	11	3
Total Analysis Volume [veh/h]	47	107	14	25	44	12
Pedestrian Volume [ped/h]	0		0		2	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.06	0.10	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	9.96	9.14	0.00	0.00	7.36	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.56	0.56	0.00	0.00	0.09	0.09
95th-Percentile Queue Length [ft/ln]	14.01	14.01	0.00	0.00	2.16	2.16
d_A, Approach Delay [s/veh]	9.39		0.00		5.78	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	7.11					
Intersection LOS	A					

Intersection Level Of Service Report  
Intersection 3: Cloverdale Blvd/US 101 Overpass

Control Type: Two-way stop Delay (sec / veh): 18.7  
Analysis Method: HCM 6th Edition Level Of Service: C  
Analysis Period: 15 minutes Volume to Capacity (v/c): 0.090

Intersection Setup

Name	US 101 Overpass		S Redwood Hwy		Cloverdale Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	US 101 Overpass		S Redwood Hwy		Cloverdale Blvd	
Base Volume Input [veh/h]	23	494	106	25	264	58
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	1.00	1.00	1.00	1.00	1.00	1.00
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]	23	494	106	25	264	58
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	137	29	7	73	16
Total Analysis Volume [veh/h]	26	549	118	28	293	64
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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




Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.60	0.00	0.00	0.20	0.00
d_M, Delay for Movement [s/veh]	18.69	14.60	0.00	0.00	8.15	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.29	4.11	0.00	0.00	0.76	0.00
95th-Percentile Queue Length [ft/ln]	7.35	102.63	0.00	0.00	19.12	0.00
d_A, Approach Delay [s/veh]	14.78		0.00		6.69	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	10.10					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 4: US 101 Overpass/S Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	18.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.011

**Intersection Setup**

Name	SB Off-Ramp			US 101 Overpass			US 101 Overpass			SB On-Ramp		
Approach	Southbound			Eastbound			Westbound			Northwestbound		
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 Pocket	0	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	100.00	100.00	100.00	200.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	SB Off-Ramp			US 101 Overpass			US 101 Overpass			SB On-Ramp		
Base Volume Input [veh/h]	4	3	54	0	140	150	16	473	0	0	0	0
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	4	3	54	0	140	150	16	473	0	0	0	0
Peak Hour Factor	0.9000	0.9000	0.9000	1.0000	0.9000	0.9000	0.9000	0.9000	1.0000	1.0000	1.0000	1.0000
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]	1	1	15	0	39	42	4	131	0	0	0	0
Total Analysis Volume [veh/h]	4	3	60	0	156	167	18	526	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.01	0.11	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.39	18.17	12.32	0.00	0.00	0.00	7.95	0.00	0.00	0.00	0.00	0.00
Movement LOS	C	C	B		A	A	A	A				
95th-Percentile Queue Length [veh/ln]	0.07	0.07	0.36	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.85	1.85	9.10	0.00	0.00	0.00	1.11	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.88			0.00			0.26			0.00		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	1.08											
Intersection LOS	C											

**Intersection Level Of Service Report**  
**Intersection 5: US 101 Overpass/N Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	35.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

**Intersection Setup**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Approach	Northbound			Eastbound			Westbound			Southeastbound		
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 Pocket	0	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Base Volume Input [veh/h]	413	2	21	107	38	0	0	78	7	0	0	0
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
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]	413	2	21	107	38	0	0	78	7	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200	1.0000	1.0000	1.0000
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]	112	1	6	29	10	0	0	21	2	0	0	0
Total Analysis Volume [veh/h]	449	2	23	116	41	0	0	85	8	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**




V/C, Movement V/C Ratio	0.82	0.00	0.02	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	35.19	35.55	8.57	7.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	E	E	A	A	A				A	A			
95th-Percentile Queue Length [veh/ln]	8.29	8.29	0.07	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	207.36	207.36	1.71	6.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	33.90		5.61		0.00		0.00		0.00		0.00		0.00
Approach LOS	D		A		A		A		A		A		A
d_I, Intersection Delay [s/veh]	23.41												
Intersection LOS	E												



**Intersection Level Of Service Report**  
**Intersection 6: S Redwood Hwy/Sandholm Ln**

Control Type:	Two-way stop	Delay (sec / veh):	9.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.047

**Intersection Setup**

Name	Sandholm Ln		S Redwood Hwy		S Redwood Hwy	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Sandholm Ln		S Redwood Hwy		S Redwood Hwy	
Base Volume Input [veh/h]	31	4	6	102	60	21
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	1.00	1.00	1.00	1.00	1.00	1.00
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]	31	4	6	102	60	21
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	1	2	30	18	6
Total Analysis Volume [veh/h]	36	5	7	120	71	25
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.05	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.95	8.94	7.42	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.16	0.16	0.01	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.11	4.11	0.35	0.35	0.00	0.00
d_A, Approach Delay [s/veh]	9.82		0.41		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]				1.72		
Intersection LOS	A					

**Intersection Level Of Service Report**  
**Intersection 7: Foothill Blvd/Sandholm Ln**

Control Type:	All-way stop	Delay (sec / veh):	6.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

**Intersection Setup**

Name	Sandholm Ln		Foothill Blvd		Foothill Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Sandholm Ln		Foothill Blvd		Foothill Blvd	
Base Volume Input [veh/h]	0	19	0	0	12	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
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]	0	19	0	0	12	0
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	6	0	0	4	0
Total Analysis Volume [veh/h]	0	22	0	0	14	0
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	1070	903	863
Degree of Utilization, x	0.02	0.00	0.02

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.06	0.00	0.05
95th-Percentile Queue Length [ft]	1.57	0.00	1.24
Approach Delay [s/veh]	6.44	0.00	7.24
Approach LOS	A	A	A
Intersection Delay [s/veh]	6.75		
Intersection LOS	A		

**Intersection Level Of Service Report**  
**Intersection 1: Cloverdale Blvd/Treadway Dr**

Control Type:	Signalized	Delay (sec / veh):	13.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.548

**Intersection Setup**

Name	Treadway Dr		Cloverdale Blvd		Cloverdale Blvd	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration	↵↵		↵		↵↵	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	1	0	0	0
Pocket Length [ft]	100.00	150.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

**Volumes**

Name	Treadway Dr		Cloverdale Blvd		Cloverdale Blvd	
Base Volume Input [veh/h]	19	133	46	118	311	47
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	1.45	1.45	1.45	1.68	1.68	1.45
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]	28	193	67	198	522	68
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	48	17	50	131	17
Total Analysis Volume [veh/h]	28	193	67	198	522	68
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing	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]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

**Phasing & Timing**

Control Type	Split	Split	Protected	Permissive	Permissive	Permissive
Signal group	8	0	5	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	5	0	5	5	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	15	0	9	28	19	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest in Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

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

## Lane Group Calculations

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
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]	9	9	3	43	36	36
g / C, Green / Cycle	0.15	0.15	0.06	0.72	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.02	0.12	0.04	0.11	0.28	0.04
s, saturation flow rate [veh/h]	1781	1589	1781	1870	1870	1589
c, Capacity [veh/h]	269	240	104	1339	1106	940
d1, Uniform Delay [s]	22.03	24.68	27.73	2.71	6.97	5.25
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.17	6.22	6.59	0.23	1.45	0.15
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	0.10	0.80	0.65	0.15	0.47	0.07
d, Delay for Lane Group [s/veh]	22.20	30.91	34.32	2.95	8.41	5.40
Lane Group LOS	C	C	C	A	A	A
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.34	2.95	1.07	0.44	3.11	0.30
50th-Percentile Queue Length [ft/ln]	8.51	73.68	26.72	11.11	77.73	7.51
95th-Percentile Queue Length [veh/ln]	0.61	5.30	1.92	0.80	5.60	0.54
95th-Percentile Queue Length [ft/ln]	15.32	132.62	48.09	20.00	139.92	13.52

## Movement, Approach, &amp; Intersection Results

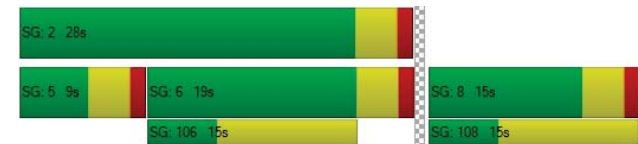
d_M, Delay for Movement [s/veh]	22.20	30.91	34.32	2.95	8.41	5.40
Movement LOS	C	C	C	A	A	A
d_A, Approach Delay [s/veh]	29.80		10.88		8.07	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]			13.22			
Intersection LOS			B			
Intersection V/C			0.548			

## Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0
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]	21.68	0.00	21.68
I_p,int, Pedestrian LOS Score for Intersection	2.017	0.000	2.230
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
I_b,int, Bicycle LOS Score for Intersection	4.132	4.570	5.106
Bicycle LOS	D	E	F

## Sequence




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



**Intersection Level Of Service Report**  
**Intersection 2: Foothill Blvd/Treadway Dr**

Control Type:	Two-way stop	Delay (sec / veh):	10.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

**Intersection Setup**

Name	Treadway Dr		Foothill Blvd		Foothill Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Treadway Dr		Foothill Blvd		Foothill Blvd	
Base Volume Input [veh/h]	13	18	22	28	74	5
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	1.45	1.45	1.45	1.45	1.45	1.45
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]	19	26	32	41	107	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	7	8	10	27	2
Total Analysis Volume [veh/h]	19	26	32	41	107	7
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.03	0.03	0.00	0.00	0.07	0.00
d_M, Delay for Movement [s/veh]	10.66	8.79	0.00	0.00	7.54	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.17	0.17	0.00	0.00	0.23	0.23
95th-Percentile Queue Length [ft/ln]	4.29	4.29	0.00	0.00	5.64	5.64
d_A, Approach Delay [s/veh]	9.58		0.00		7.07	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]			5.33			
Intersection LOS			B			

**Intersection Level Of Service Report**  
**Intersection 3: Cloverdale Blvd/US 101 Overpass**

Control Type:	Two-way stop	Delay (sec / veh):	40.1
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.209

**Intersection Setup**

Name	US 101 Overpass		S Redwood Hwy		Cloverdale Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	US 101 Overpass		S Redwood Hwy		Cloverdale Blvd	
Base Volume Input [veh/h]	23	189	36	29	443	67
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	1.17	1.17	1.68	1.17	1.17	1.68
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]	27	221	60	34	518	113
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	55	15	9	130	28
Total Analysis Volume [veh/h]	27	221	60	34	518	113
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.21	0.22	0.00	0.00	0.35	0.00
d_M, Delay for Movement [s/veh]	40.10	9.72	0.00	0.00	8.66	0.00
Movement LOS	E	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.75	0.86	0.00	0.00	1.56	0.00
95th-Percentile Queue Length [ft/ln]	18.73	21.53	0.00	0.00	39.06	0.00
d_A, Approach Delay [s/veh]	13.02		0.00		7.11	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	7.93					
Intersection LOS	E					

**Intersection Level Of Service Report**  
**Intersection 4: US 101 Overpass/S Ramps**

Control Type:	Two-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):	0.014

**Intersection Setup**

Name	SB Off-Ramp			US 101 Overpass			US 101 Overpass			SB On-Ramp		
Approach	Southbound			Eastbound			Westbound			Northwestbound		
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 Pocket	0	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	100.00	100.00	100.00	200.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	SB Off-Ramp			US 101 Overpass			US 101 Overpass			SB On-Ramp		
Base Volume Input [veh/h]	3	3	75	0	88	387	5	137	0	0	0	0
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	1.49	1.49	1.49	1.00	1.17	1.49	1.49	1.17	1.00	1.00	1.00	1.00
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]	4	4	112	0	103	577	7	160	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	1	1	28	0	26	144	2	40	0	0	0	0
Total Analysis Volume [veh/h]	4	4	112	0	103	577	7	160	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.01	0.13	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.58	17.50	9.66	0.00	0.00	0.00	8.98	0.00	0.00	0.00	0.00	0.00
Movement LOS	B	C	A			A	A	A				
95th-Percentile Queue Length [veh/ln]	0.07	0.07	0.43	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.75	1.75	10.82	0.00	0.00	0.00	0.58	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.05			0.00			0.38			0.00		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]							1.31					
Intersection LOS							C					

**Intersection Level Of Service Report**  
**Intersection 5: US 101 Overpass/N Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	11.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.229

**Intersection Setup**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Approach	Northbound			Eastbound			Westbound			Southeastbound		
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 Pocket	0	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Base Volume Input [veh/h]	106	0	11	50	42	0	0	40	1	0	0	0
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	1.46	1.46	1.46	1.46	1.17	1.00	1.00	1.17	1.46	1.00	1.00	1.00
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]	155	0	16	73	49	0	0	47	1	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	0	4	18	12	0	0	12	0	0	0	0
Total Analysis Volume [veh/h]	155	0	16	73	49	0	0	47	1	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**




V/C, Movement V/C Ratio	0.23	0.00	0.02	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.87	12.30	8.59	7.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	B	B	A	A	A			A	A			
95th-Percentile Queue Length [veh/ln]	0.88	0.88	0.05	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	21.93	21.93	1.20	3.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.57		4.44		0.00		0.00		0.00		0.00	
Approach LOS	B		A		A		A		A		A	
d_I, Intersection Delay [s/veh]	7.39											
Intersection LOS	B											



**Intersection Level Of Service Report**  
**Intersection 5: US 101 Overpass/N Ramps**

Control Type:	All-way stop	Delay (sec / veh):	8.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.234

**Intersection Setup**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Approach	Northbound			Eastbound			Westbound			Southeastbound		
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 Pocket	0	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Base Volume Input [veh/h]	106	0	11	50	42	0	0	40	1	0	0	0
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	1.46	1.46	1.46	1.46	1.17	1.00	1.00	1.17	1.46	1.00	1.00	1.00
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]	155	0	16	73	49	0	0	47	1	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	0	4	18	12	0	0	12	0	0	0	0
Total Analysis Volume [veh/h]	155	0	16	73	49	0	0	47	1	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	663	851	711	789	868	
Degree of Utilization, x	0.23	0.02	0.10	0.06	0.06	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [ft]	0.90	0.06	0.34	0.20	0.18	
95th-Percentile Queue Length [ft]	22.57	1.44	8.55	4.96	4.38	
Approach Delay [s/veh]	9.52		8.03		7.39	0.00
Approach LOS	A		A		A	A
Intersection Delay [s/veh]	8.69					
Intersection LOS	A					

