Appendix J

Traffic Impact Analysis

Stantec

Memo

To:	Steve Kim Sand Canyon Country Club	From:	Daryl Zerfass and Sandhya Perumalla Stantec
File:	2042576900	Date:	August 7, 2020

Reference: Sand Canyon Resort VMT Analysis

Stantec Consulting Services Inc. (Stantec) has prepared a vehicle miles of travel (VMT) impact analysis for the Sand Canyon Resort (Project) located in the City of Santa Clarita, California. The Project includes 392 guest rooms consisting of a hotel and separate villas, a banquet facility that includes ballrooms and meeting rooms for weddings, events and conferences for day use, and will be integrated with the existing 27-hole golf course. The Project includes amenities like miniature golf, swimming pools, tennis, pickle ball courts, a three-mile long multi-purpose trail, upscale restaurants, spa and sauna, beauty salons, gym and kids club. The purpose of this memo is to document the findings of the VMT impact analysis for use in the Project's environmental study.

This VMT analysis was prepared in support of the Project's environmental documentation and complies with the updated California Environmental Quality Act (CEQA) guidelines that incorporates the requirements of Senate Bill 743 (SB 743).Generally, SB 743 moves away from using delay-based level of service (LOS) as the metric for identifying a project's significant impact to instead use VMT. The analysis has been prepared in accordance with the City of Santa Clarita's VMT analysis guidelines.

Project Screening

The VMT guidelines provide screening criteria that is used to identify if a project is expected to have a less-than-significant impact without conducting a more detailed VMT analysis. The screening criteria is based on project size, locally serving retail, areas of low VMT, transit priority areas, affordable housing, and transportation facilities project types as shown in Table 1.

Table 1 Project Screening Criteria and Threshold

Screening Category	Criteria/Screening	Requirements to Meet Screening Criteria
Project Size Screening	Small Projects can be screened out from completing a full VMT analysis.	If the Project generates less than 110 trips per day, the Project is assumed to have a less than significant impact.
Locally Serving Retail Screening	Locally serving retail Projects can be screened out from completing a full VMT analysis.	If local serving retail is 50,000 square feet or less, the retail Project may be presumed to have a less than significant impact.
Low VMT Area Screening	Residential and Office Projects that are located in areas with low VMT and that are similar in character to the existing development can be screened out from completing a full VMT analysis.	If the residential and office Project is in an area that is already 15% below the Baseline VMT, the Project is assumed to have a less than significant impact.

Transit Proximity Screening	Projects within ½ mile of a major transit stop or a stop located along a high-quality transit corridor generally reduce VMT and therefore can be screened out from completing a full VMT analysis.	If the Project is within ½ mile of a major or high-quality transit stop/corridor, the Project is assumed to have a less than significant impact. The project should generally also meet the following criteria: - FAR >= 0.75 - Not provide more parking than required by City - Be consistent with the regional SCS - Not replace existing affordable units with a smaller number of moderate to high-income units
Affordable Housing Screening	Affordable housing in infill locations can be screened out from completing a full VMT analysis.	If a residential Project is comprised 100% of affordable units and is located in an infill location, then the Project is assumed to have a less than significant impact.
Transportation Facilities Screening	Transportation Projects that promote non-auto travel, improve safety, or improve traffic operations can be screened out from completing a full VMT analysis.	If the Project promotes non-auto travel, such as transit, bicycle and pedestrian facilities, improves safety, or improves traffic operations at current bottlenecks, intersection traffic control, or widening at intersections to provide new turn lanes, then the Project is assumed to have a less than significant.
FAR = Floor Area Ratio SCS = Sustainable Community Strategy Source: Transportation Analysis Updates in Santa Clarita, May 2020		

The project is estimated to generate approximately 921 daily trips; therefore, the small project screening criteria does not apply. The Project is not in a low VMT generating area based on City model data; therefore, it does not qualify for the location-based screening.

Regarding transit, there is a bus stop within approximately two-mile radius of the Project site. The Via Princessa Metrolink station will be moved to the Vista Canyon area and will then be approximately two miles away from the Project site, however the project does not meet the criteria for transit priority area screening. The Project is not an affordable housing project nor is it a locally serving retail project; therefore, the affordable housing screening criteria and locally serving retail screening criteria does not apply. The project is not a transportation facilities project; therefore, the screening does not apply.

VMT Analysis Performance Criteria

The City's VMT guidelines include significance thresholds that determine a significant transportation impact. However, it does not specifically address specialty uses such as the proposed Project (resort hotel). Therefore, for this analysis the Project has been evaluated in two parts: 1) as an employment generator consistent with the guidelines for employment (commercial or industrial) project since the Project would generate employment-related trips, and 2) as a generator of visitor/tourist trips.

Reference: **Sand Canyon Resort VMT Analysis**

For an employment (commercial or industrial) project, the significance threshold is when the project exceeds a level of 15% below the Citywide baseline VMT per employee for home-based work (HBW) trips. If a significant impact is identified utilizing the significance thresholds, feasible mitigation should be identified to remove or reduce the Project's VMT impact.

Analysis of Employee VMT

The resort proposes to have approximately 500 employees (includes part-time and full-time employees) in the future. However, not all employees will be present at the site at the same time. At any given time, approximately 40% of the total employees would be present on site based on the Project's plan to operate the resort with two shifts for most of the employees, one from 6 am – 2 pm and the other from 2 pm - 10 pm with the remaining 20% of the employees working from the 10pm - 6am.

The baseline VMT trends of the Project's traffic analysis zone (TAZ) can be used to estimate the Project's employee generated VMT since there are other employment generating uses in the Project's TAZ. The Project is located in TAZ 20276100. As shown in Table 2, the Project's HBW VMT is estimated to be 21.7 vehicle-miles per employee, which is 17.6% above the Citywide average VMT per employee.

Table 2 VMT Analysis

Analysis Metrics: Resort Hotel	
Project Land Use	392 guest rooms, Resort Hotel
Project Screening	None
Project TAZ 20276100 Population	2,520 residents
Project TAZ 20276100 Employment	473 employees
Project TAZ 20276100 Home-Based Work VMT per Employee (2020)	21.7 VMT per employee
Santa Clarita Average Home-Based Work VMT per Employee (2020)	18.45 VMT per employee[1]
Percent Difference (comparison to baseline)	+17.6%
Threshold of Significance (15% reduction from baseline)	15.7 VMT per employee[2]
Difference (Project minus Threshold of Significance)	6.0 VMT per employee
Is Project above or below Threshold of Significance	Above Threshold of Significance
Significant Transportation Impact	Yes
Project Impact (comparison to Threshold of Significance)	+38.2%
Source: [1] SCAG 2016 RTP/SCS Travel Demand Model, Santa Clarita 2020 VMT Look Up Table provided by the City via email dated June 23, 2020 [2] Transportation Analysis Updates in Santa Clarita, Fehr & Peers, May 2020	

Based on the VMT guidelines, for the significance threshold a 15% reduction is applied to the citywide baseline average HBW VMT (18.45 VMT per employee), resulting in a threshold of significance of 15.7 VMT per employee. Since 21.7 Project VMT per employee is greater than the threshold of significance, the Project

would result in a significant impact and mitigation would be required for the impact to be reduced and potentially less than significant. Mitigation addressing the above impact is addressed in the following section.

Analysis of Resort Guest VMT

The Project includes a resort style hotel, which will attract a wide range of visitor and guest types. Some guests will be from the southern California area, while others will be arriving from out of state or from other countries. The facility is being designed as a full-service destination resort where guests can stay multiple days without the need to leave the facility. It will also provide facilities for conferences and special events such as weddings. A shuttle bus will operate between the resort and the new Vista Canyon Metrolink rail station, which is being constructed approximately two miles from the project site.

The SCAG model does not include data specific to hotel or resort types of use, therefore the SCAG model does not allow for a quantitative analysis of VMT regarding the resort's visitors and guests. The City's VMT analysis guidelines provides limited guidance on evaluating special types of use such as a resort but does state that the approach should be consistent with the overall goal of SB 743, which is to reduce VMT. The specific approach used for analysis of special uses is left to the discretion of the lead agency.

Vehicle trips made by the resort's visitors and guests are a unique trip type. Unlike trips made for the purpose of work, school, or shopping, a typical vacation or special event trip will be made infrequently. When considered on a per capita basis, these infrequent trips will have a negligible effect on per capita VMT rates. Guests, while at the resort, will typically generate minimal VMT due to the all-inclusive features of the resort. In comparison to a "typical" day that includes trips made for work, school, or shopping, resort guests can be expected to generate significantly lower than average VMT. Overall, the resorts visitors and guests are expected to have a less than significant impact on VMT.

Mitigation

Certain mitigation measures are feasible for reducing or removing VMT. Various sources, such as the California Air Pollution Control Officers Association (CAPCOA) Quantifying Greenhouse Gas Mitigation Measures[1] report have identified actions and changes to project features that reduce or eliminate VMT. The following strategies are described in the VMT guidelines as sample options that are most effective in areas like Santa Clarita and are appropriate for the proposed Project to avoid or substantially reduce the Project's significant impact:

- Provide Ride-Sharing Programs (TRT-3)
- Implement Subsidized or Discounted Transit Program (TRT-4)
- Encourage Telecommuting and Alternative Work Schedules (TRT-6)
- Implement Commute Trip Reduction Marketing (TRT-7)
- Provide Employer-Sponsored Vanpool/Shuttle (TRT-11)

[1] Quantifying Greenhouse Gas Mitigation Measures, California Air Pollution Control Officers Association, August 2010.

Reference: **Sand Canyon Resort VMT Analysis**

According to the CAPCOA report, each of these strategies would be applicable in urban and suburban locations. Because the project is located in a more rural area of suburban Santa Clarita, they may not be as effective as the calculations would indicate. To account for this fact conservative estimates of employee participation, as noted in the subsequent discussion, have been applied to the VMT reduction calculations.