**Intersection Level Of Service Report**  
**Intersection 6: S Redwood Hwy/Sandholm Ln**

Control Type:	Two-way stop	Delay (sec / veh):	9.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.052

**Intersection Setup**

Name	Sandholm Ln		S Redwood Hwy		S Redwood Hwy	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Sandholm Ln		S Redwood Hwy		S Redwood Hwy	
Base Volume Input [veh/h]	28	4	3	38	60	28
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	1.45	1.45	1.45	1.68	1.68	1.45
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]	41	6	4	64	101	41
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	2	1	16	25	10
Total Analysis Volume [veh/h]	41	6	4	64	101	41
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.05	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.81	9.15	7.51	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.18	0.18	0.01	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.62	4.62	0.21	0.21	0.00	0.00
d_A, Approach Delay [s/veh]	9.73		0.44		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]			1.90			
Intersection LOS			A			

**Intersection Level Of Service Report**  
**Intersection 7: Foothill Blvd/Sandholm Ln**

Control Type:	All-way stop	Delay (sec / veh):	7.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.042

**Intersection Setup**

Name	Sandholm Ln		Foothill Blvd		Foothill Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Sandholm Ln		Foothill Blvd		Foothill Blvd	
Base Volume Input [veh/h]	0	11	0	0	25	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.45	1.45	1.45	1.45	1.45	1.45
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]	0	16	0	0	36	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	0	0	9	0
Total Analysis Volume [veh/h]	0	16	0	0	36	0
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	1054	901	865
Degree of Utilization, x	0.02	0.00	0.04




**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.05	0.00	0.13
95th-Percentile Queue Length [ft]	1.16	0.00	3.25
Approach Delay [s/veh]	6.47	0.00	7.34
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.07		
Intersection LOS	A		

**Intersection Level Of Service Report**  
**Intersection 1: Cloverdale Blvd/Treadway Dr**

Control Type:	Signalized	Delay (sec / veh):	13.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.509

**Intersection Setup**

Name	Treadway Dr		Cloverdale Blvd		Cloverdale Blvd	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	1	0	0	0
Pocket Length [ft]	100.00	150.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

**Volumes**

Name	Treadway Dr		Cloverdale Blvd		Cloverdale Blvd	
Base Volume Input [veh/h]	73	102	170	377	159	55
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	1.41	1.41	1.41	1.57	1.57	1.41
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]	103	144	240	592	250	78
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	36	60	148	63	20
Total Analysis Volume [veh/h]	103	144	240	592	250	78
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		2	
v_di, Inbound Pedestrian Volume crossing	0		0		1	
v_co, Outbound Pedestrian Volume crossing	1		1		0	
v_ci, Inbound Pedestrian Volume crossing	0		2		1	
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]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

**Phasing & Timing**

Control Type	Split	Split	Protected	Permissive	Permissive	Permissive
Signal group	8	0	5	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	5	0	5	5	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	15	0	22	41	19	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

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

**Lane Group Calculations**

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
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]	7	7	10	45	31	31
g / C, Green / Cycle	0.12	0.12	0.17	0.74	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.06	0.09	0.13	0.32	0.13	0.05
s, saturation flow rate [veh/h]	1759	1589	1781	1870	1870	1588
c, Capacity [veh/h]	219	198	299	1389	951	807
d1, Uniform Delay [s]	24.50	25.37	24.08	2.91	8.39	7.64
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.57	5.08	5.02	0.96	0.67	0.24
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	0.47	0.73	0.80	0.43	0.26	0.10
d, Delay for Lane Group [s/veh]	26.08	30.45	29.10	3.87	9.06	7.88
Lane Group LOS	C	C	C	A	A	A
Critical Lane Group	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.41	2.17	3.41	1.38	1.64	0.47
50th-Percentile Queue Length [ft/ln]	35.13	54.36	85.27	34.61	41.01	11.73
95th-Percentile Queue Length [veh/ln]	2.53	3.91	6.14	2.49	2.95	0.84
95th-Percentile Queue Length [ft/ln]	63.24	97.85	153.48	62.30	73.82	21.11

**Movement, Approach, & Intersection Results**

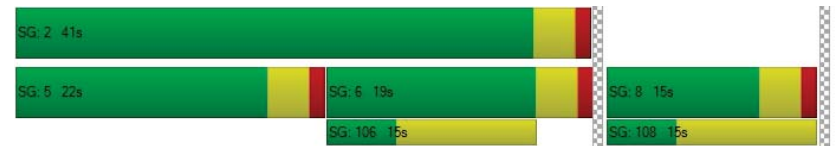
d_M, Delay for Movement [s/veh]	26.08	30.45	29.10	3.87	9.06	7.88
Movement LOS	C	C	C	A	A	A
d_A, Approach Delay [s/veh]	28.63		11.15		8.78	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]			13.67			
Intersection LOS			B			
Intersection V/C			0.509			

**Other Modes**

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0
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]	21.68	0.00	21.68
I_p,int, Pedestrian LOS Score for Intersection	2.074	0.000	2.309
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
I_b,int, Bicycle LOS Score for Intersection	4.132	5.505	4.674
Bicycle LOS	D	F	E

**Sequence**




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



**Intersection Level Of Service Report**  
**Intersection 2: Foothill Blvd/Treadway Dr**

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.069

**Intersection Setup**

Name	Treadway Dr		Foothill Blvd		Foothill Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Treadway Dr		Foothill Blvd		Foothill Blvd	
Base Volume Input [veh/h]	40	91	12	21	37	10
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	1.41	1.41	1.41	1.41	1.41	1.41
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]	56	128	17	30	52	14
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	32	4	8	13	4
Total Analysis Volume [veh/h]	56	128	17	30	52	14
Pedestrian Volume [ped/h]	0		0		2	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.07	0.12	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	10.32	9.36	0.00	0.00	7.39	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.71	0.71	0.00	0.00	0.10	0.10
95th-Percentile Queue Length [ft/ln]	17.72	17.72	0.00	0.00	2.58	2.58
d_A, Approach Delay [s/veh]	9.65		0.00		5.82	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	7.27					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 3: Cloverdale Blvd/US 101 Overpass**

Control Type:	Two-way stop	Delay (sec / veh):	26.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.162

**Intersection Setup**

Name	US 101 Overpass		S Redwood Hwy		Cloverdale Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	US 101 Overpass		S Redwood Hwy		Cloverdale Blvd	
Base Volume Input [veh/h]	23	494	106	25	264	58
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	1.38	1.38	1.57	1.38	1.38	1.57
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]	32	682	166	35	364	91
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	171	42	9	91	23
Total Analysis Volume [veh/h]	32	682	166	35	364	91
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.16	0.79	0.00	0.00	0.27	0.00
d_M, Delay for Movement [s/veh]	26.75	23.23	0.00	0.00	8.57	0.00
Movement LOS	D	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.57	8.39	0.00	0.00	1.08	0.00
95th-Percentile Queue Length [ft/ln]	14.13	209.64	0.00	0.00	26.88	0.00
d_A, Approach Delay [s/veh]	23.38		0.00		6.86	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	14.46					
Intersection LOS	D					

**Intersection Level Of Service Report**  
**Intersection 4: US 101 Overpass/S Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	24.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

**Intersection Setup**

Name	SB Off-Ramp			US 101 Overpass			US 101 Overpass			SB On-Ramp		
Approach	Southbound			Eastbound			Westbound			Northwestbound		
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 Pocket	0	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	100.00	100.00	100.00	200.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	SB Off-Ramp			US 101 Overpass			US 101 Overpass			SB On-Ramp		
Base Volume Input [veh/h]	4	3	54	0	140	150	16	473	0	0	0	0
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	1.67	1.67	1.67	1.00	1.38	1.67	1.67	1.38	1.00	1.00	1.00	1.00
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]	7	5	90	0	193	251	27	653	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	1	23	0	48	63	7	163	0	0	0	0
Total Analysis Volume [veh/h]	7	5	90	0	193	251	27	653	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**




V/C, Movement V/C Ratio	0.03	0.03	0.19	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	23.43	24.77	14.53	0.00	0.00	0.00	8.31	0.00	0.00	0.00	0.00	0.00
Movement LOS	C	C	B		A	A	A	A				
95th-Percentile Queue Length [veh/ln]	0.19	0.19	0.71	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.71	4.71	17.63	0.00	0.00	0.00	1.86	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.65			0.00			0.33			0.00		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	1.48											
Intersection LOS	C											



**Intersection Level Of Service Report**  
**Intersection 5: US 101 Overpass/N Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	53.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

**Intersection Setup**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Approach	Northbound			Eastbound			Westbound			Southeastbound		
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 Pocket	0	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Base Volume Input [veh/h]	413	2	21	107	38	0	0	78	7	0	0	0
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	1.03	1.03	1.03	1.03	1.38	1.00	1.00	1.38	1.03	1.00	1.00	1.00
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]	425	2	22	110	52	0	0	108	7	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200	1.0000	1.0000	1.0000
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]	115	1	6	30	14	0	0	29	2	0	0	0
Total Analysis Volume [veh/h]	462	2	24	120	57	0	0	117	8	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.92	0.00	0.02	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	52.98	53.29	8.65	7.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	F	A	A	A			A	A			
95th-Percentile Queue Length [veh/ln]	11.11	11.11	0.07	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	277.69	277.69	1.83	6.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	50.80		5.21		0.00		0.00		0.00		0.00	
Approach LOS	F		A		A		A		A		A	
d_I, Intersection Delay [s/veh]	32.55											
Intersection LOS	F											

**Intersection Level Of Service Report**  
**Intersection 5: US 101 Overpass/N Ramps**

Control Type:	All-way stop	Delay (sec / veh):	16.7
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

**Intersection Setup**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Approach	Northbound			Eastbound			Westbound			Southeastbound		
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 Pocket	0	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Base Volume Input [veh/h]	413	2	21	107	38	0	0	78	7	0	0	0
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	1.03	1.03	1.03	1.03	1.38	1.00	1.00	1.38	1.03	1.00	1.00	1.00
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]	425	2	22	110	52	0	0	108	7	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200	1.0000	1.0000	1.0000
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]	115	1	6	30	14	0	0	29	2	0	0	0
Total Analysis Volume [veh/h]	462	2	24	120	57	0	0	117	8	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	629	796	705	781	861	
Degree of Utilization, x	0.74	0.03	0.17	0.07	0.15	


**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [v/t]	6.43	0.09	0.61	0.24	0.51	
95th-Percentile Queue Length [ft]	160.78	2.33	15.27	5.89	12.66	
Approach Delay [s/veh]	22.02		8.48		7.89	0.00
Approach LOS	C		A		A	A
Intersection Delay [s/veh]	16.75					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 6: S Redwood Hwy/Sandholm Ln**

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.063

**Intersection Setup**

Name	Sandholm Ln		S Redwood Hwy		S Redwood Hwy	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Sandholm Ln		S Redwood Hwy		S Redwood Hwy	
Base Volume Input [veh/h]	31	4	6	102	60	21
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	1.41	1.41	1.41	1.57	1.57	1.41
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]	44	6	8	160	94	30
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	2	2	40	24	8
Total Analysis Volume [veh/h]	44	6	8	160	94	30
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.06	0.01	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.50	9.18	7.47	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.22	0.22	0.02	0.02	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.55	5.55	0.41	0.41	0.00	0.00
d_A, Approach Delay [s/veh]	10.35		0.36		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.69					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 7: Foothill Blvd/Sandholm Ln**

Control Type:	All-way stop	Delay (sec / veh):	6.8
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.025

**Intersection Setup**

Name	Sandholm Ln		Foothill Blvd		Foothill Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Sandholm Ln		Foothill Blvd		Foothill Blvd	
Base Volume Input [veh/h]	0	19	0	0	12	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.41	1.41	1.41	1.41	1.41	1.41
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]	0	27	0	0	17	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	0	0	4	0
Total Analysis Volume [veh/h]	0	27	0	0	17	0
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	1067	900	860
Degree of Utilization, x	0.03	0.00	0.02




**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.08	0.00	0.06
95th-Percentile Queue Length [ft]	1.94	0.00	1.51
Approach Delay [s/veh]	6.46	0.00	7.27
Approach LOS	A	A	A
Intersection Delay [s/veh]	6.77		
Intersection LOS	A		

**Intersection Level Of Service Report**  
**Intersection 1: Cloverdale Blvd/Treadway Dr**

Control Type:	Two-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):	0.059

**Intersection Setup**

Name	Treadway Dr		Cloverdale Blvd		Cloverdale Blvd	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	1	0	0	0
Pocket Length [ft]	100.00	150.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

**Volumes**

Name	Treadway Dr		Cloverdale Blvd		Cloverdale Blvd	
Base Volume Input [veh/h]	19	133	46	118	311	47
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	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	27	10	2
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]	26	133	46	145	321	49
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	35	12	38	84	13
Total Analysis Volume [veh/h]	27	139	48	151	334	51
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.06	0.20	0.04	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.38	11.32	8.20	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.19	0.73	0.13	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.70	18.14	3.20	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.66		1.98		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	3.11					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 2: Foothill Blvd/Treadway Dr**

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

**Intersection Setup**

Name	Treadway Dr		Foothill Blvd		Foothill Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Treadway Dr		Foothill Blvd		Foothill Blvd	
Base Volume Input [veh/h]	13	18	22	28	74	5
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	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	6	7	0	2
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]	15	18	28	35	74	7
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	5	8	9	20	2
Total Analysis Volume [veh/h]	16	19	30	38	80	8
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.02	0.02	0.00	0.00	0.05	0.00
d_M, Delay for Movement [s/veh]	10.10	8.71	0.00	0.00	7.48	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.13	0.13	0.00	0.00	0.16	0.16
95th-Percentile Queue Length [ft/ln]	3.16	3.16	0.00	0.00	4.12	4.12
d_A, Approach Delay [s/veh]	9.34		0.00		6.80	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	4.84					
Intersection LOS	B					

**Intersection Level Of Service Report  
Intersection 3: Cloverdale Blvd/US 101 Overpass**

Control Type:	Two-way stop	Delay (sec / veh):	36.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.284

**Intersection Setup**

Name	US 101 Overpass		S Redwood Hwy		Cloverdale Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	US 101 Overpass		S Redwood Hwy		Cloverdale Blvd	
Base Volume Input [veh/h]	23	189	36	29	443	67
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	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	21	0	27	62	0	10
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]	44	189	63	91	443	77
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	49	16	23	114	20
Total Analysis Volume [veh/h]	45	195	65	94	457	79
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.28	0.21	0.00	0.00	0.32	0.00
d_M, Delay for Movement [s/veh]	36.56	9.82	0.00	0.00	8.73	0.00
Movement LOS	E	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.11	0.78	0.00	0.00	1.41	0.00
95th-Percentile Queue Length [ft/ln]	27.66	19.44	0.00	0.00	35.17	0.00
d_A, Approach Delay [s/veh]	14.84		0.00		7.45	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	8.08					
Intersection LOS	E					

**Intersection Level Of Service Report**  
**Intersection 4: US 101 Overpass/S Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	15.8
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

**Intersection Setup**

Name	SB Off-Ramp			US 101 Overpass			US 101 Overpass			SB On-Ramp		
Approach	Southbound			Eastbound			Westbound			Northwestbound		
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 Pocket	0	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	100.00	100.00	100.00	200.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	SB Off-Ramp			US 101 Overpass			US 101 Overpass			SB On-Ramp		
Base Volume Input [veh/h]	3	3	75	0	88	387	5	137	0	0	0	0
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	0	11	51	0	17	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]	3	3	79	0	99	438	5	154	0	0	0	0
Peak Hour Factor	0.9300	0.9300	0.9300	1.0000	0.9300	0.9300	0.9300	0.9300	1.0000	1.0000	1.0000	1.0000
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]	1	1	21	0	27	118	1	41	0	0	0	0
Total Analysis Volume [veh/h]	3	3	85	0	106	471	5	166	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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

**Movement, Approach, & Intersection Results**




V/C, Movement V/C Ratio	0.01	0.01	0.10	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.87	15.83	9.54	0.00	0.00	0.00	8.63	0.00	0.00	0.00	0.00	0.00
Movement LOS	B	C	A		A	A	A	A				
95th-Percentile Queue Length [veh/ln]	0.05	0.05	0.32	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.17	1.17	8.01	0.00	0.00	0.00	0.38	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	9.85			0.00			0.25			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	1.12											
Intersection LOS	C											



**Intersection Level Of Service Report**  
**Intersection 5: US 101 Overpass/N Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	11.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.213

**Intersection Setup**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Approach	Northbound			Eastbound			Westbound			Southeastbound		
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 Pocket	0	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Base Volume Input [veh/h]	106	0	11	50	42	0	0	40	1	0	0	0
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	0	0	11	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]	123	0	11	61	42	0	0	40	1	0	0	0
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	1.0000	1.0000	0.8500	0.8500	1.0000	1.0000	1.0000
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]	36	0	3	18	12	0	0	12	0	0	0	0
Total Analysis Volume [veh/h]	145	0	13	72	49	0	0	47	1	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.21	0.00	0.01	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.71	12.14	8.58	7.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	B	B	A	A	A			A	A			
95th-Percentile Queue Length [veh/ln]	0.80	0.80	0.04	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	20.06	20.06	0.97	3.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.46		4.42		0.00		0.00		0.00		0.00	
Approach LOS	B		A		A		A		A		A	
d_I, Intersection Delay [s/veh]	7.17											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 5: US 101 Overpass/N Ramps**

Control Type:	All-way stop	Delay (sec / veh):	8.6
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.219

**Intersection Setup**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Approach	Northbound			Eastbound			Westbound			Southeastbound		
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 Pocket	0	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Base Volume Input [veh/h]	106	0	11	50	42	0	0	40	1	0	0	0
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	0	0	11	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]	123	0	11	61	42	0	0	40	1	0	0	0
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	1.0000	1.0000	0.8500	0.8500	1.0000	1.0000	1.0000
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]	36	0	3	18	12	0	0	12	0	0	0	0
Total Analysis Volume [veh/h]	145	0	13	72	49	0	0	47	1	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	663	851	711	789	869	
Degree of Utilization, x	0.22	0.02	0.10	0.06	0.06	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [ft]	0.83	0.05	0.34	0.20	0.18	
95th-Percentile Queue Length [ft]	20.73	1.16	8.42	4.96	4.38	
Approach Delay [s/veh]	9.42		8.02		7.39	0.00
Approach LOS	A		A		A	A
Intersection Delay [s/veh]	8.61					
Intersection LOS	A					

Intersection Level Of Service Report  
Intersection 6: S Redwood Hwy/Sandholm Ln

Control Type: Two-way stop  
Analysis Method: HCM 6th Edition  
Analysis Period: 15 minutes  
Delay (sec / veh): 10.3  
Level Of Service: B  
Volume to Capacity (v/c): 0.140

Intersection Setup

Name	Sandholm Ln		S Redwood Hwy		S Redwood Hwy	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration	T		I		I	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sandholm Ln		S Redwood Hwy		S Redwood Hwy	
Base Volume Input [veh/h]	28	4	3	38	60	28
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	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	67	0	0	22	7	23
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]	95	4	3	60	67	51
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	1	1	18	20	15
Total Analysis Volume [veh/h]	112	5	4	71	79	60
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
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	0.14	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.27	9.57	7.50	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.51	0.51	0.01	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	12.70	12.70	0.21	0.21	0.00	0.00
d_A, Approach Delay [s/veh]	10.24		0.40		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	3.71					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 7: Foothill Blvd/Sandholm Ln**

Control Type:	All-way stop	Delay (sec / veh):	7.1
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.093

**Intersection Setup**

Name	Sandholm Ln		Foothill Blvd		Foothill Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Sandholm Ln		Foothill Blvd		Foothill Blvd	
Base Volume Input [veh/h]	0	11	0	0	25	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	23	0	13	67	0	4
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]	23	11	13	67	25	4
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	3	4	20	7	1
Total Analysis Volume [veh/h]	27	13	15	79	29	5
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	873	1014	842
Degree of Utilization, x	0.05	0.09	0.04

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.14	0.31	0.13
95th-Percentile Queue Length [ft]	3.60	7.65	3.15
Approach Delay [s/veh]	7.32	6.92	7.45
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.12		
Intersection LOS	A		

Intersection Level Of Service Report  
Intersection 8: S Redwood Hwy/Project St A

Control Type: Two-way stop  
Analysis Method: HCM 6th Edition  
Analysis Period: 15 minutes  
Delay (sec / veh): 9.3  
Level Of Service: A  
Volume to Capacity (v/c): 0.025

Intersection Setup

Name	Project St A		S Redwood Hwy		S Redwood Hwy	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration	T		I		T	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project St A		S Redwood Hwy		S Redwood Hwy	
Base Volume Input [veh/h]	0	0	0	41	64	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	22	11	4	0	0	7
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]	22	11	4	41	64	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	3	1	10	16	2
Total Analysis Volume [veh/h]	22	11	4	41	64	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
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	0.03	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.25	8.76	7.36	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.11	0.11	0.01	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.81	2.81	0.20	0.20	0.00	0.00
d_A, Approach Delay [s/veh]	9.09		0.65		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.21					
Intersection LOS	A					

**Intersection Level Of Service Report**  
**Intersection 1: Cloverdale Blvd/Treadway Dr**

Control Type:	Two-way stop	Delay (sec / veh):	28.2
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.348

**Intersection Setup**

Name	Treadway Dr		Cloverdale Blvd		Cloverdale Blvd	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration	T		T		T	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	1	0	0	0
Pocket Length [ft]	100.00	150.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		Yes	

**Volumes**

Name	Treadway Dr		Cloverdale Blvd		Cloverdale Blvd	
Base Volume Input [veh/h]	73	102	170	377	159	55
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	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	17	29	7
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]	77	102	170	394	188	62
Peak Hour Factor	0.9400	0.9400	0.9400	0.9400	0.9400	0.9400
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	27	45	105	50	16
Total Analysis Volume [veh/h]	82	109	181	419	200	66
Pedestrian Volume [ped/h]	1		0		3	

**Intersection Settings**

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


**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.35	0.13	0.14	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	28.20	9.93	8.23	0.00	0.00	0.00
Movement LOS	D	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.49	0.45	0.49	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	37.13	11.14	12.14	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	17.77		2.48		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	4.62					
Intersection LOS	D					

**Intersection Level Of Service Report**  
**Intersection 2: Foothill Blvd/Treadway Dr**

Control Type:	Two-way stop	Delay (sec / veh):	10.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.066

**Intersection Setup**

Name	Treadway Dr		Foothill Blvd		Foothill Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Treadway Dr		Foothill Blvd		Foothill Blvd	
Base Volume Input [veh/h]	40	91	12	21	37	10
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	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	4	4	0	6
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]	47	91	16	25	37	16
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	14	27	5	7	11	5
Total Analysis Volume [veh/h]	55	107	19	29	44	19
Pedestrian Volume [ped/h]	0		0		2	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.07	0.10	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	10.12	9.25	0.00	0.00	7.38	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.61	0.61	0.00	0.00	0.09	0.09
95th-Percentile Queue Length [ft/ln]	15.24	15.24	0.00	0.00	2.18	2.18
d_A, Approach Delay [s/veh]	9.54		0.00		5.15	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	6.85					
Intersection LOS	B					

Intersection Level Of Service Report  
Intersection 3: Cloverdale Blvd/US 101 Overpass

Control Type: Two-way stop Delay (sec / veh): 27.5  
Analysis Method: HCM 6th Edition Level Of Service: D  
Analysis Period: 15 minutes Volume to Capacity (v/c): 0.388

Intersection Setup

Name	US 101 Overpass		S Redwood Hwy		Cloverdale Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	US 101 Overpass		S Redwood Hwy		Cloverdale Blvd	
Base Volume Input [veh/h]	23	494	106	25	264	58
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	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	67	0	17	39	0	29
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]	90	494	123	64	264	87
Peak Hour Factor	0.9000	0.9000	0.9000	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	137	34	18	73	24
Total Analysis Volume [veh/h]	100	549	137	71	293	97
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

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

Movement, Approach, & Intersection Results




V/C, Movement V/C Ratio	0.39	0.63	0.00	0.00	0.21	0.00
d_M, Delay for Movement [s/veh]	27.55	15.90	0.00	0.00	8.36	0.00
Movement LOS	D	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.75	4.59	0.00	0.00	0.82	0.00
95th-Percentile Queue Length [ft/ln]	43.66	114.76	0.00	0.00	20.41	0.00
d_A, Approach Delay [s/veh]	17.70		0.00		6.28	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	11.18					
Intersection LOS	D					



**Intersection Level Of Service Report**  
**Intersection 4: US 101 Overpass/S Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	20.2
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

**Intersection Setup**

Name	SB Off-Ramp			US 101 Overpass			US 101 Overpass			SB On-Ramp		
Approach	Southbound			Eastbound			Westbound			Northwestbound		
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 Pocket	0	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	100.00	100.00	100.00	200.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	SB Off-Ramp			US 101 Overpass			US 101 Overpass			SB On-Ramp		
Base Volume Input [veh/h]	4	3	54	0	140	150	16	473	0	0	0	0
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	12	0	7	32	0	55	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]	4	3	66	0	147	182	16	528	0	0	0	0
Peak Hour Factor	0.9000	0.9000	0.9000	1.0000	0.9000	0.9000	0.9000	0.9000	1.0000	1.0000	1.0000	1.0000
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]	1	1	18	0	41	51	4	147	0	0	0	0
Total Analysis Volume [veh/h]	4	3	73	0	163	202	18	587	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.02	0.01	0.14	0.00	0.00	0.00	0.02	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	19.21	20.20	13.24	0.00	0.00	0.00	8.06	0.00	0.00	0.00	0.00	0.00
Movement LOS	C	C	B		A	A	A	A				
95th-Percentile Queue Length [veh/ln]	0.09	0.09	0.50	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.13	2.13	12.43	0.00	0.00	0.00	1.15	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.80			0.00			0.24			0.00		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	1.19											
Intersection LOS	C											

**Intersection Level Of Service Report**  
**Intersection 5: US 101 Overpass/N Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	58.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

**Intersection Setup**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Approach	Northbound			Eastbound			Westbound			Southeastbound		
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 Pocket	0	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Base Volume Input [veh/h]	413	2	21	107	38	0	0	78	7	0	0	0
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	55	0	0	7	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]	468	2	21	114	38	0	0	78	7	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200	1.0000	1.0000	1.0000
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]	127	1	6	31	10	0	0	21	2	0	0	0
Total Analysis Volume [veh/h]	509	2	23	124	41	0	0	85	8	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.96	0.00	0.02	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	57.89	58.24	8.57	7.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	F	A	A	A				A	A		
95th-Percentile Queue Length [veh/ln]	12.62	12.62	0.07	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	315.44	315.44	1.71	6.74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	55.77			5.72			0.00			0.00		
Approach LOS	F			A			A			A		
d_I, Intersection Delay [s/veh]	38.79											
Intersection LOS	F											

**Intersection Level Of Service Report**  
**Intersection 5: US 101 Overpass/N Ramps**

Control Type:	All-way stop	Delay (sec / veh):	20.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.800

**Intersection Setup**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Approach	Northbound			Eastbound			Westbound			Southeastbound		
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 Pocket	0	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Base Volume Input [veh/h]	413	2	21	107	38	0	0	78	7	0	0	0
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	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	55	0	0	7	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]	468	2	21	114	38	0	0	78	7	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200	1.0000	1.0000	1.0000
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]	127	1	6	31	10	0	0	21	2	0	0	0
Total Analysis Volume [veh/h]	509	2	23	124	41	0	0	85	8	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	639	812	707	784	867	
Degree of Utilization, x	0.80	0.03	0.18	0.05	0.11	


**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [ft]	7.99	0.09	0.63	0.17	0.36	
95th-Percentile Queue Length [ft]	199.64	2.18	15.81	4.13	8.99	
Approach Delay [s/veh]	26.11		8.54		7.65	0.00
Approach LOS	D		A		A	A
Intersection Delay [s/veh]	20.28					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 6: S Redwood Hwy/Sandholm Ln**

Control Type:	Two-way stop	Delay (sec / veh):	11.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.126