Mitigation Measure 1 (MM-1): Provide Ride-Sharing Programs for Employees (TRT-3)[2]

The Project shall provide/promote ride-sharing programs to the resort employees by utilizing approaches such as designating a certain percentage of parking spaces for ride sharing vehicles, designating adequate passenger loading/unloading and waiting areas for ride-sharing vehicles, and providing a website or message boards for coordinating rides. Increasing the vehicle occupancy by utilizing ride sharing will result in fewer cars driving the same trip, thereby decreasing the VMT.

Below is the estimated VMT reduction based on CAPCOA's TRT-3 Providing Ride-Sharing Programs. Although ride-sharing programs would be available to all staff, the calculations conservatively assume that the program is available and utilized by 25 percent of staff members:

% VMT Reduction = Commute x Employee

Where, Commute = % reduction in commute VMT (for low density suburb, Commute = 5%)

Employee = % employees eligible (25%)

Project Calculation:

% VMT reduction = 5% x 25% = 1.3%

Source: CAPCOA

As shown above, providing ride-sharing programs to approximately 25% of the resort employees would result in a 1.3% reduction in VMT.

Mitigation Measure 2 (MM-2): Implement Subsidized or Discounted Transit Program for Employees (TRT-4)[3]

The Project shall provide subsidized or discounted daily or monthly public transit passes to the resort employees.

Below is the estimated VMT reduction based on CAPCOA's TRT-4 Implement Subsidized or Discounted Transit Program. Although subsidized or discounted transit program would be available to all staff, the calculations conservatively assume that the program is available and utilized by 25 percent of staff members:

[2] Ibid, Page 227.
[3] Ibid, Page 230.

% VMT Reduction = A x B x C

Where, A = % reduction in commute vehicle trips (for low density suburb, providing a daily transit subsidy of $1.49, % reduction in commute VT = 3.3%)[1]

B = % employees eligible (25%)

C = Adjustment from commute VT to commute VMT (C = 1.0)

Project Calculation:

% VMT reduction = 3.3% x 25% x 1.0 = 0.8%

[1] See Attachment A, Mitigation Measure #2

Source: CAPCOA

As shown above, implementing subsidized or discounted transit program to approximately 25% of the resort employees, would result in a 0.8% reduction in VMT.

Mitigation Measure 3 (MM-3): Encourage Telecommuting and Alternative Work Schedules for Employees (TRT-6)[4]

According to CAPCOA, encouraging telecommuting and alternative work schedules would reduce the number of commute trips, thereby reducing the Project's VMT. Staggered start times, flexible schedules, or compressed work weeks are examples of alternative work schedules. Because resort operations require most of the employees to be on-site 24-hours per day, telecommuting and alternative work schedules may not be feasible for a majority of the employees. The project shall implement a 4-day/40-hour work schedules for approximately 10% of the resort employees.

Below is the estimated VMT reduction based on CAPCOA's TRT-6 Encourage Telecommuting and Alternative Work Schedules methodology:

% Commute VMT Reduction = Commute

Where, Commute = % reduction in commute VMT

Project Calculation,

% VMT reduction in commute VMT for a maximum of 10% employee participation, for a 4-day / 40-hour work week = 1.5%[1]

[1] See Attachment A, Mitigation Measure #3

Source: CAPCOA

[4] Ibid, Page 236.

Reference: **Sand Canyon Resort VMT Analysis**

As shown above, with 10% employee participation in an alternate work schedule consisting of a 4-day/40-hour work week, a VMT reduction of 1.5% would result.

Mitigation Measure 4 (MM-4): Implement Commute Trip Reduction Marketing (TRT-7)[5]

The Project shall implement marketing strategies to reduce commute trips. The marketing strategies would include new employee orientation of trip reduction and alternative mode options, event promotions and publications.

Below is the estimated VMT reduction based on CAPCOA's TRT-7 Implement Commute Trip Reduction Marketing. Although the marketing would target all employees, a conservative assumption of marketing to only 25 percent of the employees has been utilized in the calculations:

% Commute VMT Reduction = A x B x C

Where, A = % reduction in commute vehicle trips (4%)

B = % employees eligible (25%)

C = Adjustment from commute VT to commute VMT (C = 1.0)

Project Calculation:

% VMT reduction = 4% x 25% x 1.0 = 1.0%

Source: CAPCOA

As shown above, implementing/promoting commute trip reduction marketing to approximately 25% of the resort employees, would result in a 1.0% reduction in VMT.

Mitigation Measure 5 (MM-5): Provide Employer-Sponsored Vanpool/Shuttle (TRT-11)[6]

The Project shall provide an employer-sponsored vanpool and shuttle for use by employees for commutes to work, while shuttle will service the nearby transit station. The vanpool and shuttle will be available to all employees; however, the calculations conservatively assume the program would be offered/utilized to 25 percent of employees.

% VMT Reduction = A x B x C

Where, A = % shift in vanpool mode share of commute trips (10%*)

B = % employees eligible (25%)

C = adjustment from vanpool mode share to commute VMT (C = 0.67)

[5] Ibid, Page 240.
[6] Ibid, Page 253.

Reference: **Sand Canyon Resort VMT Analysis**

Project Calculation:

% VMT reduction = 10% x 25% x 0.67 = 1.7%

*10% represents the mid-range of typical annual reduction in vehicle mode share.

Source: CAPCOA

As shown above, providing employer-sponsored vanpool/shuttle to approximately 25% of the resort employees, would result in a 1.7% reduction in VMT.

Mitigation Summary

The implementation of the above-mentioned mitigation measures would reduce the proposed Project's VMT impact by an overall 28.7% reduction in VMT as shown in Table 3. Note that the VMT reductions associated with the above mitigation measures are applied incrementally, resulting in a lower net reduction in comparison to the sum of the numbers.

Table 3 VMT Reductions Summary

Description	CAPCOA Category	Calculated Reduction
1. The Project shall provide ride-sharing programs for approximately 25% of the employees	Commute Trip Reduction Programs TRT-3	1.3%
2. The Project shall implement subsidized or discounted transit programs for approximately 25% of the employees	Commute Trip Reduction Programs TRT-4	0.8%
3. The Project shall encourage alternative work schedules for approximately 10% of the employees	Commute Trip Reduction Programs TRT-6	1.5%
4. The Project shall implement commute trip reduction marketing for approximately 25% of the employees	Commute Trip Reduction Programs TRT-7	1.0%
5. The Project shall provide employer-sponsored vanpool/shuttle programs for approximately 25% of the employees	Commute Trip Reduction Programs TRT-11	1.7%
Total		**6.1%[1]**

[1] The calculated reductions do not sum to a total since the effect of individual strategy reductions are multiplicative (not additive). Overall % VMT Reduction = 1-(1-A)*(1-B)*(1-C) where A, B, C equals reductions for individual strategies.

The Project VMT with mitigation is summarized in Table 4. The 6.1 percent reduction in VMT is applied to the Project's HBW VMT per employee and results in 20.4 HBW VMT per employee, which is above the city threshold of 15.7 HBW VMT per employee. Therefore, with implementation of the mitigation measures, the Project's significant impact cannot be fully mitigated and would result in a significant and unavoidable transportation impact.

Reference: **Sand Canyon Resort VMT Analysis**

Table 4 Project VMT with Mitigation

Description	HBW VMT Per Employee
Project TAZ Home-Based Work VMT per Employee (2020)	21.7 VMT per employee
Mitigation Reduction	6.1%
Project with Mitigation	20.4 VMT per employee
City Threshold of Significance	15.7 VMT per employee
Is Project above or below Threshold	Above Threshold of Significance
Significant Transportation Impact	Yes

Implementation of some or all the above mitigation measures would reduce the Proposed Project's VMT impact. Therefore, with implementation of all feasible mitigation measures the Project's significant impact cannot be fully mitigated and results in significant and unavoidable impact.

Conclusion

Using guidance outlined in the City's transportation analysis guidelines, a VMT analysis prepared for the proposed Project indicates that the average employee VMT would result in a significant impact. Feasible mitigation measures have been identified that reduce or eliminate the identified VMT impact to less than significant based on the City's established thresholds of significance. However, with implementation of the identified feasible mitigation measures the Project's significant impact cannot be fully mitigated and results in a significant but unavoidable impact on transportation.

Per capita VMT associated with the resort visitors and guests cannot be evaluated quantitatively using data from the SCAG model; therefore, a qualitative assessment of the resort uses was prepared based on the guidance in the City's VMT analysis guidelines. This analysis indicates that visitors and guests are reasonably expected to have a less than significant impact on VMT.

If you have any questions on the above material, please feel free to contact Daryl or Sandhya to discuss.

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Attachment: Attachment A - CAPCOA Calculations

Reference: **Sand Canyon Resort VMT Analysis**

Attachment A: CAPCOA Calculations

Mitigation Measure 2 (MM-2): Implement Subsidized or Discounted Transit Program (TRT-4)

A:

	Daily Transit Subsidy			
	$0.75	$1.49	$2.98	$5.96
Worksite Setting	% Reduction in Commute VT			
Low density suburb	**1.5%**	**3.3%**	**7.9%**	**20.0%***
Suburban center	**3.4%**	**7.3%**	**16.4%**	**20.0%***
Urban location	**6.2%**	**12.9%**	**20.0%***	**20.0%***
* Discounts greater than 20% will be capped, as they exceed levels recommended by TCRP 95 Draft Chapter 19 and other literature.				

C: 1.0 (see Appendix C for detail)

Source: CAPCOA

Mitigation Measure #3 (MM-3): TRT- 6 Encourage Telecommuting and Alternative Work Schedules

	Employee Participation				
	1%	**3%**	**5%**	**10%**	**25%**
	% Reduction in Commute VMT				
9-day/80-hour work week	0.07%	0.21%	0.35%	0.70%	1.75%
4-day/40-hour work week	0.15%	0.45%	0.75%	1.50%	3.75%
telecommuting 1.5 days	0.22%	0.66%	1.10%	2.20%	5.5%
Source: Moving Cooler Technical Appendices, Fehr & Peers Notes: The percentages from Moving Cooler incorporate a discount of 25% for rebound effects. The percentages beyond 1% employee participation are linearly extrapolated.					