**Intersection Setup**

Name	Sandholm Ln		S Redwood Hwy		S Redwood Hwy	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Sandholm Ln		S Redwood Hwy		S Redwood Hwy	
Base Volume Input [veh/h]	31	4	6	102	60	21
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	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	42	0	0	14	24	72
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]	73	4	6	116	84	93
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	1	2	34	25	27
Total Analysis Volume [veh/h]	86	5	7	136	99	109
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.13	0.01	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.04	9.82	7.65	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.45	0.45	0.02	0.02	0.00	0.00
95th-Percentile Queue Length [ft/ln]	11.26	11.26	0.39	0.39	0.00	0.00
d_A, Approach Delay [s/veh]	10.98		0.37		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]				2.38		
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 7: Foothill Blvd/Sandholm Ln**

Control Type:	All-way stop	Delay (sec / veh):	7.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.123

**Intersection Setup**

Name	Sandholm Ln		Foothill Blvd		Foothill Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Sandholm Ln		Foothill Blvd		Foothill Blvd	
Base Volume Input [veh/h]	0	19	0	0	12	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	72	0	8	42	0	13
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]	72	19	8	42	12	13
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	6	2	12	4	4
Total Analysis Volume [veh/h]	85	22	9	49	14	15
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	868	974	833
Degree of Utilization, x	0.12	0.06	0.03

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.42	0.19	0.11
95th-Percentile Queue Length [ft]	10.50	4.74	2.70
Approach Delay [s/veh]	7.73	6.93	7.48
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.45		
Intersection LOS	A		

Intersection Level Of Service Report  
Intersection 8: S Redwood Hwy/Project St A

Control Type: Two-way stop  
Analysis Method: HCM 6th Edition  
Analysis Period: 15 minutes  
Delay (sec / veh): 9.8  
Level Of Service: A  
Volume to Capacity (v/c): 0.018

Intersection Setup

Name	Project St A		S Redwood Hwy		S Redwood Hwy	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration	T		I		T	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Project St A		S Redwood Hwy		S Redwood Hwy	
Base Volume Input [veh/h]	0	0	0	108	64	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	7	12	0	0	24
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]	14	7	12	108	64	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	2	3	27	16	6
Total Analysis Volume [veh/h]	14	7	12	108	64	24
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
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	0.02	0.01	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.76	8.77	7.41	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.02	0.02	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.94	1.94	0.60	0.60	0.00	0.00
d_A, Approach Delay [s/veh]	9.43		0.74		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]			1.25			
Intersection LOS			A			

**Intersection Level Of Service Report**  
**Intersection 1: Cloverdale Blvd/Treadway Dr**

Control Type:	Signalized	Delay (sec / veh):	13.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.554

**Intersection Setup**

Name	Treadway Dr		Cloverdale Blvd		Cloverdale Blvd	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration	↵↵		↵		↵↵	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	1	0	0	0
Pocket Length [ft]	100.00	150.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

**Volumes**

Name	Treadway Dr		Cloverdale Blvd		Cloverdale Blvd	
Base Volume Input [veh/h]	19	133	46	118	311	47
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	1.45	1.45	1.45	1.68	1.68	1.45
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	27	10	2
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]	35	193	67	225	532	70
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	48	17	56	133	18
Total Analysis Volume [veh/h]	35	193	67	225	532	70
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing	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]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

**Phasing & Timing**

Control Type	Split	Split	Protected	Permissive	Permissive	Permissive
Signal group	8	0	5	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	5	0	5	5	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	15	0	9	28	19	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

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

## Lane Group Calculations

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
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]	9	9	3	43	36	36
g / C, Green / Cycle	0.15	0.15	0.06	0.72	0.59	0.59
(v / s)_i Volume / Saturation Flow Rate	0.02	0.12	0.04	0.12	0.28	0.04
s, saturation flow rate [veh/h]	1781	1589	1781	1870	1870	1589
c, Capacity [veh/h]	270	241	104	1338	1105	939
d1, Uniform Delay [s]	22.10	24.66	27.73	2.77	7.03	5.26
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.22	6.13	6.59	0.27	1.50	0.15
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	0.13	0.80	0.65	0.17	0.48	0.07
d, Delay for Lane Group [s/veh]	22.31	30.79	34.32	3.04	8.54	5.42
Lane Group LOS	C	C	C	A	A	A
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.43	2.94	1.07	0.52	3.20	0.31
50th-Percentile Queue Length [ft/ln]	10.69	73.51	26.72	12.90	80.07	7.76
95th-Percentile Queue Length [veh/ln]	0.77	5.29	1.92	0.93	5.77	0.56
95th-Percentile Queue Length [ft/ln]	19.23	132.32	48.09	23.22	144.13	13.96

## Movement, Approach, &amp; Intersection Results

d_M, Delay for Movement [s/veh]	22.31	30.79	34.32	3.04	8.54	5.42
Movement LOS	C	C	C	A	A	A
d_A, Approach Delay [s/veh]	29.49	10.21	8.17			
Approach LOS	C	B	A			
d_I, Intersection Delay [s/veh]		13.04				
Intersection LOS		B				
Intersection V/C		0.554				

## Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0
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]	21.68	0.00	21.68
I_p,int, Pedestrian LOS Score for Intersection	2.020	0.000	2.248
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
I_b,int, Bicycle LOS Score for Intersection	4.132	4.614	5.126
Bicycle LOS	D	E	F

## Sequence

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








**Intersection Level Of Service Report**  
**Intersection 2: Foothill Blvd/Treadway Dr**

Control Type:	Two-way stop	Delay (sec / veh):	10.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.032

**Intersection Setup**

Name	Treadway Dr		Foothill Blvd		Foothill Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Treadway Dr		Foothill Blvd		Foothill Blvd	
Base Volume Input [veh/h]	13	18	22	28	74	5
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	1.45	1.45	1.45	1.45	1.45	1.45
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	6	7	0	2
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]	21	26	38	48	107	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	7	10	12	27	2
Total Analysis Volume [veh/h]	21	26	38	48	107	9
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.03	0.03	0.00	0.00	0.07	0.00
d_M, Delay for Movement [s/veh]	10.77	8.86	0.00	0.00	7.57	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.18	0.18	0.00	0.00	0.23	0.23
95th-Percentile Queue Length [ft/ln]	4.61	4.61	0.00	0.00	5.71	5.71
d_A, Approach Delay [s/veh]	9.71		0.00		6.98	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.08					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 3: Cloverdale Blvd/US 101 Overpass**

Control Type:	Two-way stop	Delay (sec / veh):	58.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.426

**Intersection Setup**

Name	US 101 Overpass		S Redwood Hwy		Cloverdale Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	US 101 Overpass		S Redwood Hwy		Cloverdale Blvd	
Base Volume Input [veh/h]	23	189	36	29	443	67
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	1.17	1.17	1.68	1.17	1.17	1.68
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	21	0	27	62	0	10
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]	48	221	87	96	518	123
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	55	22	24	130	31
Total Analysis Volume [veh/h]	48	221	87	96	518	123
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.43	0.24	0.00	0.00	0.37	0.00
d_M, Delay for Movement [s/veh]	58.83	10.19	0.00	0.00	9.11	0.00
Movement LOS	F	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.82	0.95	0.00	0.00	1.75	0.00
95th-Percentile Queue Length [ft/ln]	45.46	23.66	0.00	0.00	43.75	0.00
d_A, Approach Delay [s/veh]	18.87		0.00		7.36	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	8.96					
Intersection LOS	F					

**Intersection Level Of Service Report**  
**Intersection 4: US 101 Overpass/S Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	18.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

**Intersection Setup**

Name	SB Off-Ramp			US 101 Overpass			US 101 Overpass			SB On-Ramp		
Approach	Southbound			Eastbound			Westbound			Northwestbound		
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 Pocket	0	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	100.00	100.00	100.00	200.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	SB Off-Ramp			US 101 Overpass			US 101 Overpass			SB On-Ramp		
Base Volume Input [veh/h]	3	3	75	0	88	387	5	137	0	0	0	0
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	1.49	1.49	1.49	1.00	1.17	1.49	1.49	1.17	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	0	11	51	0	17	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]	4	4	116	0	114	628	7	177	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	1	1	29	0	29	157	2	44	0	0	0	0
Total Analysis Volume [veh/h]	4	4	116	0	114	628	7	177	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.01	0.02	0.13	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	14.35	18.93	9.80	0.00	0.00	0.00	9.20	0.00	0.00	0.00	0.00	0.00
Movement LOS	B	C	A		A	A	A	A				
95th-Percentile Queue Length [veh/ln]	0.08	0.08	0.46	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.94	1.94	11.54	0.00	0.00	0.00	0.61	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.24			0.00			0.35			0.00		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	1.27											
Intersection LOS	C											

**Intersection Level Of Service Report**  
**Intersection 5: US 101 Overpass/N Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	12.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.264

**Intersection Setup**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Approach	Northbound			Eastbound			Westbound			Southeastbound		
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 Pocket	0	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Base Volume Input [veh/h]	106	0	11	50	42	0	0	40	1	0	0	0
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	1.46	1.46	1.46	1.46	1.17	1.00	1.00	1.17	1.46	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	0	0	11	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]	172	0	16	84	49	0	0	47	1	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	43	0	4	21	12	0	0	12	0	0	0	0
Total Analysis Volume [veh/h]	172	0	16	84	49	0	0	47	1	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.26	0.00	0.02	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.50	12.91	8.59	7.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	B	B	A	A	A			A	A			
95th-Percentile Queue Length [veh/ln]	1.06	1.06	0.05	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	26.45	26.45	1.20	4.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.17		4.70		0.00		0.00		0.00		0.00	
Approach LOS	B		A		A		A		A		A	
d_I, Intersection Delay [s/veh]	7.89											
Intersection LOS	B											

**Intersection Level Of Service Report**  
**Intersection 5: US 101 Overpass/N Ramps**

Control Type:	All-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.261

**Intersection Setup**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Approach	Northbound			Eastbound			Westbound			Southeastbound		
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 Pocket	0	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Base Volume Input [veh/h]	106	0	11	50	42	0	0	40	1	0	0	0
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	1.46	1.46	1.46	1.46	1.17	1.00	1.00	1.17	1.46	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	0	0	11	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]	172	0	16	84	49	0	0	47	1	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
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]	43	0	4	21	12	0	0	12	0	0	0	0
Total Analysis Volume [veh/h]	172	0	16	84	49	0	0	47	1	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	659	845	711	789	866	
Degree of Utilization, x	0.26	0.02	0.12	0.06	0.06	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [ft]	1.04	0.06	0.40	0.20	0.18	
95th-Percentile Queue Length [ft]	26.02	1.45	10.00	4.96	4.39	
Approach Delay [s/veh]	9.82		8.12		7.40	0.00
Approach LOS	A		A		A	A
Intersection Delay [s/veh]	8.89					
Intersection LOS	A					

**Intersection Level Of Service Report**  
**Intersection 6: S Redwood Hwy/Sandholm Ln**

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):	0.144

**Intersection Setup**

Name	Sandholm Ln		S Redwood Hwy		S Redwood Hwy	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Sandholm Ln		S Redwood Hwy		S Redwood Hwy	
Base Volume Input [veh/h]	28	4	3	38	60	28
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	1.45	1.45	1.45	1.68	1.68	1.45
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	67	0	0	22	7	23
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]	108	6	4	86	108	64
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	2	1	22	27	16
Total Analysis Volume [veh/h]	108	6	4	86	108	64
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.14	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.62	9.80	7.57	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.53	0.53	0.01	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	13.17	13.17	0.21	0.21	0.00	0.00
d_A, Approach Delay [s/veh]	10.58		0.34		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]				3.29		
Intersection LOS				B		

Intersection Level Of Service Report  
Intersection 7: Foothill Blvd/Sandholm Ln

Control Type: All-way stop Delay (sec / veh): 7.1  
Analysis Method: HCM 6th Edition Level Of Service: A  
Analysis Period: 15 minutes Volume to Capacity (v/c): 0.079

Intersection Setup

Name	Sandholm Ln		Foothill Blvd		Foothill Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Sandholm Ln		Foothill Blvd		Foothill Blvd	
Base Volume Input [veh/h]	0	11	0	0	25	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.45	1.45	1.45	1.45	1.45	1.45
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	23	0	13	67	0	4
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]	23	16	13	67	36	4
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	4	3	17	9	1
Total Analysis Volume [veh/h]	23	16	13	67	36	4
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Lanes

Capacity per Entry Lane [veh/h]	890	1013	844
Degree of Utilization, x	0.04	0.08	0.05




Movement, Approach, & Intersection Results

95th-Percentile Queue Length [veh]	0.14	0.26	0.15
95th-Percentile Queue Length [ft]	3.43	6.42	3.73
Approach Delay [s/veh]	7.23	6.86	7.48
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.11		
Intersection LOS	A		

**Intersection Level Of Service Report**  
**Intersection 8: S Redwood Hwy/Project St A**

Control Type:	Two-way stop	Delay (sec / veh):	9.7
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.028

**Intersection Setup**

Name	Project St A		S Redwood Hwy		S Redwood Hwy	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Project St A		S Redwood Hwy		S Redwood Hwy	
Base Volume Input [veh/h]	0	0	0	41	64	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.45	1.45	1.45	1.68	1.68	1.45
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	22	11	4	0	0	7
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]	22	11	4	69	108	7
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	3	1	17	27	2
Total Analysis Volume [veh/h]	22	11	4	69	108	7
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.03	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.68	9.00	7.45	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.12	0.12	0.01	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.06	3.06	0.20	0.20	0.00	0.00
d_A, Approach Delay [s/veh]	9.46		0.41		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]			1.55			
Intersection LOS			A			



**Intersection Level Of Service Report**  
**Intersection 1: Cloverdale Blvd/Treadway Dr**

Control Type:	Signalized	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.520

**Intersection Setup**

Name	Treadway Dr		Cloverdale Blvd		Cloverdale Blvd	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration	TT		TL		LR	
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	1	1	0	0	0
Pocket Length [ft]	100.00	150.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

**Volumes**

Name	Treadway Dr		Cloverdale Blvd		Cloverdale Blvd	
Base Volume Input [veh/h]	73	102	170	377	159	55
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	1.41	1.41	1.41	1.57	1.57	1.41
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	0	0	17	29	7
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]	107	144	240	609	279	85
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	36	60	152	70	21
Total Analysis Volume [veh/h]	107	144	240	609	279	85
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		2	
v_di, Inbound Pedestrian Volume crossing	0		0		1	
v_co, Outbound Pedestrian Volume crossing	1		1		0	
v_ci, Inbound Pedestrian Volume crossing	0		2		1	
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]	60
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