Source: CAPCOA

Sand Canyon Resort Traffic Impact Analysis

Santa Clarita, California

November 8, 2019

Prepared for:

Sand Canyon Country Club

Prepared by:

Stantec Consulting Services Inc.

Sign-off Sheet

This document entitled Sand Canyon Resort Traffic Impact Analysis was prepared by Stantec Consulting Services Inc. (“Stantec”) for the account of Sand Canyon Country Club (the “Client”).

Prepared by 

(signature)

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1.0 INTRODUCTION

This report presents the finding of a traffic study conducted to determine the impacts of the proposed Sand Canyon Resort Project located in the City of Santa Clarita. This traffic study is prepared in support of the Project's environmental documentation under the California Environmental Quality Act (CEQA) and is consistent with the requirements outlined in the City of Santa Clarita traffic study guidelines. This report provides traffic analysis data for the Project's General Plan Amendment and Zone Change (GPA/ZC) application.

1.1 PROPOSED PROJECT

The proposed Project is located in the southeast portion of the City of Santa Clarita. The Project site is located north of Robinson Ranch Road (a private road), east of Sand Canyon Road, west of the Sand Canyon Country club house, and south of Oak Springs Canyon Road. The Project Site is illustrated in Figure 1-1. The Project includes 392 guest rooms consisting of a hotel and separate villas and a 27-hole golf course. The Project includes amenities like miniature golf, swimming pools, tennis, pickle ball courts, a three-mile long multi-purpose trail, upscale restaurants, spa and sauna, beauty salons, gym, kids club, ballrooms and meeting rooms. The Project's site plan is illustrated in Figure 1-2.

1.2 STUDY AREA

The study area for the local roadway network is shown in the previously referenced Figure 1-1. The study area includes intersections and freeway on/off-ramp intersections where the proposed Project would generally add 50 or more trips during either the AM or PM peak hour. The study area also includes mainline freeway segments where the Project is expected to add 150 or more trips, in either direction, during either the AM or PM peak hour.

In consultation with City staff, the following five intersections were selected based on the above-mentioned criteria:

- SR 14 SB Ramps & Soledad Canyon Road
- Sand Canyon Road & SR 14 NB Ramps
- Sand Canyon Road & Soledad Canyon Road
- Sand Canyon Road & Lost Canyon Road
- Sand Canyon Road & Robinson Ranch Road

Access to the Project site will be via four proposed new driveway intersections with Robinson Ranch Road. Regional access to the Project area will be via State Route 14 (SR-14), which is located approximately one mile north of the Project site. Access to SR-14 is via an interchange with northbound ramps connecting to Sand Canyon Road and southbound hook ramps on Soledad Canyon Road.

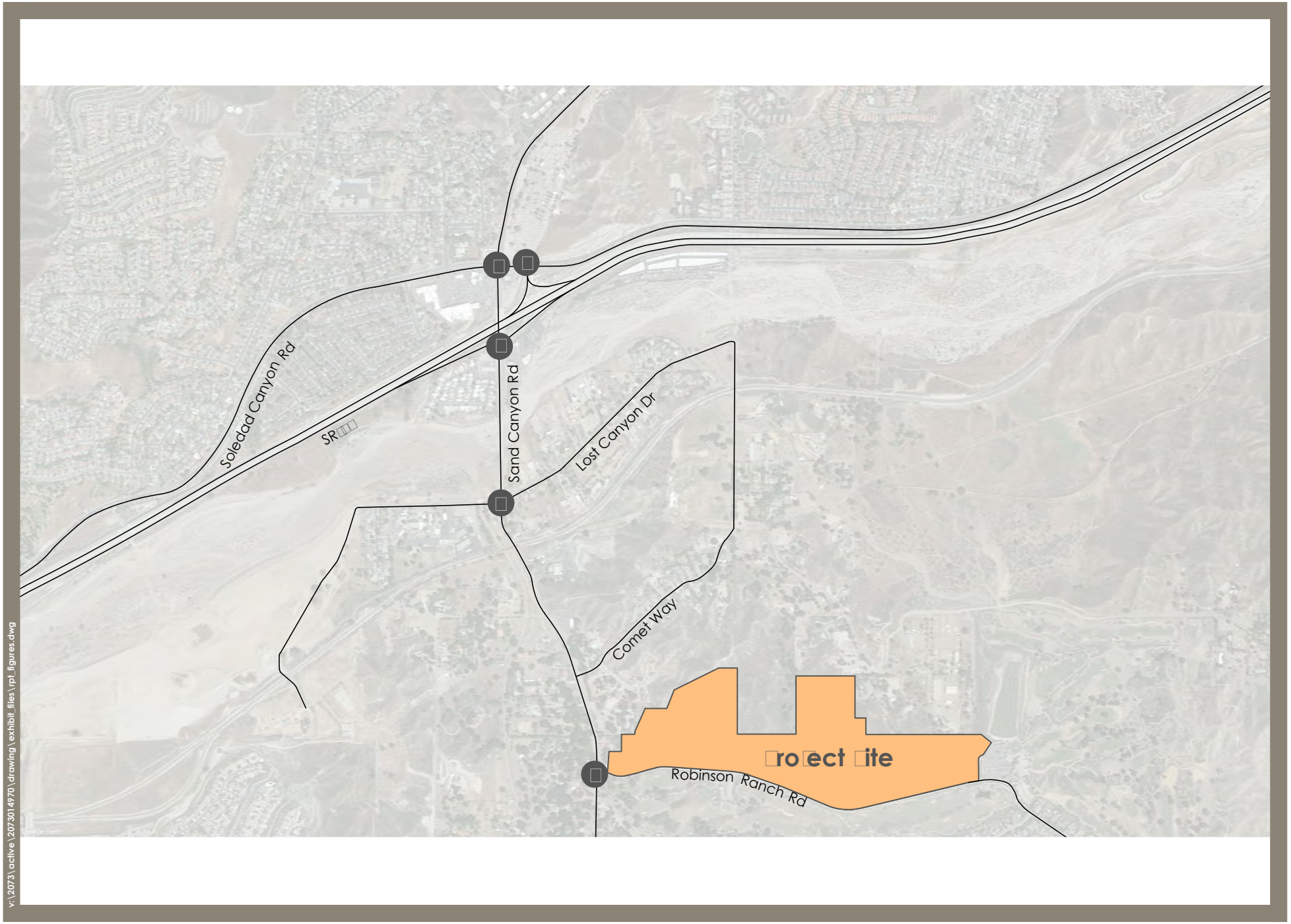

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Figure 1-1

Pro e t ite and t d rea

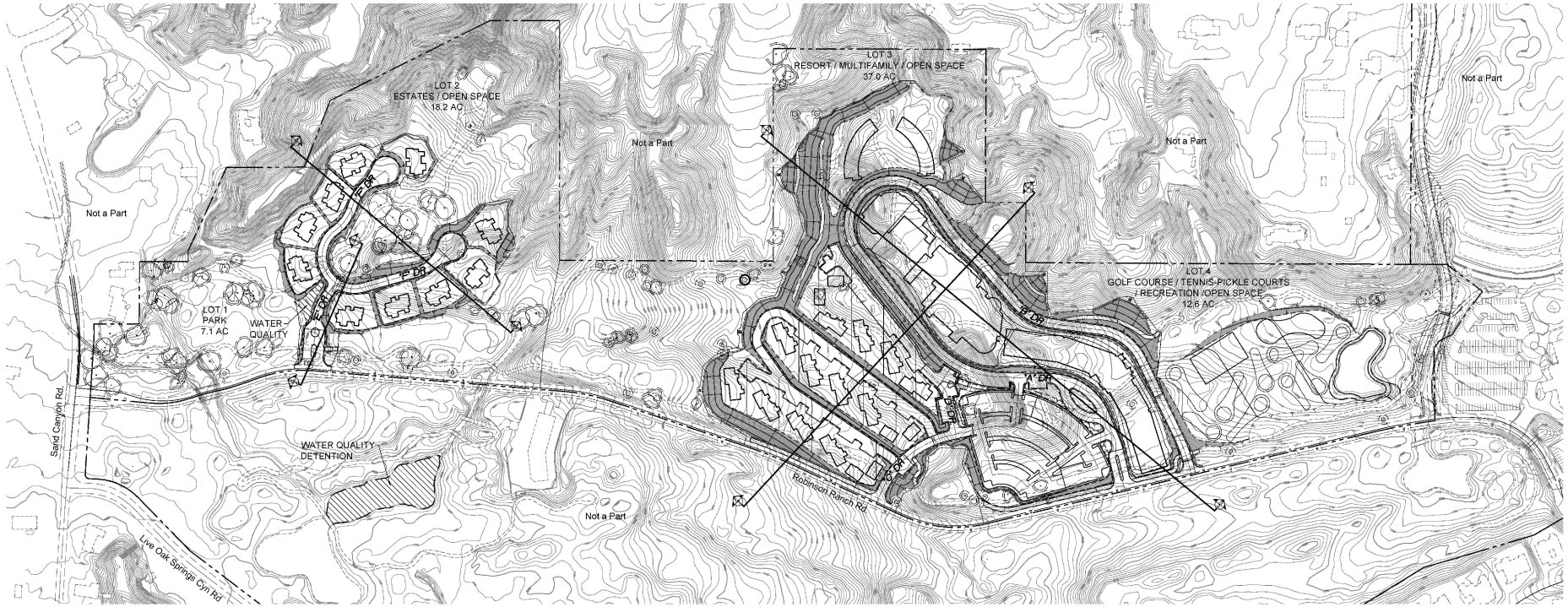

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Figure 1-2

Project Site Plan

1.3 METHODOLOGY

This traffic study evaluates the proposed Project utilizing the established traffic analysis guidelines of the City of Santa Clarita (See Reference 4 in Section 1.6). The scenarios analyzed are as follows:

1. Existing Conditions (2018)
2. Opening Year (2023) without-Project
3. Opening Year (2023) with-Project
4. Interim Year (2028) Cumulative Conditions without-Project
5. Interim Year (2028) Cumulative Conditions with-Project
6. Long Range General Plan Buildout without-Project
7. Long Range General Plan Buildout with-Project

The Existing Conditions scenario utilizes observed traffic counts collected in March 2018 for the intersections in the study area. The Project's opening year hasn't been determined yet, but the Project is expected to build out late 2021 or early 2022. To be conservative, a 2023 horizon year is utilized to evaluate Opening Day conditions. For the Opening Year (2023) scenario, an ambient growth rate of two-percent per year was applied to the existing traffic volumes to account for future growth in the surrounding area. The Interim Year (2028) Cumulative Conditions scenario considers traffic generated by all known and reasonably anticipated related projects in the proximity of the study area. Lastly, the Long Range General Plan Buildout scenario assumes land development per the General Plan.

The Santa Clarita Valley is a growing area with numerous proposed, approved and pending projects (i.e., "Related Projects"), the Interim Year cumulative conditions and Long Range General Plan Buildout scenarios are based on forecasts derived using the Santa Clarita Valley Consolidated Traffic Model (SCVCTM) as the model has the capability of forecasting the complex interaction of vehicle trips between existing and future land uses.

The SCVCTM was developed jointly by the County of Los Angeles Department of Public Works and the City of Santa Clarita and is the primary tool used for forecasting traffic volumes for the Santa Clarita Valley. The SCVCTM has the ability to provide traffic volume forecasts for a long-range setting, which represents buildout conditions (generally considered as year 2035 or later), as well as Interim Year forecasts that are based on a defined list of planned, approved, and pending projects. The SCVCTM is regularly updated and is based on the currently approved General Plans of the County and City of Santa Clarita.

1.4 PERFORMANCE CRITERIA

Defined performance criteria are utilized to determine if a proposed project would cause a significant impact. Performance criteria are typically based on two primary measures. The first is "capacity", which establishes the vehicle carrying ability of a roadway, and the second is "volume." The volume measure is either a traffic count (in the case of existing volumes) or a forecast for a future point in time. For arterial roadways in an urban or suburban setting, the intersection of two roadways will typically be the limiting factor in regard to the overall capacity of the roadway network.

Methodology outlined in the 2010 Highway Capacity Manual (HCM 2010) produces estimates of average vehicle delay as a function of intersection capacity and the volume of traffic passing through the intersection. From this a corresponding level of service (LOS) is defined. Traffic LOS is designated "A" through "F" with LOS "A" representing

free flow conditions and LOS “F” representing severe traffic congestion. Table 1-1 summarizes the ranges of vehicle delay that correspond to LOS “A” through “F” for arterial roads and intersections. The ranges are those defined in the HCM 2010 and are used by the City of Santa Clarita for estimating intersection LOS.

While average daily traffic (ADT) is a useful measure to show general levels of traffic on a facility and to provide data for other related aspects such as noise and greenhouse gas (GHG) emissions, congestion is largely a peak hour or peak period occurrence and ADT does not reflect peak period conditions very effectively. Because of this, ADT is not used here as the basis for capacity evaluation. Instead, this evaluation focuses on the parts of the day when such congestion can occur, specifically the AM and PM peak hours.

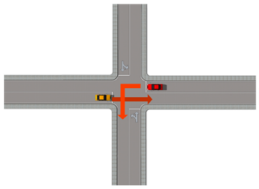
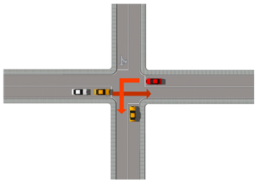
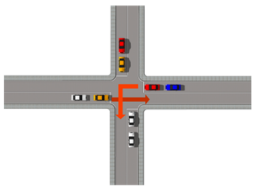
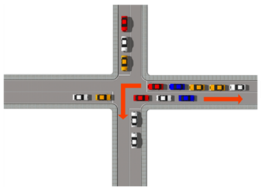
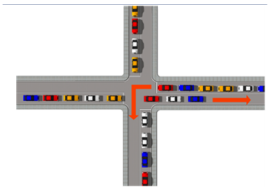
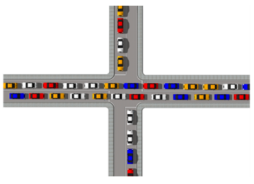
For the arterial system, the peak hour is the accepted time period used for impact evaluation and a number of techniques are available to define intersection LOS. Both the level of delay and the LOS are used in determining impact significance. Certain LOS values are deemed unacceptable by the City and increases in delay that cause or contribute to the LOS being unacceptable are defined as a significant impact. These definitions and procedures are established by individual local jurisdictions, such as the City of Santa Clarita.

Levels of service for arterial roadway intersections are determined based on operating conditions during the AM and PM peak hours and the geometric configuration of the intersection. HCM delay methodology was used to analyze both the signalized intersections and the stop-controlled intersections. Synchro software was used to calculate the intersection delay and LOS. For signalized intersections, optimized signal timing/phasing was assumed for existing and future scenarios. The result of these calculations is an estimate of average vehicle delay at the intersection. The delay calculation methodology utilized by Synchro is based on the intersection capacity analysis methodology outlined in the HCM 2010.

To assess the LOS for the roundabout, specialized software (Sidra Intersection) was used. Sidra Intersection is a micro-analytical modeling software widely accepted for roundabout analysis and is recognized by the HCM 2010 and TRB-FHWA Roundabout Guide.

The HCM 2010 calculation methodology and associated LOS performance standards used in this analysis are summarized in Table 1-2.

Table 1-1 Level of Service Descriptions – Arterial Roadways and Intersections

LOS	Traffic Flow Description	Signal Control Delay	Stop Control Delay
A	 Minimal or no vehicle delay	≤ 10	≤ 10
B	 Slight delay to vehicles	> 10 – 20	> 10 – 15
C	 Moderate vehicle delays, traffic flow remains stable	> 20 – 35	> 15 – 25
D	 More extensive delays at intersections	> 35 – 55	> 25 – 35
E	 Long queues create lengthy delays	> 55 – 80	> 35 – 50
F	 Severe delays and congestion	> 80	> 50

Sources: HCM 2010
Delay = average seconds of delay per vehicle

Table 1-2 Arterial Intersection Performance Criteria

Delay Methodology

Calculation Methodology

Level of service based on "average vehicle delay" calculated as follows:

- Synchro/HCM delay-based intersection methodology for traffic signals
- HCM 2010 delay-based intersection methodology for stop sign control
- Sidra delay-based intersection methodology for roundabouts

Performance Standard

Level of Service D defined as follows:

- stopped delay to not exceed 55 seconds for signalized intersections
- stopped delay to not exceed 35 seconds for stop sign control
- stopped delay to not exceed 50 seconds for roundabouts

Significant Impact Thresholds

An intersection is considered to be significantly impacted if the Project would:

- Worsen an intersection maintained by the City of Santa Clarita from LOS D or better to LOS E or F
- Cause the following increase in delay at an intersection maintained by the City of Santa Clarita that operated (with the Project) at LOS D or worse
  - LOS D with the Project: more than 4-second increase in delay is significant
  - LOS E or F with the Project: more than 2-second increase in delay is significant

Note: For intersections under joint jurisdiction of the City and Caltrans, the analysis utilizes the corresponding threshold of the local agency (City) as applicable.

Abbreviations:

LOS – Level of Service

1.5 DEFINITIONS

Certain terms used throughout this report are defined below to clarify their intended meaning:

ADT	Average Daily Traffic. Generally used to measure the total two-directional traffic volumes passing a given point on a roadway.
ICU	Intersection Capacity Utilization. A measure of the volume to capacity ratio for an intersection. Typically used to determine the peak hour level of service for a given set of intersection volumes.
LOS	Level of Service. A scale used to evaluate circulation system performance based on intersection ICU values or volume/capacity ratios of arterial segments.
Peak Hour	This refers to the hour during the AM peak period (typically 7 AM - 9 AM) or the PM peak period (typically 4 PM - 6 PM) in which the greatest number of vehicle trips are generated by a given land use or are traveling on a given roadway.
V/C	Volume to Capacity Ratio. This is typically used to describe the percentage of capacity utilized by existing or projected traffic on a segment of an arterial or intersection.

1.6 REFERENCES

1. “Trip Generation 10th Edition,” Institute of Transportation Engineers, 2017.
2. “Trip Generation Handbook 3rd Edition,” Institute of Transportation Engineers, August 2014.
3. “Highway Capacity Manual 2010,” Transportation Research Board, National Research Council, 2010.
4. “Preliminary Traffic Impact Report Guidelines,” City of Santa Clarita, August 1990.
5. “Guide for the Preparation of Traffic Impact Studies,” Caltrans, December 2002.
6. “Guidelines for CMP Transportation Impact Analysis,” from the 2010 Congestion Management Program for Los Angeles County, Los Angeles County Metropolitan Transportation Authority, 2010.
7. “Caltrans 2016 Traffic Volumes on California State Highways,” State of California Transportation Agency Department of Transportation, 2018.
8. “One Valley One Vision Valley-Wide Traffic Study,” Austin-Foust Associates, Inc., June 2010.
9. “Transportation Impact Study for Vista Canyon Transit-Oriented Development”, Fehr & Peers Transportation Consultants, May 2010.

2.0 TRANSPORTATION SETTING

This chapter describes the transportation setting for the traffic analysis. Existing conditions are first discussed, followed by a discussion of the derivation of future traffic volumes. planned roadway improvements adjacent to the Project site are also discussed.

2.1 EXISTING CONDITIONS

The following section describes existing traffic conditions in the study area. It includes a description of the study area roadway system, existing traffic volumes and corresponding levels of service as defined by the performance criteria outlined in the previous chapter.