**Phasing & Timing**

Control Type	Split	Split	Protected	Permissive	Permissive	Permissive
Signal group	8	0	5	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	Lead	-	-	-
Minimum Green [s]	5	0	5	5	5	0
Maximum Green [s]	30	0	30	30	30	0
Amber [s]	3.0	0.0	3.0	3.0	3.0	0.0
All red [s]	1.0	0.0	1.0	1.0	1.0	0.0
Split [s]	15	0	22	41	19	0
Vehicle Extension [s]	3.0	0.0	3.0	3.0	3.0	0.0
Walk [s]	5	0	0	5	5	0
Pedestrian Clearance [s]	10	0	0	10	10	0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	2.0	2.0	0.0
Minimum Recall	No		No	No	No	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

**Exclusive Pedestrian Phase**

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

## Lane Group Calculations

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	60	60	60	60	60	60
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
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]	7	7	10	45	31	31
g / C, Green / Cycle	0.12	0.12	0.17	0.74	0.51	0.51
(v / s)_i Volume / Saturation Flow Rate	0.06	0.09	0.13	0.33	0.15	0.05
s, saturation flow rate [veh/h]	1759	1589	1781	1870	1870	1588
c, Capacity [veh/h]	219	198	299	1389	950	807
d1, Uniform Delay [s]	24.55	25.36	24.08	2.96	8.55	7.69
k, delay calibration	0.11	0.11	0.11	0.50	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.68	5.05	5.02	1.01	0.79	0.26
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	0.49	0.73	0.80	0.44	0.29	0.11
d, Delay for Lane Group [s/veh]	26.24	30.40	29.10	3.97	9.34	7.95
Lane Group LOS	C	C	C	A	A	A
Critical Lane Group	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.47	2.17	3.41	1.45	1.87	0.51
50th-Percentile Queue Length [ft/ln]	36.65	54.32	85.27	36.24	46.75	12.85
95th-Percentile Queue Length [veh/ln]	2.64	3.91	6.14	2.61	3.37	0.93
95th-Percentile Queue Length [ft/ln]	65.97	97.77	153.48	65.22	84.15	23.14

## Movement, Approach, &amp; Intersection Results

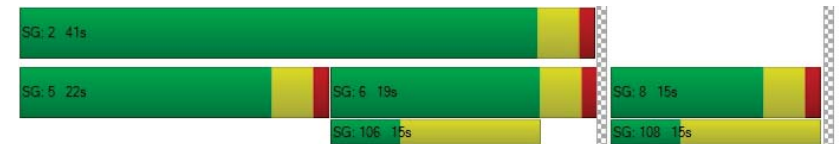
d_M, Delay for Movement [s/veh]	26.24	30.40	29.10	3.97	9.34	7.95
Movement LOS	C	C	C	A	A	A
d_A, Approach Delay [s/veh]	28.63		11.07		9.01	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]			13.57			
Intersection LOS			B			
Intersection V/C			0.520			

## Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0
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]	21.68	0.00	21.68
I_p,int, Pedestrian LOS Score for Intersection	2.077	0.000	2.330
Crosswalk LOS	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	0	0	0
d_b, Bicycle Delay [s]	30.00	30.00	30.00
I_b,int, Bicycle LOS Score for Intersection	4.132	5.533	4.733
Bicycle LOS	D	F	E

## Sequence




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



**Intersection Level Of Service Report**  
**Intersection 2: Foothill Blvd/Treadway Dr**

Control Type:	Two-way stop	Delay (sec / veh):	10.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.079

**Intersection Setup**

Name	Treadway Dr		Foothill Blvd		Foothill Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

**Volumes**

Name	Treadway Dr		Foothill Blvd		Foothill Blvd	
Base Volume Input [veh/h]	40	91	12	21	37	10
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	1.41	1.41	1.41	1.41	1.41	1.41
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	4	4	0	6
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]	63	128	21	34	52	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	32	5	9	13	5
Total Analysis Volume [veh/h]	63	128	21	34	52	20
Pedestrian Volume [ped/h]	0		0		2	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.08	0.12	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	10.47	9.47	0.00	0.00	7.40	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.76	0.76	0.00	0.00	0.10	0.10
95th-Percentile Queue Length [ft/ln]	18.95	18.95	0.00	0.00	2.60	2.60
d_A, Approach Delay [s/veh]	9.80		0.00		5.35	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	7.10					
Intersection LOS	B					

**Intersection Level Of Service Report**  
**Intersection 3: Cloverdale Blvd/US 101 Overpass**

Control Type:	Two-way stop	Delay (sec / veh):	48.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.559

**Intersection Setup**

Name	US 101 Overpass		S Redwood Hwy		Cloverdale Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	35.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	US 101 Overpass		S Redwood Hwy		Cloverdale Blvd	
Base Volume Input [veh/h]	23	494	106	25	264	58
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	1.38	1.38	1.57	1.38	1.38	1.57
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	67	0	17	39	0	29
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]	99	682	183	74	364	120
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	171	46	19	91	30
Total Analysis Volume [veh/h]	99	682	183	74	364	120
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.56	0.83	0.00	0.00	0.28	0.00
d_M, Delay for Movement [s/veh]	48.40	27.03	0.00	0.00	8.81	0.00
Movement LOS	E	D	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.93	9.56	0.00	0.00	1.15	0.00
95th-Percentile Queue Length [ft/ln]	73.13	238.90	0.00	0.00	28.65	0.00
d_A, Approach Delay [s/veh]	29.74		0.00		6.63	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]			17.37			
Intersection LOS			E			

**Intersection Level Of Service Report**  
**Intersection 4: US 101 Overpass/S Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	27.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.029

**Intersection Setup**

Name	SB Off-Ramp			US 101 Overpass			US 101 Overpass			SB On-Ramp		
Approach	Southbound			Eastbound			Westbound			Northwestbound		
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 Pocket	0	0	1	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	100.00	100.00	100.00	200.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	SB Off-Ramp			US 101 Overpass			US 101 Overpass			SB On-Ramp		
Base Volume Input [veh/h]	4	3	54	0	140	150	16	473	0	0	0	0
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	1.67	1.67	1.67	1.00	1.38	1.67	1.67	1.38	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	12	0	7	32	0	55	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]	7	5	102	0	200	283	27	708	0	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	1	26	0	50	71	7	177	0	0	0	0
Total Analysis Volume [veh/h]	7	5	102	0	200	283	27	708	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	0.04	0.03	0.23	0.00	0.00	0.00	0.03	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	26.04	27.69	15.80	0.00	0.00	0.00	8.42	0.00	0.00	0.00	0.00	0.00
Movement LOS	D	D	C		A	A	A	A				
95th-Percentile Queue Length [veh/ln]	0.22	0.22	0.90	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	5.38	5.38	22.51	0.00	0.00	0.00	1.92	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.95			0.00			0.31			0.00		
Approach LOS	C			A			A			A		
d_I, Intersection Delay [s/veh]	1.62											
Intersection LOS	D											

**Intersection Level Of Service Report**  
**Intersection 5: US 101 Overpass/N Ramps**

Control Type:	Two-way stop	Delay (sec / veh):	91.7
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

**Intersection Setup**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Approach	Northbound			Eastbound			Westbound			Southeastbound		
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 Pocket	0	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Base Volume Input [veh/h]	413	2	21	107	38	0	0	78	7	0	0	0
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	1.03	1.03	1.03	1.03	1.38	1.00	1.00	1.38	1.03	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	55	0	0	7	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]	480	2	22	117	52	0	0	108	7	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200	1.0000	1.0000	1.0000
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]	130	1	6	32	14	0	0	29	2	0	0	0
Total Analysis Volume [veh/h]	522	2	24	127	57	0	0	117	8	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings**

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




**Movement, Approach, & Intersection Results**

V/C, Movement V/C Ratio	1.07	0.00	0.02	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	91.43	91.72	8.65	7.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	F	F	A	A	A				A	A		
95th-Percentile Queue Length [veh/ln]	16.49	16.49	0.07	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	412.33	412.33	1.83	7.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	87.80			5.31			0.00			0.00		
Approach LOS	F			A			A			A		
d_I, Intersection Delay [s/veh]	57.29											
Intersection LOS	F											

**Intersection Level Of Service Report**  
**Intersection 5: US 101 Overpass/N Ramps**

Control Type:	All-way stop	Delay (sec / veh):	22.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.836

**Intersection Setup**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Approach	Northbound			Eastbound			Westbound			Southeastbound		
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 Pocket	0	0	1	1	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	200.00	200.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	45.00			35.00			35.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

**Volumes**

Name	NB Off-Ramp			US 101 Overpass			US 101 Overpass			NB On-Ramp		
Base Volume Input [veh/h]	413	2	21	107	38	0	0	78	7	0	0	0
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	1.03	1.03	1.03	1.03	1.38	1.00	1.00	1.38	1.03	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	55	0	0	7	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]	480	2	22	117	52	0	0	108	7	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	1.0000	1.0000	0.9200	0.9200	1.0000	1.0000	1.0000
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]	130	1	6	32	14	0	0	29	2	0	0	0
Total Analysis Volume [veh/h]	522	2	24	127	57	0	0	117	8	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	627	793	704	781	860	
Degree of Utilization, x	0.84	0.03	0.18	0.07	0.15	

**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [v]	8.99	0.09	0.65	0.24	0.51	
95th-Percentile Queue Length [ft]	224.64	2.34	16.35	5.89	12.68	
Approach Delay [s/veh]	29.82		8.54		7.90	0.00
Approach LOS	D		A		A	A
Intersection Delay [s/veh]	22.05					
Intersection LOS	C					

**Intersection Level Of Service Report**  
**Intersection 6: S Redwood Hwy/Sandholm Ln**

Control Type:	Two-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):	0.135

**Intersection Setup**

Name	Sandholm Ln		S Redwood Hwy		S Redwood Hwy	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		35.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Sandholm Ln		S Redwood Hwy		S Redwood Hwy	
Base Volume Input [veh/h]	31	4	6	102	60	21
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	1.41	1.41	1.41	1.57	1.57	1.41
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	42	0	0	14	24	72
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]	86	6	8	174	118	102
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	2	2	44	30	26
Total Analysis Volume [veh/h]	86	6	8	174	118	102
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.14	0.01	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.59	10.03	7.68	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.49	0.49	0.02	0.02	0.00	0.00
95th-Percentile Queue Length [ft/ln]	12.35	12.35	0.45	0.45	0.00	0.00
d_A, Approach Delay [s/veh]	11.48		0.34		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]				2.26		
Intersection LOS	B					



**Intersection Level Of Service Report**  
**Intersection 7: Foothill Blvd/Sandholm Ln**

Control Type:	All-way stop	Delay (sec / veh):	7.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.112

**Intersection Setup**

Name	Sandholm Ln		Foothill Blvd		Foothill Blvd	
Approach	Southwestbound		Northwestbound		Southeastbound	
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 Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		25.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Sandholm Ln		Foothill Blvd		Foothill Blvd	
Base Volume Input [veh/h]	0	19	0	0	12	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.41	1.41	1.41	1.41	1.41	1.41
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	72	0	8	42	0	13
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]	72	27	8	42	17	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	18	7	2	11	4	3
Total Analysis Volume [veh/h]	72	27	8	42	17	13
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings****Lanes**

Capacity per Entry Lane [veh/h]	883	978	835
Degree of Utilization, x	0.11	0.05	0.04




**Movement, Approach, & Intersection Results**

95th-Percentile Queue Length [veh]	0.38	0.16	0.11
95th-Percentile Queue Length [ft]	9.44	4.03	2.79
Approach Delay [s/veh]	7.59	6.88	7.47
Approach LOS	A	A	A
Intersection Delay [s/veh]	7.37		
Intersection LOS	A		

**Intersection Level Of Service Report**  
**Intersection 8: S Redwood Hwy/Project St A**

Control Type:	Two-way stop	Delay (sec / veh):	10.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

**Intersection Setup**

Name	Project St A		S Redwood Hwy		S Redwood Hwy	
Approach	Northeastbound		Northwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		50.00		35.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

**Volumes**

Name	Project St A		S Redwood Hwy		S Redwood Hwy	
Base Volume Input [veh/h]	0	0	0	108	64	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.41	1.41	1.41	1.57	1.57	1.41
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	7	12	0	0	24
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]	14	7	12	170	100	24
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	2	3	43	25	6
Total Analysis Volume [veh/h]	14	7	12	170	100	24
Pedestrian Volume [ped/h]	0		0		0	

**Intersection Settings**

Priority Scheme	Stop	Free	Free
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	0.02	0.01	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.43	8.96	7.48	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.09	0.09	0.02	0.02	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.16	2.16	0.62	0.62	0.00	0.00
d_A, Approach Delay [s/veh]	9.94		0.49		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.91					
Intersection LOS	B					

# Appendix C

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## Growth Factor Calculations



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### GROWTH FACTOR CALCULATIONS

Facility	AM 2010	AM 2040	AM GF	AM GF ADJ	PM 2010	PM 2040	PM GF	PM GF ADJ
Cloverdale Blvd	652	1287	1.97	1.68	821	1488	1.81	1.57
Overpass	652	810	1.24	1.17	821	1268	1.54	1.38
South Ramps	431	732	1.70	1.49	281	549	1.95	1.67
North Ramps	217	361	1.66	1.46	504	522	1.04	1.03
<b>AVERAGE</b>				<b>1.45</b>				<b>1.41</b>

Notes: 2010 and 2040 segment volumes taken from SCTA Gravity Demand Model



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# Appendix D

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## Turn Lane Warrants



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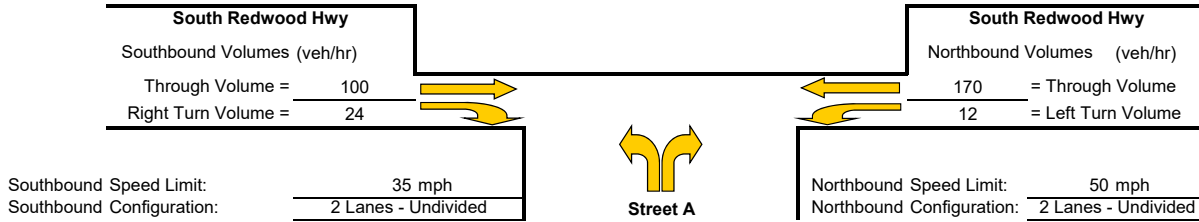