2.1.1 Existing Roadway System

As previously described in Chapter 1, the proposed Project is located in the southeast portion of the City of Santa Clarita. The Project site is located north of Robinson Ranch Road, east of Sand Canyon Road, west of the Sand Canyon Country Club clubhouse, and south of Oak Springs Canyon Road. Access to the Project site will be via four new intersections with Robinson Ranch Road. A secondary access is proposed south of the property through Live Oak Springs Canyon Road, which could be used as an emergency evacuation route.

The portion of Soledad Canyon Road in the study area is designated as a Major Highway in the City of Santa Clarita General Plan as shown in Figure 2-1. It is an east-west arterial with six lanes between Sierra Highway and Galeton Road, and four lanes for the remaining portion in the study area.

Sand Canyon Road is a north-south arterial with mostly two lanes between Sierra Highway and Soledad Canyon Road, four lanes between Soledad Canyon Road and SR-14 Northbound Ramps, and back down to two lanes south of SR-14 Northbound Ramps. It is designated as a Major Highway between Soledad Canyon Road and Lost Canyon Road, a Secondary Highway between Sierra Highway and Soledad Canyon Road, and a Limited Secondary Highway south of Lost Canyon Road.

The portion of Sierra Highway within the study area is classified as a Major Highway with four lanes between Sand Canyon Road and Soledad Canyon Road.

The SR-14 Freeway is located north of the Project site. It provides access to the Antelope Valley to the northeast and connects to the I-5 Freeway to the southwest.

Existing intersection lane configurations for intersections in the study area are illustrated in Figure 2-2.

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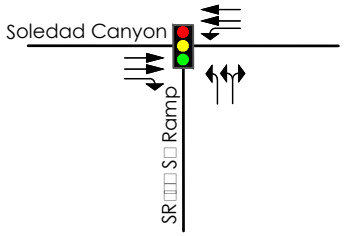
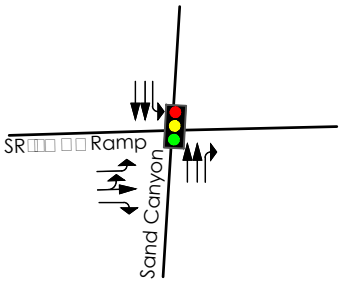
Figure 2-1
Master Plan of Highways
2.2

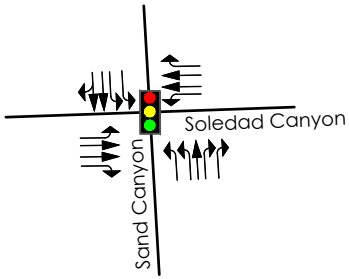
1. SR-14 SB Ramp & Soledad Canyon



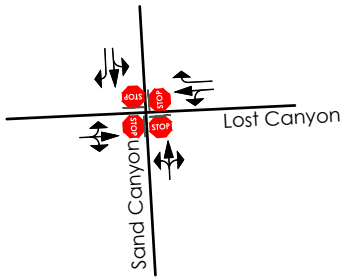
2. Sand Canyon & SR-14 NB Ramp



3. Sand Canyon Road & Soledad Canyon Road



4. Sand Canyon Road & Lost Canyon Drive



5. Sand Canyon Road & Robinson Ranch Road

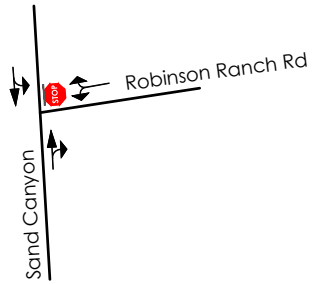


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Figure 2-2

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2.1.2 Existing Traffic Volumes and Levels of Service

Existing average daily traffic (ADT) volumes for arterials in the study area are provided in Figure 2-3. Peak hour turning movement volumes are illustrated in Figure 2-4 for the AM peak hour and Figure 2-5 for the PM peak hour. Traffic count data were collected during the critical AM and PM peak hours during late March 2018. The traffic count data sheets are provided in Appendix A.

The results of the intersection LOS analysis under existing conditions are shown in Table 2-1**.** Both the signalized intersections and stop-controlled intersections in the study area were analyzed using the HCM delay methodology. Detailed LOS calculation worksheets are provided in Appendix B. The table shows that all the study area intersections currently operate at LOS C or better, except the intersection of Sand Canyon Road and Soledad Canyon Road, which operates at LOS D in both AM peak hour and PM peak hour.

Table 2-1 Intersection LOS Summary – Existing Conditions

Intersection	Traffic Control	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
1. SR-14 SB Ramp & Soledad Canyon	Signalized	28.0	C	22.6	C
2. Sand Canyon & SR-14 NB Ramp	Signalized	13.9	B	18.0	B
3. Sand Canyon & Soledad Canyon	Signalized	41.7	D	42.7	D
4. Sand Canyon & Lost Canyon	All-Way Stop	17.8	C	14.0	B
5. Sand Canyon Road & Robinson Ranch Road	Two-way Stop	13.6	B	14.1	B
Note: LOS – Level of Service Delay – Average Vehicle Delay (seconds)					

2.1.3 Public Transportation

The City of Santa Clarita Transit (SCT) Route 6 is the closest service route to the Project site, with a stop approximately two miles from the Project site. SCT Routes 6 travels along Soledad Canyon Road and provides services between the eastside of the city and Stevenson Ranch with stops at the Santa Clarita and Newhall Metrolink stations, as well as at the McBean Regional Transit Center. Additional routes are accessible from this route and provide service to the greater Santa Clarita Valley area.

SCT Commuter Express offers express commuter bus travel to Los Angeles, Warner Center, Van Nuys, Century City and the Antelope Valley. Three Metrolink stations exist within the City of Santa Clarita, which serve the Antelope Valley line. This line travels between Lancaster and Union Station, Los Angeles.

2.1.4 Active Transportation

The City of Santa Clarita approved the Non-Motorized Transportation Plan Update in September 2014, and provides a comprehensive overview of bicycling and walking in the city, as well as direction for future investments in bicycle and pedestrian infrastructure.

There are currently no bike lanes serving the Project site. There is a proposed Class III Bike Path along Sand Canyon Road. The County of Los Angeles and the City of Santa Clarita each have Bicycle Master Plans (BMPs) with additional facilities planned in the Project area. Figure 2-6 illustrates the existing and planned future bicycle facilities in the area.

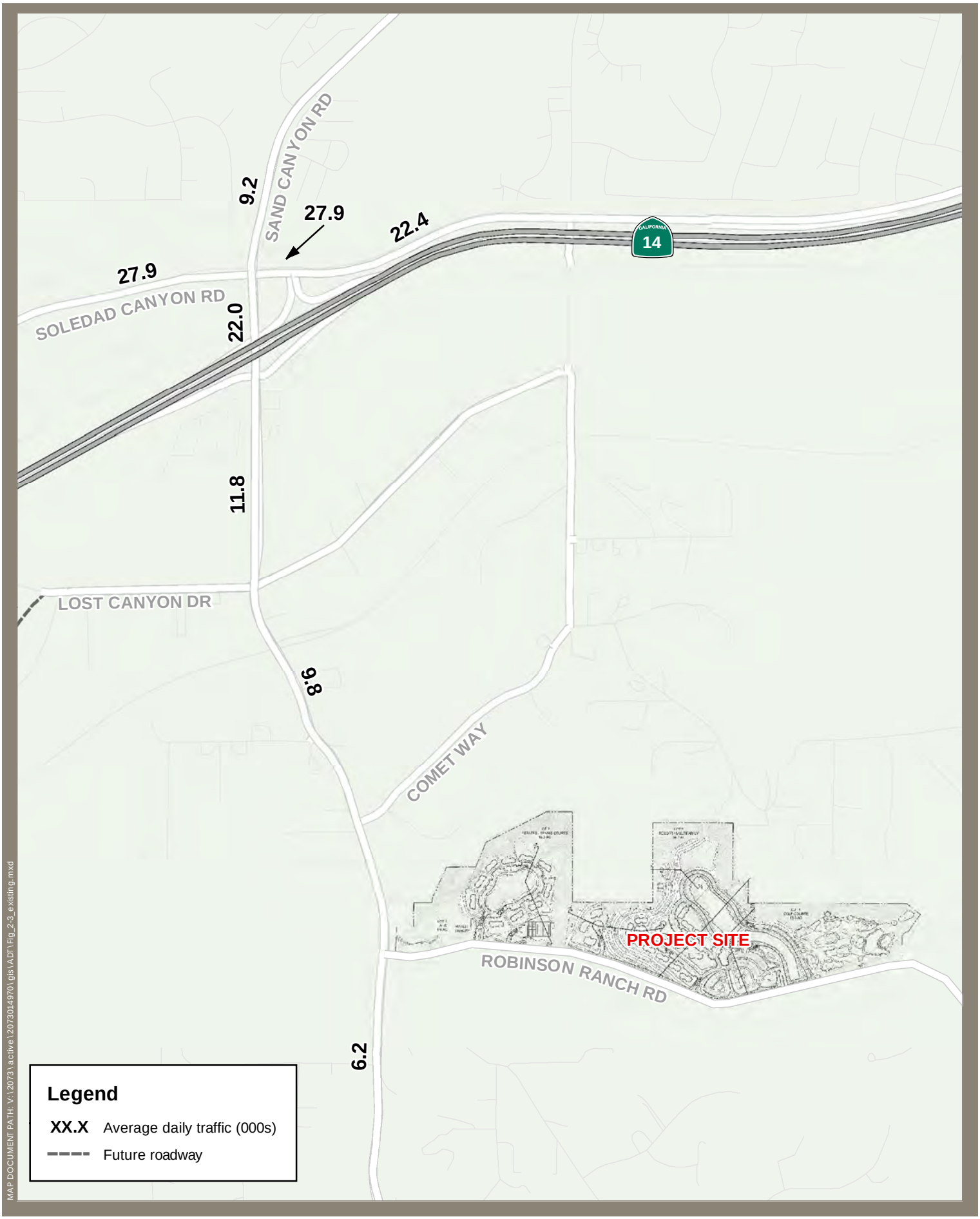

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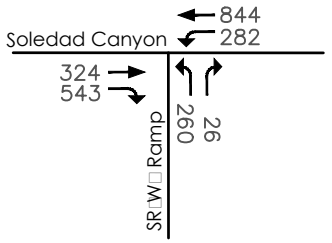
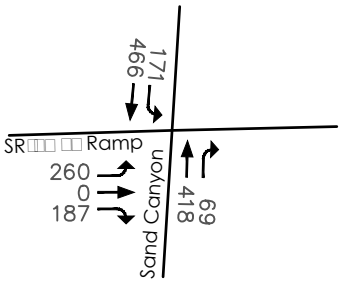
Figure 2-3
Existing ADT Volumes (000s)

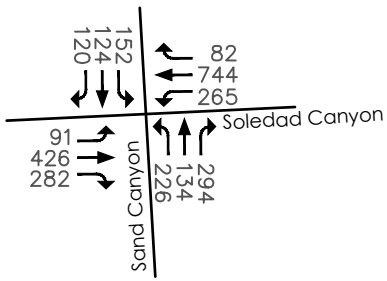
1. SR-14 SB Ramp & Soledad Canyon



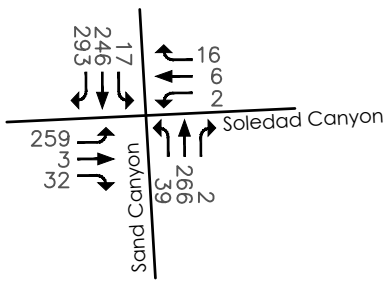
2. Sand Canyon & SR-14 NB Ramp



3. Sand Canyon Road & Soledad Canyon Road



4. Sand Canyon Road & Lost Canyon Drive



5. Sand Canyon Road & Robinson Road

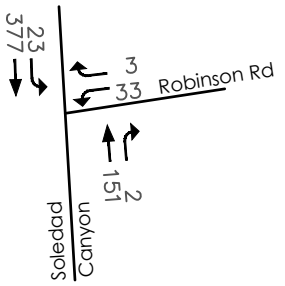


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Figure 2-4

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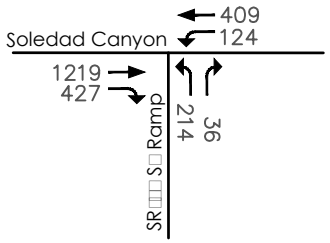
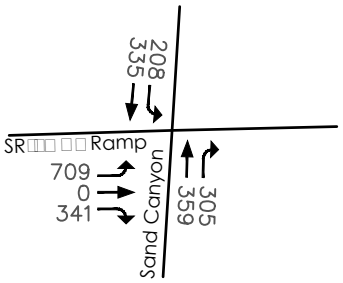
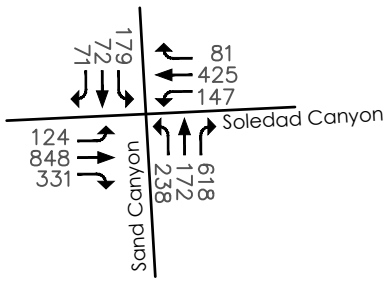
1. SR-14 SB Ramp & Soledad Canyon



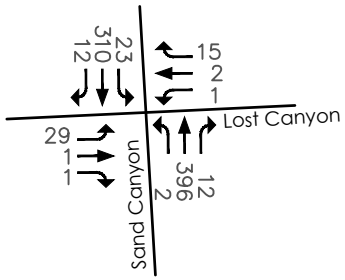
2. Sand Canyon & SR-14 NB Ramp



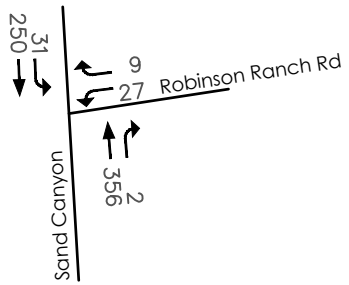
3. Sand Canyon Road & Soledad Canyon Road



4. Sand Canyon Road & Lost Canyon Drive



5. Sand Canyon Road & Robinson Ranch Road



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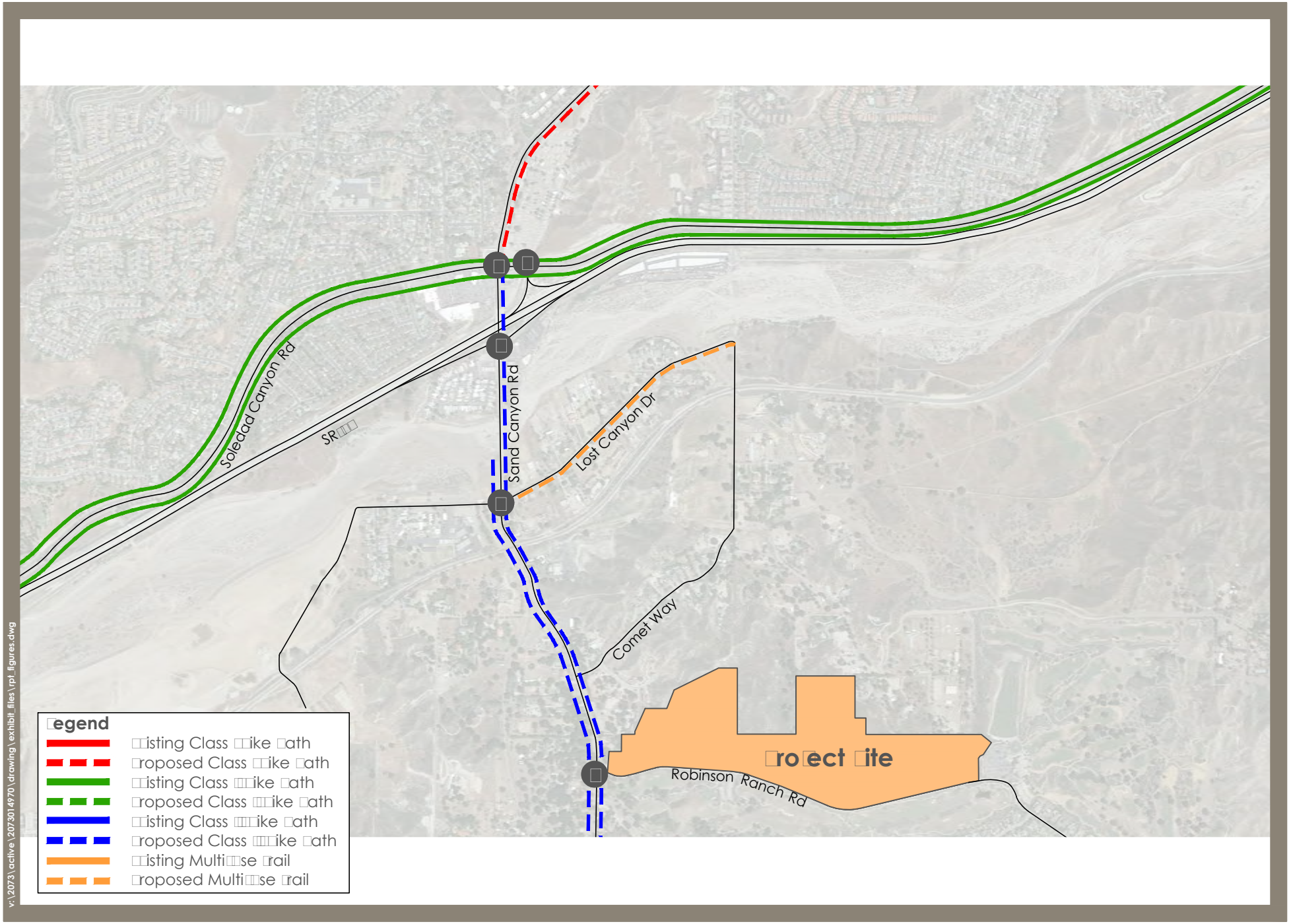

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Figure 2-

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2.2 FUTURE CONDITIONS

The following describes the future forecast volumes.

2.2.1 Future Land Use Development

To derive future forecast volumes, the SCVCTM was used. As previously discussed in Section 1.3.1, the SCVCTM includes a land use database prepared by Los Angeles County and the City of Santa Clarita that is based on the approved General Plans of each jurisdiction. This database is regularly updated as specific projects are proposed and thus is a comprehensive list of cumulative projects, including the OVOV Area Plan. Trips to and from the Santa Clarita Valley, as well as "through-trips", are included in the forecasts; thus, regional growth, which is traffic volume increase occurring outside of the SCVCTM area, is incorporated in the model.

2.2.2 Future Traffic Volumes

The Project's opening year hasn't been determined yet, but the Project is expected to build out late 2021 or early 2022. To be conservative, a 2023 horizon year is utilized to evaluate Opening Day conditions.

A 2028 horizon year is utilized to evaluate Interim Year Cumulative Conditions, which captures projects in the nearby area that are anticipated to be built in the next ten years. For this analysis, an interim version of the model. A list of the projects included in the Interim Year is provided in Table 2-2 and the corresponding map is provided in Figure 2-7. Project trips associated with the proposed Project was estimated using the SCVCTM and added onto 2028 baseline conditions to derive 2028 With-Project conditions.

Table 2-2 Defined Related Projects Included in the Cumulative Database

No.	Project	Description	Status[1]
1	Vista Canyon	834 MF Residential, 78 TSF Business Park, 40 TSF Retail	Pending
2	Sand Canyon Plaza	580 Residential Units (119 SF Units, 461 MF Units, 140 Bed Assisted Living); 60,000 sq. ft. Commercial Retail	Pending
3	Mancara	109 SF Residential Units	Pending

Note:
MF = Multi-Family
TSF = Thousand Square Feet
SF = Single Family
sq. ft. = Square Feet
See Figure 2-7 for locations.
[1] Number of residential units estimated based on General Plan allowable land use density.