# Turn Lane Warrant Analysis - Tee Intersections

Study Intersection: South Redwood Highway/Street A  
Study Scenario: PM Future + Project

Direction of Analysis Street: North/South

Cross Street Intersects: From the West



## Southbound Right Turn Lane Warrants

1. Check for right turn volume criteria

**Thresholds not met, continue to next step**

2. Check advance volume threshold criteria for turn lane

Advancing Volume Threshold AV = 870.1  
Advancing Volume Va = 124  
If  $AV < Va$  then warrant is met No

**Right Turn Lane Warranted: NO**

## Southbound Right Turn Taper Warrants (evaluate if right turn lane is unwarranted)

1. Check taper volume criteria

**Thresholds not met, continue to next step**

2. Check advance volume threshold criteria for taper

Advancing Volume Threshold AV = 660  
Advancing Volume Va = 124  
If  $AV < Va$  then warrant is met No

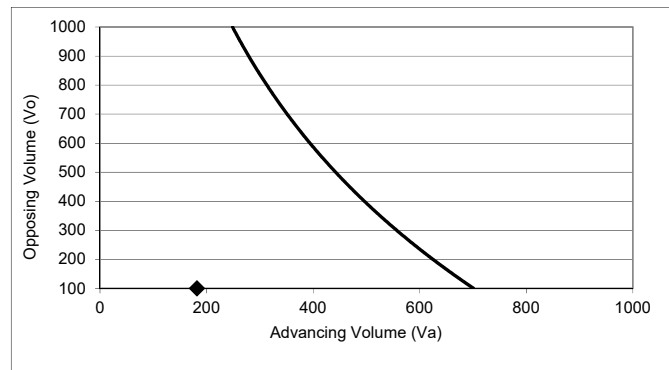
**Right Turn Taper Warranted: NO**

## Northbound Left Turn Lane Warrants

Percentage Left Turns %lt 6.6 %

Advancing Volume Threshold AV 701 veh/hr

If  $AV < Va$  then warrant is met



◆ Study Intersection

Two lane roadway warrant threshold for: 50 mph

Turn lane warranted if point falls to right of warrant threshold line

**Left Turn Lane Warranted: NO**

Methodology based on Washington State Transportation Center Research Report *Method For Prioritizing Intersection Improvements*, January 1997.

The right turn lane and taper analysis is based on work conducted by Cottrell in 1981.

The left turn lane analysis is based on work conducted by M.D. Harmelink in 1967, and modified by Kikuchi and Chakroborty in 1991.



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# Appendix E

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## Speed Survey Data



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**SPEED**

Foothill Blvd Bet. Treadway Dr &amp; Mt. Diablo Way

Day: Thursday

Date: 2/7/2019

City: Cloverdale

Project #: CA19\_8058\_001n

**North Bound**

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
05:00	0	0	0	4	0	0	0	0	0	0	0	0	0	4
06:00	1	2	4	6	5	0	0	0	0	0	0	0	0	18
07:00	1	4	13	22	6	1	0	0	0	0	0	0	0	47
08:00	1	1	4	9	2	1	0	0	0	0	0	0	0	18
09:00	0	4	6	9	4	0	0	0	0	0	0	0	0	23
10:00	2	2	3	5	5	0	0	0	0	0	0	0	0	17
11:00	0	1	6	5	0	0	0	0	0	0	0	0	0	12
12:00 PM	1	0	8	8	4	1	0	0	0	0	0	0	0	22
13:00	1	1	4	8	7	0	0	0	0	0	0	0	0	21
14:00	0	0	8	13	3	0	0	0	0	0	0	0	0	24
15:00	0	4	6	6	7	0	0	0	0	0	0	0	0	23
16:00	1	4	10	14	4	0	0	0	0	0	0	0	0	33
17:00	1	4	6	11	5	0	0	0	0	0	0	0	0	27
18:00	0	0	3	11	4	1	0	0	0	0	0	0	0	19
19:00	0	0	3	5	3	0	0	0	0	0	0	0	0	11
20:00	0	1	2	7	2	0	1	0	0	0	0	0	0	13
21:00	0	0	2	3	2	0	0	0	0	0	0	0	0	7
22:00	0	0	2	3	1	0	0	0	0	0	0	0	0	6
23:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Totals	9	30	92	149	65	4	1							350
% of Totals	3%	9%	26%	43%	19%	1%	0%							100%

AM Volumes	5	16	38	60	22	2	0	0	0	0	0	0	0	143
% AM	1%	5%	11%	17%	6%	1%								41%
AM Peak Hour	10:00	07:00	07:00	07:00	07:00	07:00								07:00
Volume	2	4	13	22	6	1								47
PM Volumes	4	14	54	89	43	2	1	0	0	0	0	0	0	207
% PM	1%	4%	15%	25%	12%	1%	0%							59%
PM Peak Hour	12:00	15:00	16:00	16:00	13:00	12:00	20:00							16:00
Volume	1	4	10	14	7	1	1							33
Directional Peak Periods			AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Speeds			Volume		%	Volume		%	Volume		%	Volume		%
			65	↔	19%	43	↔	12%	60	↔	17%	182	↔	52%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Foothill Blvd	North Bound	21	26	26	31	34	350
Foothill Blvd	South Bound	21	27	26	31	34	356

**SPEED**

Foothill Blvd Bet. Treadway Dr &amp; Mt. Diablo Way

Day: Thursday

Date: 2/7/2019

City: Cloverdale

Project #: CA19\_8058\_001s

**South Bound**

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	2
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:00	1	0	1	2	1	1	0	0	0	0	0	0	0	6
06:00	0	1	2	4	0	0	0	0	0	0	0	0	0	7
07:00	1	2	4	3	2	0	0	0	0	0	0	0	0	12
08:00	0	1	4	9	4	0	0	0	0	0	0	0	0	18
09:00	0	1	2	4	4	0	0	0	0	0	0	0	0	11
10:00	0	3	1	2	1	0	1	0	0	0	0	0	0	8
11:00	1	0	4	4	2	0	1	0	0	0	0	0	0	12
12:00 PM	0	1	6	13	2	1	0	0	0	0	0	0	0	23
13:00	1	0	9	9	9	0	0	0	0	0	0	0	0	28
14:00	0	0	5	7	6	0	0	0	0	0	0	0	0	18
15:00	2	4	12	14	5	0	0	0	0	0	0	0	0	37
16:00	0	1	10	16	4	1	0	0	0	0	0	0	0	32
17:00	1	2	15	28	5	0	0	0	0	0	0	0	0	51
18:00	0	2	6	9	6	1	0	0	0	0	0	0	0	24
19:00	0	0	3	10	5	0	0	0	0	0	0	0	0	18
20:00	0	1	6	13	2	0	0	0	0	0	0	0	0	22
21:00	0	1	3	7	4	0	0	0	0	0	0	0	0	15
22:00	0	0	1	4	0	0	0	0	0	0	0	0	0	5
23:00	0	0	2	2	1	0	0	0	0	0	0	0	0	5
Totals	7	22	97	161	63	4	2							356
% of Totals	2%	6%	27%	45%	18%	1%	1%							100%

AM Volumes	3	10	19	29	14	1	2	0	0	0	0	0	0	78
% AM	1%	3%	5%	8%	4%	0%	1%							22%
AM Peak Hour	05:00	10:00	07:00	08:00	08:00	05:00	10:00							08:00
Volume	1	3	4	9	4	1	1							18
PM Volumes	4	12	78	132	49	3	0	0	0	0	0	0	0	278
% PM	1%	3%	22%	37%	14%	1%								78%
PM Peak Hour	15:00	15:00	17:00	17:00	13:00	12:00								17:00
Volume	2	4	15	28	9	1								51
Directional Peak Periods			AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Speeds			Volume		%	Volume		%	Volume		%	Volume		%
			30	↔	8%	51	↔	14%	83	↔	23%	192	↔	54%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Foothill Blvd	North Bound	21	26	26	31	34	350
Foothill Blvd	South Bound	21	27	26	31	34	356

**SPEED**

Foothill Blvd Bet. Treadway Dr &amp; Mt. Diablo Way

Day: Thursday

Date: 2/7/2019

City: Cloverdale

Project #: CA19\_8058\_001

**Summary**

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	2
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
05:00	1	0	1	6	1	1	0	0	0	0	0	0	0	10
06:00	1	3	6	10	5	0	0	0	0	0	0	0	0	25
07:00	2	6	17	25	8	1	0	0	0	0	0	0	0	59
08:00	1	2	8	18	6	1	0	0	0	0	0	0	0	36
09:00	0	5	8	13	8	0	0	0	0	0	0	0	0	34
10:00	2	5	4	7	6	0	1	0	0	0	0	0	0	25
11:00	1	1	10	9	2	0	1	0	0	0	0	0	0	24
12:00 PM	1	1	14	21	6	2	0	0	0	0	0	0	0	45
13:00	2	1	13	17	16	0	0	0	0	0	0	0	0	49
14:00	0	0	13	20	9	0	0	0	0	0	0	0	0	42
15:00	2	8	18	20	12	0	0	0	0	0	0	0	0	60
16:00	1	5	20	30	8	1	0	0	0	0	0	0	0	65
17:00	2	6	21	39	10	0	0	0	0	0	0	0	0	78
18:00	0	2	9	20	10	2	0	0	0	0	0	0	0	43
19:00	0	0	6	15	8	0	0	0	0	0	0	0	0	29
20:00	0	2	8	20	4	0	1	0	0	0	0	0	0	35
21:00	0	1	5	10	6	0	0	0	0	0	0	0	0	22
22:00	0	0	3	7	1	0	0	0	0	0	0	0	0	11
23:00	0	0	2	2	2	0	0	0	0	0	0	0	0	6
Totals	16	52	189	310	128	8	3							706
% of Totals	2%	7%	27%	44%	18%	1%	0%							100%

AM Volumes	8	26	57	89	36	3	2	0	0	0	0	0	0	221
% AM	1%	4%	8%	13%	5%	0%	0%							31%
AM Peak Hour	07:00	07:00	07:00	07:00	07:00	05:00	10:00							07:00
Volume	2	6	17	25	8	1	1							59
PM Volumes	8	26	132	221	92	5	1	0	0	0	0	0	0	485
% PM	1%	4%	19%	31%	13%	1%	0%							69%
PM Peak Hour	13:00	15:00	17:00	17:00	13:00	12:00	20:00							17:00
Volume	2	8	21	39	16	2	1							78
Directional Peak Periods			AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Speeds			Volume		%	Volume		%	Volume		%	Volume		%
			95	↔	13%	94	↔	13%	143	↔	20%	374	↔	53%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
Foothill Blvd	Summary	21	27	26	31	34	706

**SPEED**

S Redwood Hwy Bet. Sandholm Ln &amp; Kelly Rd

Day: Thursday

Date: 2/7/2019

City: Cloverdale

Project #: CA19\_8058\_002n

**North Bound**

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	0	0	0	1	2	2	0	1	0	0	0	0	0	6
01:00	1	0	0	0	0	0	1	0	0	0	0	0	0	2
02:00	0	0	0	0	0	1	0	1	0	0	0	0	0	2
03:00	0	0	0	0	1	1	0	0	0	0	0	0	0	2
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	3	5	0	0	0	0	0	8
06:00	0	0	0	1	2	3	5	3	2	0	0	0	0	16
07:00	0	1	0	1	1	8	10	4	3	0	0	0	0	28
08:00	0	1	0	1	3	7	11	2	3	1	0	0	0	29
09:00	0	1	1	1	6	12	8	7	6	0	0	0	0	42
10:00	0	0	1	1	3	8	4	13	6	1	0	0	0	37
11:00	0	0	0	0	5	12	11	10	3	1	1	0	0	43
12:00 PM	0	1	0	2	4	9	14	11	8	0	0	0	0	49
13:00	0	0	2	3	5	10	8	5	1	2	0	0	0	36
14:00	0	0	1	2	6	17	12	9	6	1	2	0	0	56
15:00	0	0	1	4	11	12	21	16	9	3	0	0	0	77
16:00	0	0	1	5	9	25	26	23	7	0	2	0	0	98
17:00	0	1	1	1	10	17	18	15	5	1	0	0	0	69
18:00	0	0	0	2	3	15	8	0	1	0	0	0	0	29
19:00	0	0	0	2	2	3	3	1	0	0	0	1	0	12
20:00	0	0	0	0	1	1	3	2	2	1	0	1	0	11
21:00	0	0	0	0	1	3	1	2	2	1	0	0	0	10
22:00	0	0	0	0	0	1	0	0	2	0	0	0	0	3
23:00	0	0	1	0	0	0	0	1	0	0	0	0	0	2
Totals	1	5	9	27	75	167	167	131	66	12	5	2		667
% of Totals	0%	1%	1%	4%	11%	25%	25%	20%	10%	2%	1%	0%		100%

AM Volumes	1	3	2	6	23	54	53	46	23	3	1	0	0	215	
% AM	0%	0%	0%	1%	3%	8%	8%	7%	3%	0%	0%			32%	
AM Peak Hour	01:00	07:00	09:00		09:00	09:00	08:00	10:00	09:00	08:00	11:00			11:00	
Volume	1	1	1	1	6	12	11	13	6	1	1			43	
PM Volumes	0	2	7	21	52	113	114	85	43	9	4	2	0	452	
% PM		0%	1%	3%	8%	17%	17%	13%	6%	1%	1%	0%		68%	
PM Peak Hour		12:00	13:00	16:00	15:00	16:00	16:00	16:00	15:00	15:00	14:00	19:00		16:00	
Volume		1	2	5	11	25	26	23	9	3	2	1		98	
Directional Peak Periods			AM 7-9				NOON 12-2				PM 4-6		Off Peak Volumes		
All Speeds			Volume			%	Volume			%	Volume			%	
			57	↔		9%	85	↔		13%	167	↔		25%	