Lastly, a 2040 horizon year is utilized to evaluate Long Range General Plan Buildout conditions. For this analysis, the Buildout version of the model was used. Project trips associated with the proposed Project was then added to 2040 General Plan conditions to derive With-Project conditions.

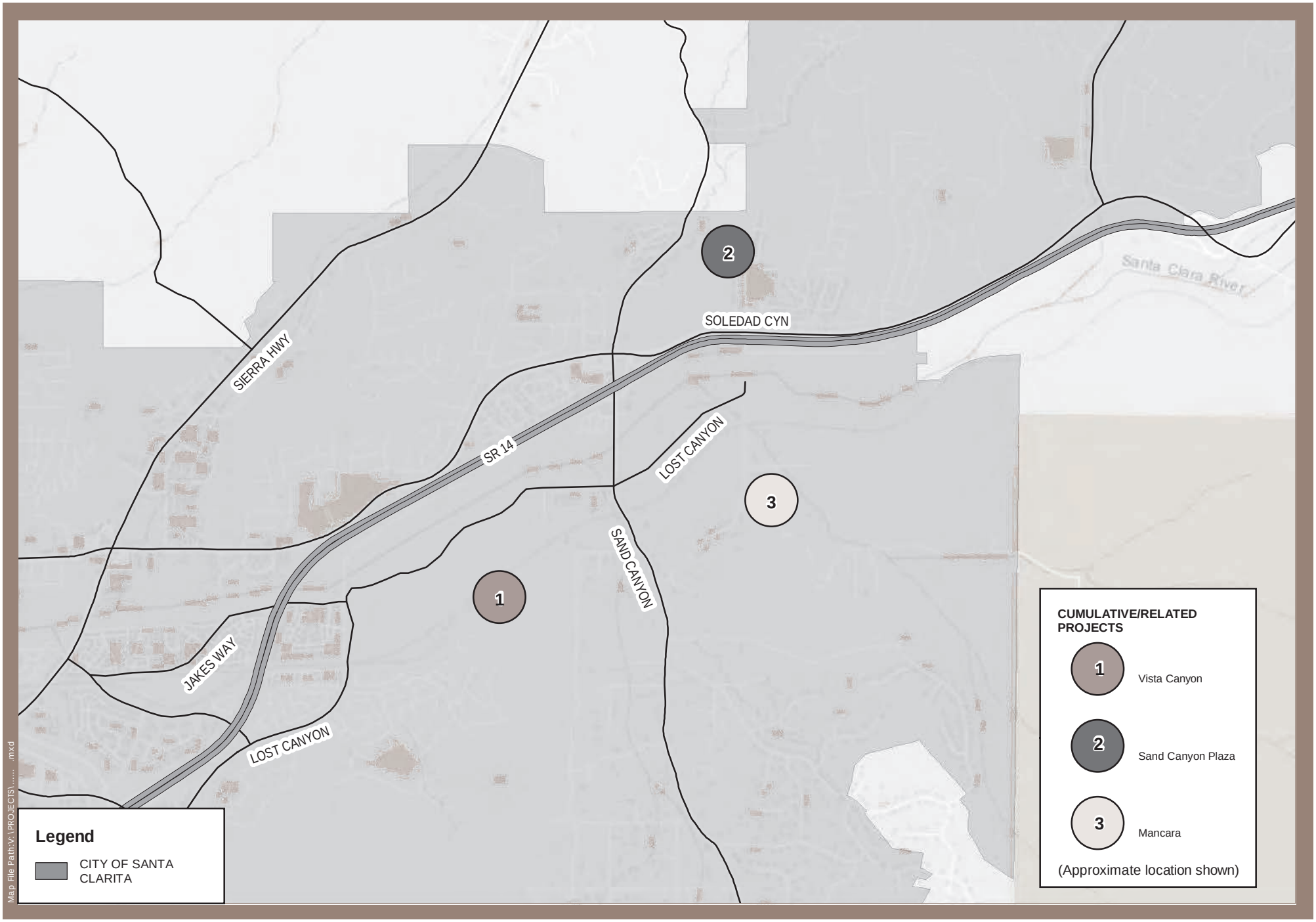

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Figure 2-7

Related Projects Map

2.10

3.0 PROJECT DESCRIPTION

This section describes the Project in terms of its transportation characteristics. Trip generation is summarized and the distribution of the Project's trips on the adjoining roadway network is presented.

3.1 PROJECT TRIP GENERATION

The proposed resort Project includes 392 guest rooms consisting of a hotel and separate villas, a banquet facility that includes ballrooms and meeting rooms for weddings, events and conferences for day use, and will be integrated with the existing a 27-hole golf course. The Project includes amenities like miniature golf, swimming pools, tennis, pickle ball courts, a three-mile long multi-purpose trail, upscale restaurants, spa and sauna, beauty salons, gym and kids club. Table 3-1 below summarizes the anticipated trip generation of the proposed Project.

Table 3-1 Trip Generation Summary

			AM Peak Hour			PM Peak Hour			
Trip Rates	**Amount**	**Units**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**ADT**
Resort Hotel (330)	-	Room	0.23	0.09	0.32	0.18	0.23	0.41	-
Resort Case Study		Room	--	--	--	--	--	--	2.35
Proposed Project									
Hotel	392	Room	90	35	125	71	90	161	921
Peak Hour Trip Rate Source: Institute of Transportation Engineers (ITE), 10th Edition, 2017, with ITE code in parentheses Average Daily Traffic (ADT) Trip Rate Source: Resort Case Study (see Appendix C)									

The peak hour trip generation is based on the trip generation rates from Institute of Transportation Engineers (ITE) Trip Generation Manual (see Reference 1 in Section 1.6) for a resort hotel type of use. Since ITE does not have a daily trip rate for a resort hotel, the ADT trip rate used for this study was derived from a case study of similar types of resorts in California (see Appendix C for the detailed memo). The trip generation estimates show that the proposed Project is expected to generate approximately 921 ADT. Typically, approximately 8 to 10 percent of daily traffic occurs during the peak hours (74 to 92 trips), however for a conservative analysis the slightly higher ITE peak hour trip rates with 125 trips occurring during the AM peak hour and 161 trips occurring during the PM peak hour is used here for the purpose of impact analysis.

3.2 PROJECT TRIP DISTRIBUTION

The geographic distribution of Project-generated trips was derived using the SCVCTM. The SCVCTM is a computerized travel demand model that utilizes a sophisticated trip distribution function to derive the distribution of vehicle trips, and which has previously been calibrated to the existing conditions of the Santa Clarita Valley. The SCVCTM is jointly maintained by City of Santa Clarita and County of Los Angeles staff, and is utilized for all major transportation planning efforts within the Santa Clarita Valley. Production and attraction trip data is generated by the model based on five separate trip purposes, and trip distribution patterns are then derived by the model. As a final step, the model assigns these trips to the roadway network based on the derived distribution patterns.