**SPEED**

S Redwood Hwy Bet. Sandholm Ln &amp; Kelly Rd

Day: Thursday

Date: 2/7/2019

City: Cloverdale

Project #: CA19\_8058\_002s

**South Bound**

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	1	0	2	0	0	0	1	0	0	0	0	0	0	4
01:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	1	1	0	0	0	0	0	2
03:00	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	1	1	1	3	4	2	3	3	0	0	18
06:00	0	0	0	1	7	24	20	16	7	3	0	1	0	79
07:00	0	0	0	3	2	7	18	21	4	0	0	0	1	56
08:00	0	0	0	3	4	10	11	13	3	0	2	0	0	46
09:00	0	1	1	0	7	16	8	10	3	1	0	0	0	47
10:00	0	1	1	2	3	10	10	14	6	1	0	0	0	48
11:00	0	1	0	0	4	6	13	18	6	2	1	0	0	51
12:00 PM	0	0	2	2	3	7	6	19	2	0	0	0	0	41
13:00	0	0	0	2	2	13	10	14	3	1	0	0	0	45
14:00	1	0	1	0	1	7	13	10	8	1	0	0	0	42
15:00	0	0	1	2	4	14	19	10	4	3	0	0	0	57
16:00	0	0	2	1	4	10	15	16	8	0	0	0	0	56
17:00	0	0	3	0	4	8	17	9	5	0	0	0	0	46
18:00	0	0	1	1	1	7	6	6	2	0	0	0	0	24
19:00	0	0	0	1	3	5	4	9	1	0	1	0	0	24
20:00	0	0	0	1	0	2	2	4	1	1	0	0	0	11
21:00	0	0	0	0	0	2	3	2	1	0	1	0	0	9
22:00	0	0	0	0	2	0	1	0	0	0	0	0	0	3
23:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	2	3	14	20	53	149	181	197	66	16	8	1	1	711
% of Totals	0%	0%	2%	3%	7%	21%	25%	28%	9%	2%	1%	0%	0%	100%

AM Volumes	1	3	4	10	29	74	85	98	31	10	6	1	1	353
% AM	0%	0%	1%	1%	4%	10%	12%	14%	4%	1%	1%	0%	0%	50%
AM Peak Hour		09:00		07:00	06:00	06:00	06:00	07:00	06:00	05:00	05:00	06:00	07:00	06:00
Volume	1	1	2	3	7	24	20	21	7	3	3	1	1	79
PM Volumes	1	0	10	10	24	75	96	99	35	6	2	0	0	358
% PM	0%		1%	1%	3%	11%	14%	14%	5%	1%	0%			50%
PM Peak Hour	14:00		17:00	12:00	15:00	15:00	15:00	12:00	14:00	15:00	19:00			15:00
Volume	1		3	2	4	14	19	19	8	3	1			57
Directional Peak Periods			AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Speeds			Volume	%		Volume	%		Volume	%		Volume	%	
			102	↔	14%	86	↔	12%	102	↔	14%	421	↔	59%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
S Redwood Hwy	North Bound	34	41	41	49	54	667
S Redwood Hwy	South Bound	35	43	43	50	54	711

**SPEED**

S Redwood Hwy Bet. Sandholm Ln &amp; Kelly Rd

Day: Thursday

Date: 2/7/2019

City: Cloverdale

Project #: CA19\_8058\_002

**Summary**

Time	< 15	15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 - 69	70 +	Total
00:00 AM	1	0	2	1	2	2	1	1	0	0	0	0	0	10
01:00	1	0	0	0	1	0	1	0	0	0	0	0	0	3
02:00	0	0	0	0	0	1	1	2	0	0	0	0	0	4
03:00	0	0	0	0	1	1	0	1	0	0	0	0	0	3
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	1	1	1	6	9	2	3	3	0	0	26
06:00	0	0	0	2	9	27	25	19	9	3	0	1	0	95
07:00	0	1	0	4	3	15	28	25	7	0	0	0	1	84
08:00	0	1	0	4	7	17	22	15	6	1	2	0	0	75
09:00	0	2	2	1	13	28	16	17	9	1	0	0	0	89
10:00	0	1	2	3	6	18	14	27	12	2	0	0	0	85
11:00	0	1	0	0	9	18	24	28	9	3	2	0	0	94
12:00 PM	0	1	2	4	7	16	20	30	10	0	0	0	0	90
13:00	0	0	2	5	7	23	18	19	4	3	0	0	0	81
14:00	1	0	2	2	7	24	25	19	14	2	2	0	0	98
15:00	0	0	2	6	15	26	40	26	13	6	0	0	0	134
16:00	0	0	3	6	13	35	41	39	15	0	2	0	0	154
17:00	0	1	4	1	14	25	35	24	10	1	0	0	0	115
18:00	0	0	1	3	4	22	14	6	3	0	0	0	0	53
19:00	0	0	0	3	5	8	7	10	1	0	1	1	0	36
20:00	0	0	0	1	1	3	5	6	3	2	0	1	0	22
21:00	0	0	0	0	1	5	4	4	3	1	1	0	0	19
22:00	0	0	0	0	2	1	1	0	2	0	0	0	0	6
23:00	0	0	1	0	0	0	0	1	0	0	0	0	0	2
Totals	3	8	23	47	128	316	348	328	132	28	13	3	1	1378
% of Totals	0%	1%	2%	3%	9%	23%	25%	24%	10%	2%	1%	0%	0%	100%

AM Volumes	2	6	6	16	52	128	138	144	54	13	7	1	1	568
% AM	0%	0%	0%	1%	4%	9%	10%	10%	4%	1%	1%	0%	0%	41%
AM Peak Hour		09:00		07:00	09:00	09:00	07:00	11:00	10:00	05:00	05:00	06:00	07:00	06:00
Volume	1	2	2	4	13	28	28	28	12	3	3	1	1	95
PM Volumes	1	2	17	31	76	188	210	184	78	15	6	2	0	810
% PM	0%	0%	1%	2%	6%	14%	15%	13%	6%	1%	0%	0%		59%
PM Peak Hour	14:00	12:00	17:00	15:00	15:00	16:00	16:00	16:00	16:00	15:00	14:00	19:00		16:00
Volume	1	1	4	6	15	35	41	39	15	6	2	1		154
Directional Peak Periods			AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Speeds			Volume		%	Volume		%	Volume		%	Volume		%
			159	↔	12%	171	↔	12%	269	↔	20%	779	↔	57%

Street Name	Direction	Percentiles					
		15th	50th	Average	85th	95th	ADT
S Redwood Hwy	Summary	35	42	42	50	54	1378

## **I.2 - Addendum to the Traffic Impact Study**

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October 16, 2019

Mr. Jake Lingo  
Integrated Community Development  
21031 Ventura Boulevard, Suite 200  
Woodland Hills, CA 91354

## **Addendum to the *Traffic Impact Study for the Baumgardner Ranch Project***

Dear Mr. Lingo;

W-Trans has completed a review of the revised site plan, which now includes an access point on Sandholm Lane, as it pertains to the analysis contained in the *Traffic Impact Study for the Baumgardner Ranch Project* (TIS), dated May 28, 2019. This addendum letter addresses any potential changes to our analysis as a result of the modified site plan, including an evaluation of adequacy of stopping sight distance at the new driveway. The site plan is enclosed for reference.

### **Operational Analysis**

With a driveway on Sandholm Lane, residents of the row-houses on Parcel B would no longer have to pass through the intersection of Foothill Boulevard/Sandholm Lane to access the project site, so traffic conditions as currently proposed would be better than evaluated in the TIS at this particular location due to the decreased volumes. The intersection was projected to operate at LOS A during both peak hours under all scenarios evaluated in the traffic study, so LOS A operation would be expected with the addition of the new access point (and the associated reduced volumes). The new Sandholm Lane driveway would not alter access to any other parcels so the levels of service presented in the traffic study would remain unchanged for the other study intersections.

### **Sight Distance**

Sight distances along Sandholm Lane at the proposed location of the driveway were evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distances at driveways are based on stopping sight distance, with approach travel speed used as the basis for determining the recommended sight distance.

For the posted speed limit of 25 mph on Sandholm Lane, the recommended stopping sight distance is 150 feet. Based on a review of field conditions, sight lines are clear for more than 300 feet to both directions from the proposed driveway location, which is more than adequate for the posted speed limit. Additionally, as Sandholm Lane is straight and flat, adequate stopping sight distance is available for a following driver to notice and react to a motorist slowing or stopped to turn into the driveway. To minimize potential conflict points with traffic exiting the Charlois Cooperage site, the project driveway should be aligned with the existing driveway on the opposite side of Sandholm Lane. Additionally, if street parking is to be allowed along the project frontage with Sandholm Lane, red curb should be painted for 25 feet on both sides of the project driveway to maintain adequate sight lines.

**Finding** – Based on a review of field conditions, sight lines would be adequate at the project driveway on Sandholm Lane.

**Recommendation** – As proposed in the site plan, the driveway on Sandholm Lane should be aligned with the existing driveway to the Charlois Cooperage parcel on the opposite side of Sandholm Lane. Red curb should be painted on either side of the driveway, if street parking is to be allowed on Sandholm Lane.

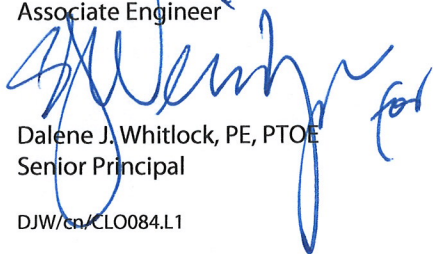
### Conclusions and Recommendations

The provision of an access point on Sandholm Lane would not alter any of the findings or recommendations contained in the original TIS. In addition, however, it is recommended that the new driveway be aligned with the existing driveway to the Charlois Cooperate site, as shown on the site plan. If street parking is to be allowed along the project frontage with Sandholm Lane, the curb should be marked red for 25 feet on either side of the project driveway so that parked vehicles do not obstruct sight lines.

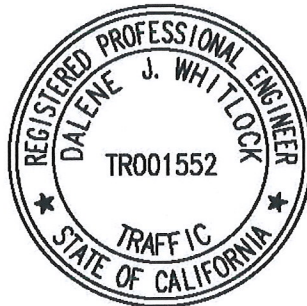
We hope this information is adequate to address the potential traffic issues associated with the proposed driveway on Sandholm Lane. Thank you for giving W-Trans the opportunity to provide these services. Please call if you have any questions.

Sincerely,

  
Cameron Nye, EIT  
Associate Engineer

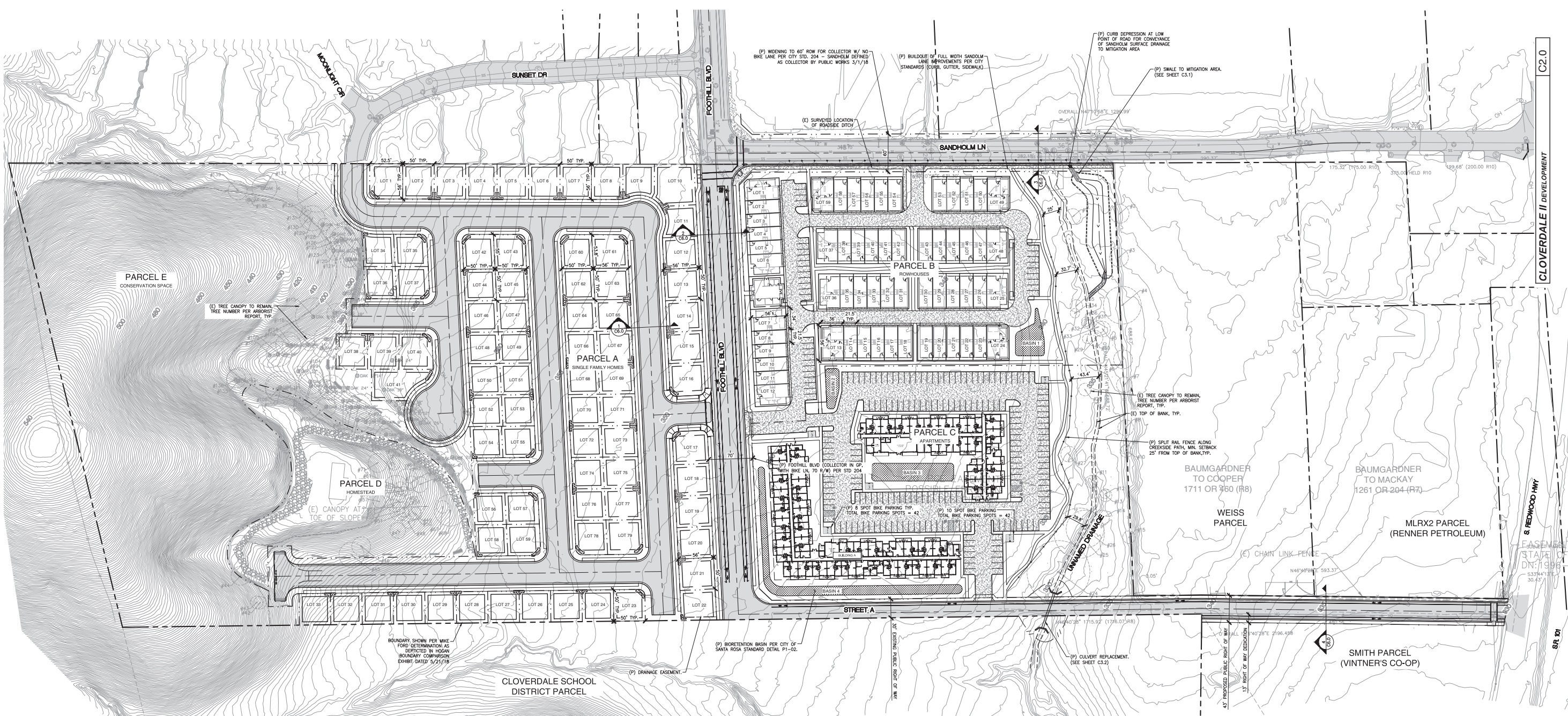
  
Dalene J. Whitlock, PE, PTOE  
Senior Principal

DJW/cn/CLO084.L1



Enclosure: Site Plan





GENERAL LEGEND

- EXISTING/PROPOSED CENTERLINE (E)
- EXISTING PROPERTY LINE (EX. R)
- PROPOSED PROPERTY LINE (E)
- PROPOSED SETBACK LINE
- EXISTING/PROPOSED EASEMENT
- PROPOSED SNAKOUT
- GUTTER FLOWLINE
- PROPOSED CURB AND GUTTER
- PROPOSED SLOTTED CURB
- PROPOSED RETAINING WALL, HEIGHT PER PLAN.
- PROPOSED CONCRETE PAVEMENT/HARDSCAPE
- PROPOSED ASPHALT CONCRETE PAVEMENT
- PROPOSED GRAVEL
- DEEPEEN FOUNDATION WALL, RETAINED HEIGHT PER PLAN, SEE STRUCTURAL PLANS BY OTHERS FOR CONSTRUCTION DETAILS.
- RAISED FOUNDATION WALL, RETAINED HEIGHT PER PLAN, SEE STRUCTURAL PLANS BY OTHERS FOR CONSTRUCTION DETAILS.

GRADING LEGEND

- 98... BIDGE... 100% GRADE BREAK
- DAYLIGHT OF GRADING LIMITS (CUT/FILL LINE)
- LIMIT OF DISTURBANCE
- SWALE
- CONTOUR MAJOR
- CONTOUR MINOR
- TOP OF SLOPE
- TOE OF SLOPE
- OVERLAND RELEASE PATH

SITE INFORMATION

SITE ADDRESS: 28185 HIGHWAY 101, CLOVERDALE, CA 95425  
APN 117-040-053/084  
GROSS SITE AREA = 28.5 ACRES +/-  
PRESERVATION AREA = 8.173 ACRES  
PROJECT ZONING (FROM TABLE 18.04.050-A):  
R-2 DENSITY = 8 UNITS/ACRE  
R-3 DENSITY = 16 UNITS/ACRE  
FLOOR AREA RATIO (FAR) FOR SITE > 4,000 SF = 0.40 (R2 AND R3)  
MAX BUILDING HEIGHT = 35' FOR 2 STORIES, WHICHEVER IS LESS (R2 AND R3)  
DISTANCE B/T BUILDING = 10' (R2 AND R3)  
PUBLIC OPEN SPACE PER UNIT = 100 SF (R2 AND R3)  
PRIVATE OPEN SPACE PER UNIT = 60 SF (R2 AND R3)  
PARKING REQUIREMENTS (FROM TABLE 18.11.050-A):  
FOR CLUSTER OWNERSHIP HOUSING (SINGLE-FAMILY DWELLING IN A SMALL LOT, TOWNHOUSES, CONDOMINIUMS, AND ATTACHED HOUSING):  
1 COVERED SPACE PER UNIT, PLUS 1.5 UNRESTRICTED SHARED PARKING SPACES PER UNIT, PLUS 0.5 PARKING SPACE PER UNIT, WHICH MAY BE RESTRICTED TO SPECIFIC UNITS OR MAY BE UNRESTRICTED

PARCEL A - SINGLE FAMILY HOMES

GROSS AREA = 9.350 ACRES  
STREET DEDICATION AREA = 0.581 ACRES  
NET AREA = 8.769 ACRES  
UNIT COUNT = 79 UNITS  
DENSITY = 79 UNITS/9.350 AC = 8.45 UNITS/AC  
\*\* BUILDING SETBACKS = AS SHOWN \*\*  
HOUSE PLAN A: 2-3 BED, 2 BATH, 1,144 SF NET  
HOUSE PLAN B: 3 BED, 2.5 BATH, 1,450 SF NET  
HOUSE PLAN C: 4 BED, 2.5 BATH, 1,500 SF NET  
HOUSE PLAN D: 4 BED, 2.5 BATH, 1,650 SF NET  
TOTAL GARAGE (TWO CARS) = 440 SF x 79 UNITS TOTAL = 34,760 SF  
TOTAL BUILDING AREA = 167,620 SF / (9,350 AC x 43,560 SF/AC) = 41%  
BUILDING SITE COVERAGE = 167,620 SF / (9,350 AC x 43,560 SF/AC) = 41%  
PROVIDED PARKING:  
ATTACHED GARAGES = 2 COVERED PARKING SPACES/UNIT x 79 UNITS = 158 COVERED GARAGE SPACES  
SITE PARKING = 1 ON STREET SPACE/UNIT x 79 UNITS = 79 SPACES  
\*\* TOTAL PARKING = 237 SPACES \*\*  
\*ACTUAL TOTAL BUILDING AREA MAY VARY FROM WHAT IS SHOWN ABOVE BASED UPON THE FINAL UNIT COUNT.

PARCEL B - ROWHOUSES (2-STORY)

GROSS AREA = 4.947 ACRES  
PRESERVATION AREA = 0.866 ACRES  
STREET DEDICATION AREA = 0.512 ACRES  
NET AREA = 3.570 ACRES  
UNIT COUNT = 59 UNITS  
DENSITY = 59 UNITS/4.947 AC = 11.9 UNITS/AC  
1 COMMUNITY CLUBHOUSE  
\*\* BUILDING SETBACKS = 10' \*\*  
ROWHOUSE E: 2 BED, 2.5 BATH, 1,235 SF NET  
ROWHOUSE F: 3 BED, 2.5 BATH, 1,375 SF NET  
ROWHOUSE G: 4 BED, 2.5 BATH, 1,550 SF NET  
ROWHOUSE H: 4 BED, 2.5 BATH, 1,115 SF NET  
ROWHOUSE I: 3 BED, 2.5 BATH, 1,365 SF NET  
ROWHOUSE J: 4 BED, 3 BATH, 1,608 SF NET  
COMMUNITY BUILDING: 1,600 SF  
\*TOTAL BUILDING AREA = 39,965 SF  
BUILDING SITE COVERAGE = 39,965 SF / (4,947 AC x 43,560 SF/AC) = 18.5%  
PROVIDED PARKING:  
ATTACHED GARAGES = 2 COVERED PARKING SPACES/UNIT x 60 UNITS = 120 COVERED GARAGE SPACES  
SITE PARKING = 35 SHARED PARKING SPACES  
\*\* TOTAL PARKING = 155 SPACES \*\*  
\*ACTUAL TOTAL BUILDING AREA MAY VARY FROM WHAT IS SHOWN ABOVE BASED UPON THE FINAL UNIT COUNT.

PARCEL C - APARTMENTS

GROSS AREA = 5.892 ACRES  
PRESERVATION AREA = 1.058 ACRES  
STREET DEDICATION AREA = 3.658 ACRES  
NET AREA = 1.176 ACRES  
UNIT COUNT = 166 UNITS  
DENSITY = 166 UNITS/5.892 AC = 28.2 UNITS/AC  
1 COMMUNITY CLUBHOUSE  
\*\* BUILDING SETBACKS = 25' \*\*  
BUILDING A: (95) ONE BED UNITS, (3) TWO BED UNITS, (3) THREE BED UNITS  
BUILDING B: (62) ONE BED UNITS, (3) TWO BED UNITS  
TOTAL BUILDING AREA = 41,875 SF  
BUILDING SITE COVERAGE = 41,875 SF / (3,658 AC x 43,560 SF/AC) = 16%  
\*\* TOTAL PARKING = 184 SPACES \*\*  
\*ACTUAL TOTAL BUILDING AREA MAY VARY FROM WHAT IS SHOWN ABOVE BASED UPON THE FINAL UNIT COUNT.

PARCEL D - HOMESTEAD

GROSS AREA = 1.508 ACRES  
GROSS AREA = 6.801 ACRES

PARCEL E - CONSERVATION SPACE

GROSS AREA = 6.801 ACRES  
PARCEL A - SINGLE FAMILY HOMES = 101,915 SF  
FOOTHILL BOULEVARD = 33,040 SF  
STREET A = 35,570 SF

TOTAL SITE AREAS

GROSS AREA = 28.50 ACRES  
PRESERVATION AREA = 8.173 ACRES  
STREET DEDICATION AREA = 2,268 ACRES  
NET AREA = 18.06 ACRES  
TOTAL UNIT COUNT = 305 UNITS  
DENSITY = 305 UNITS/28.50 AC = 10.70 UNITS/AC  
2 COMMUNITY CLUBHOUSES  
\*STREET DEDICATION AREA INCLUDES FOOTHILL, SANDHOLM AND STREET A. STREET DEDICATION AREA DOES NOT INCLUDE MINOR STREETS WITHIN THE INTERIOR OF PARCELS A, B AND C.

SITE IMPORT/EXPORT

EARTHWORKS:  
THE GRADING ACTIVITIES FOR THE PROPOSED DEVELOPMENT SHALL RESULT IN BALANCED EARTHWORKS.  
MATERIAL EXPORT:  
THE MATERIAL RESULTING FROM THE DEMOLITION OF THE EXISTING BUILDINGS LOCATED ON-SITE SHALL BE EXPORTED OFF-SITE, TO AN APPROVED DISPOSAL SITE. THE APPROXIMATE EXPORT VOLUME IS 1,250 CUBIC YARDS.

STORMWATER ANALYSIS

ALL STORM WATER RUNOFF GENERATED FROM THE PROPOSED DEVELOPMENT WILL BE MITIGATED WITHIN BIORETENTION BASINS. BASIN SIZING DETERMINED USING THE CITY OF SANTA ROSA STORM WATER LID TECHNICAL DESIGN MANUAL.  
PARCEL A - SINGLE FAMILY HOMES  
EACH LOT WILL INCLUDE AN ON-SITE BIORETENTION BASIN. FOR LOTS WITH A DEPTH OF 56', THE AMOUNT OF IMPERVIOUS AREA WAS ASSUMED TO BE 75% OF THE TOTAL LOT AREA AND FOR LOTS WITH A DEPTH OF 50', THE AMOUNT OF IMPERVIOUS AREA WAS ASSUMED TO BE 58% OF THE TOTAL LOT AREA. WHERE POSSIBLE, ONE BASIN WAS USED TO TREAT ADJACENT LOTS. EACH BASIN HAS A PONDING DEPTH OF 6 INCHES AND A 3 FOOT DEPTH OF STRUCTURAL SOIL.  
TOTAL BIORETENTION AREA = 4,633 SF  
TOTAL GROUND DISTURBANCE = 515 CY  
PARCEL B - ROWHOUSES  
PARCEL B WAS SPLIT INTO TWO DRAINAGE MANAGEMENT AREAS (DMA). THE DMAS WILL DRAIN TO SEPARATE BASINS. SIZING OF EACH BASIN (BASINS 1 AND 2) HAS BEEN PROVIDED IN THE "BIORETENTION BASIN SUMMARY" TABLE SHOWN TO THE RIGHT.  
TOTAL BIORETENTION AREA = 3,400 SF  
TOTAL GROUND DISTURBANCE = 570 CY  
PARCEL C - APARTMENTS  
ONE BASIN (BASIN 3) WILL BE USED FOR PARCEL C RUNOFF. SEE "BIORETENTION BASIN SUMMARY" TABLE SHOWN TO THE RIGHT FOR SIZING INFORMATION.  
TOTAL BIORETENTION AREA = 3,620 SF  
TOTAL GROUND DISTURBANCE = 540 CY  
PUBLIC ROADWAYS  
RUNOFF GENERATED FROM FOOTHILL BOULEVARD, A PORTION OF STREET A AND THE PUBLIC ROADWAYS WITHIN PARCEL A WILL BE TREATED IN ONE BASIN (BASIN 4).  
TOTAL BIORETENTION AREA = 6,100 SF  
TOTAL GROUND DISTURBANCE = 450 CY  
TOTAL DEVELOPMENT BIORETENTION AREA = 17,753 SF  
TOTAL DEVELOPMENT GROUND DISTURBANCE = 2,075 CY

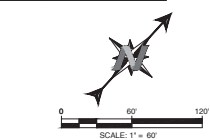
PARCEL A - SINGLE FAMILY HOMES LOT SUMMARY			
FLOORPLAN	MINIMUM LOT SIZE	ACCOMMODATING LOTS	TOTAL ACCOMMODATING LOTS
A	56'x50'	1-8, 10, 12-22, 38-41, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79	34.0
B	50'x50'	ALL	79.0
C	50'x50'	ALL	79.0
D	56'x50'	1-8, 10, 12-22, 38-41, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79	34.0

THE A/D, AND B/C DELINEATIONS ON THE SINGLE FAMILY HOME LOTS REPRESENT THE LOTS THAT CAN ACCOMMODATE FLOORPLANS A AND D, AND B AND C RESPECTIVELY.

PARCEL B - ROWHOUSE LOT SUMMARY			
FLOORPLAN	MINIMUM LOT SIZE	ACCOMMODATING LOTS	NUMBER OF LOTS
E	52'x21.5'	ALL	18
F	52'x21.5'	ALL	27
G	52'x21.5'	ALL	3
H	52'x34'	13, 24, 49, 60	4
J	52'x32'	1, 6-7, 12-13, 24-25, 36-37, 48-49, 60	6
K	52'x32'	1, 6-7, 12-13, 24-25, 36-37, 48-49, 60	2
TOTAL			60

BIORETENTION BASIN SUMMARY				
NO.	SURFACE AREA (SF)	PONDED AREA (SF)	PONDING DEPTH (FT.)	*STRUCTURAL SOIL DEPTH (FT.)
1	2,200	2,350	0.5	4.5
2	1,200	1,350	0.5	4.5
3	3,620	3,930	0.5	4.0
4	6,100	8,596	1.0	2.0

\* SEE SHEET C3.1 AND C3.2 FOR MITIGATION OF DITCH AND CREEK IMPACTS.  
MITIGATION BASIN IS CALCULATED SEPARATELY.



CLOVERDALE II DEVELOPMENT

The above drawings, specifications, ideas, designs and arrangements represented hereby are and shall remain property of the Engineer (Walsh Engineering), and no part thereof shall be copied, disclosed to others or used in connection with any other project other than the specific project for which they have been prepared and developed, without the written consent of the Engineer (Walsh Engineering). Visual content with these drawings or specifications shall constitute conclusive evidence of acceptance of these restrictions. Written dimensions on these drawings shall have precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job, and this office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication. 2017 ©

CONSULTANT  
**W WALSH ENGINEERING**  
WALSHENGINEERING.NET (805) 319-4948  
108 GARDEN STREET, SUITE 202-204 SAN LUIS OBISPO, CA 95401



CIVIL SITE PLAN

CLOVERDALE II DEVELOPMENT  
SANDHOLM LANE, CLOVERDALE, CA 95425  
INTEGRATED COMMUNITY DEVELOPMENT  
2103 KENTWOOD BOULEVARD, SUITE 300  
WOODLAND HILLS, CALIFORNIA 91364  
FAX/MILE: (818) 905-2440

REVISIONS


DATE 9/13/2019

SCALE AS NOTED

DRAWN KG

JOB no. 2017240

SHEETS

SHEET NUMBER

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