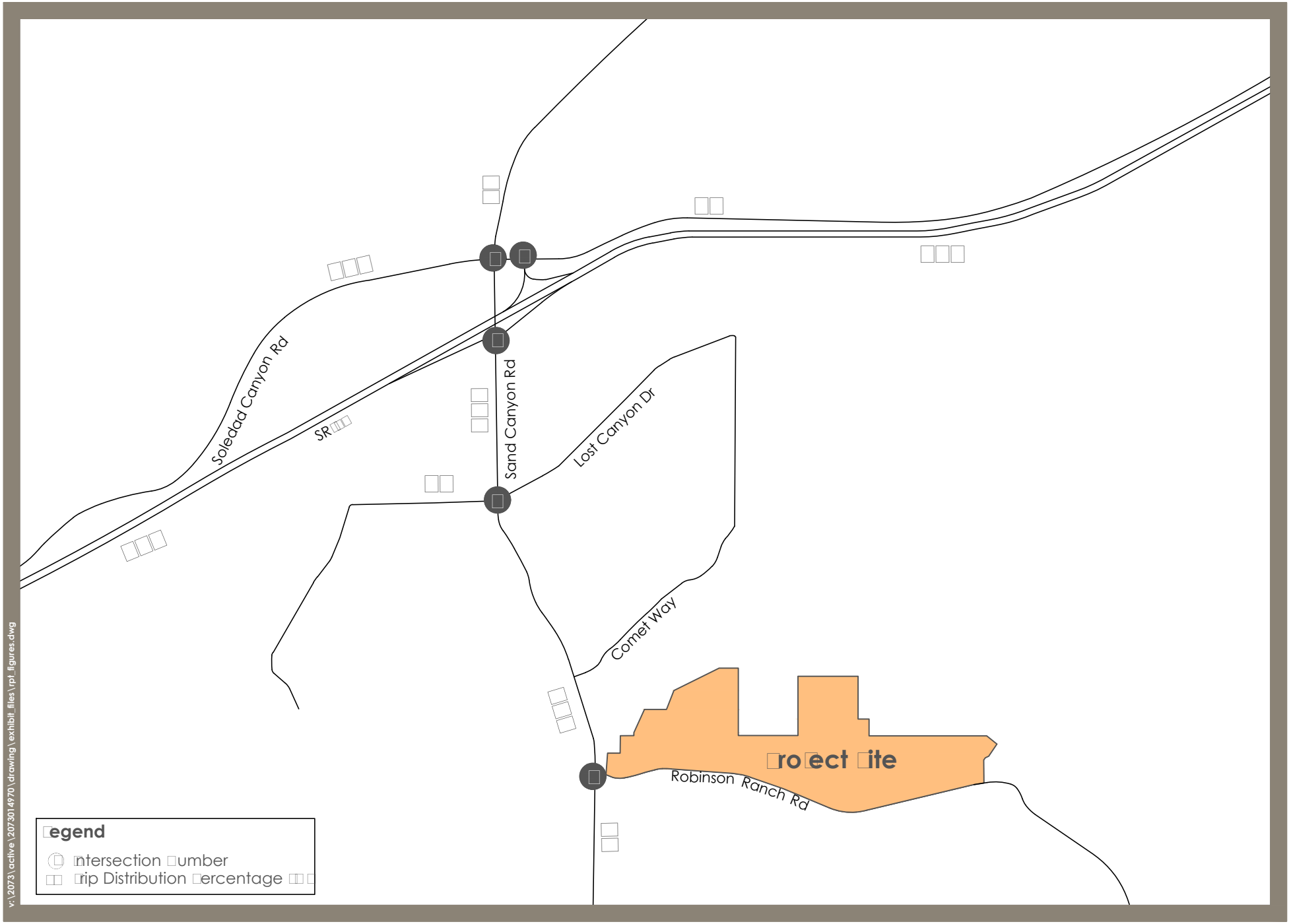

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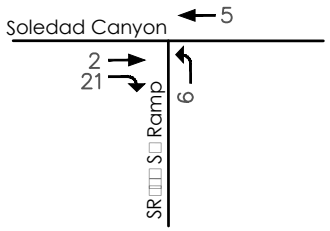
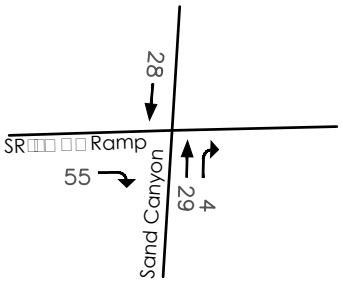
Figure 3-1

Pro e t rip istri tion

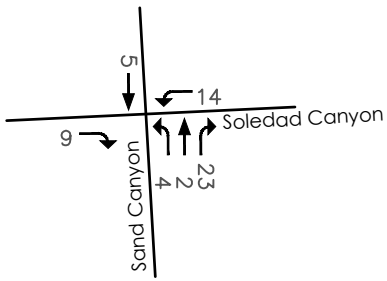
1. SR-14 SB Ramp & Soledad Canyon



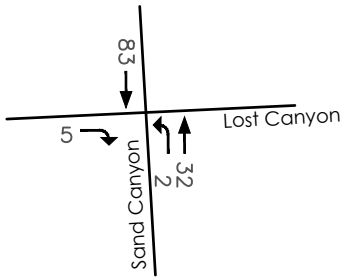
2. Sand Canyon & SR-14 NB Ramp



3. Sand Canyon Road & Soledad Canyon Road



4. Sand Canyon Road & Lost Canyon Drive



5. Sand Canyon Road & Robinson Ranch Road

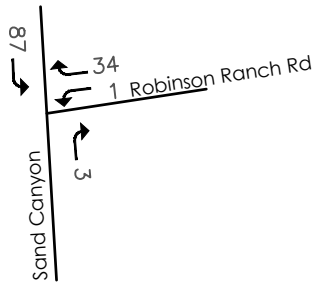


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Figure 3-2

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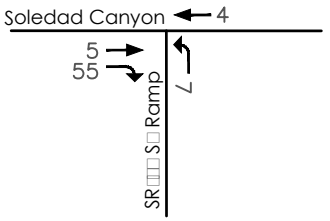
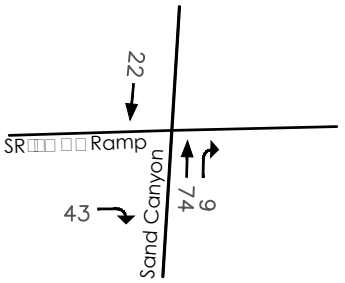
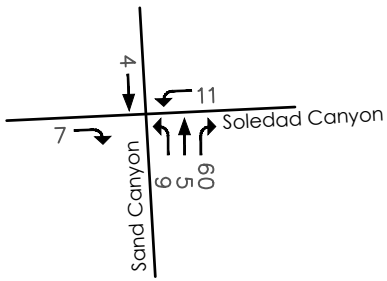
1. SR-14 SB Ramp & Soledad Canyon



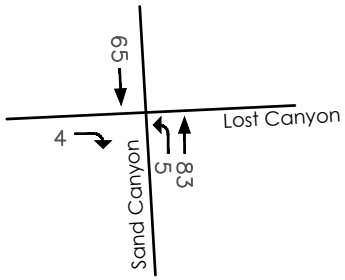
2. Sand Canyon & SR-14 NB Ramp



3. Sand Canyon Road & Soledad Canyon Road



4. Sand Canyon Road & Lost Canyon Drive



5. Sand Canyon Road & Robinson Road

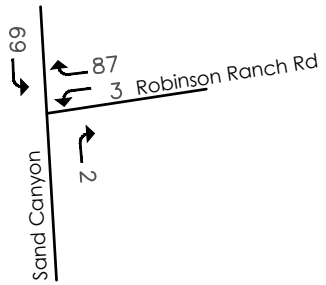


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Figure 3-3

Pro e t n rips PM Peak o r

The Project's trip distribution percentages are illustrated in Figure 3-1 as determined by a SCVCTM select zone run. As shown, approximately 97 percent of the Project trips are oriented towards the north on Sand Canyon Road, of which approximately 61 percent continue south on SR-14, and 10 percent continue north on SR-14. Approximately three percent of the Project trips are oriented towards the south of the Project on Sand Canyon Road. Project trips during the AM and the PM peak hours are shown in Figure 3-2 and Figure 3-3, respectively.

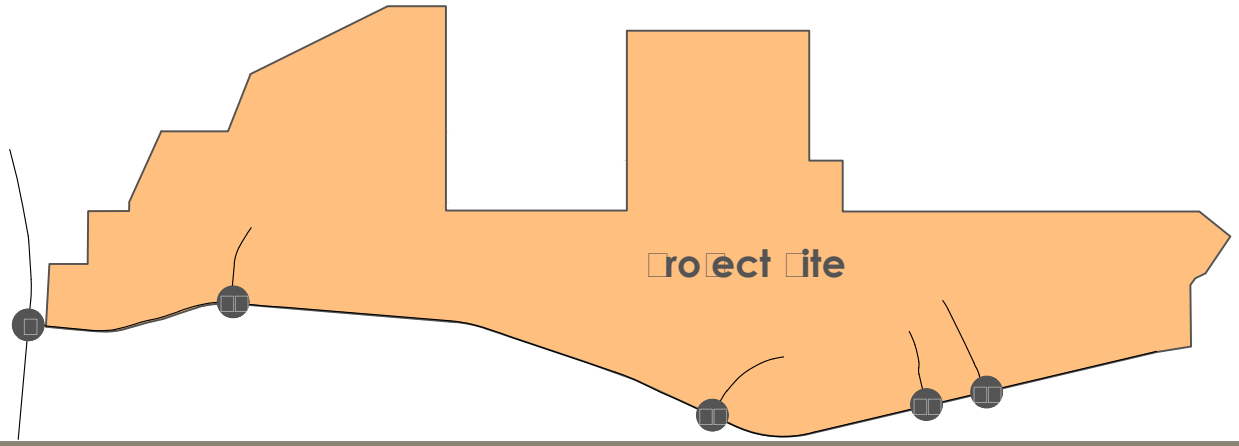
3.3 ON-SITE ROADWAY SYSTEM

Access to the Project site will be via four proposed new intersections with Robinson Ranch Road, of which the "E" Drive intersection will be gated as shown in the Project site plan in Figure 1-2. A secondary access is proposed south of the property through Live Oak Springs Canyon Road, which could be used as an emergency evacuation route.

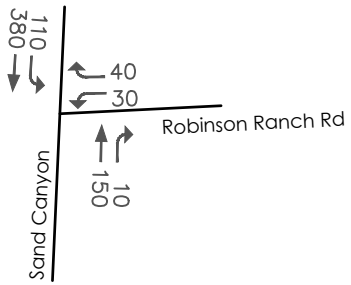
Peak hour turning movement volumes for Project buildout conditions for the intersections used to access the Project site are illustrated in Figure 3-4 and Figure 3-5 for the AM and PM peak hours, respectively. HCM analysis was used to calculate intersection delay and LOS based on these peak hour volumes and is summarized in Table 3-2. As shown, each of the on-site Project intersections is anticipated to operate at LOS C or better. HCM delay calculation worksheets for the intersections are provided in Appendix B.

Table 3-2 Intersection LOS Summary – Project Site and Local Streets

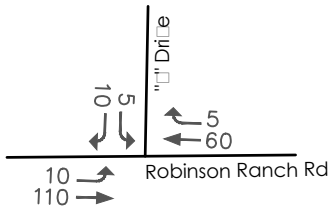
Int #	Intersection Name	AM Peak Hour		PM Peak Hour	
		Delay	LOS	Delay	LOS
5	Sand Canyon Road & Robinson Ranch Road	13.8	B	15.0	C
10	"E" Drive & Robinson Ranch Road	9.0	A	9.4	A
11	"C" Drive & Robinson Ranch Road	9.3	A	9.5	A
12	"A" Drive & Robinson Ranch Road	9.2	A	9.5	A
13	"B" Drive & Robinson Ranch Road	9.1	A	9.4	A



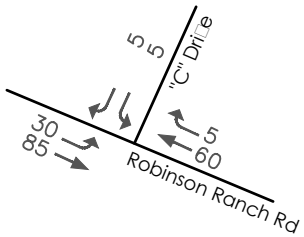
5. Sand Canyon Road & Robinson Ranch Road



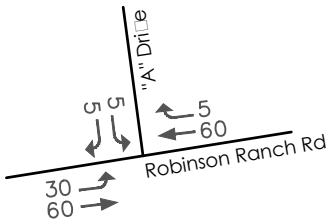
10. "E" Drive & Robinson Ranch Rd



11. "C" Drive & Robinson Ranch Road



12. "A" Drive & Robinson Ranch Road



13. "B" Drive & Robinson Ranch Road

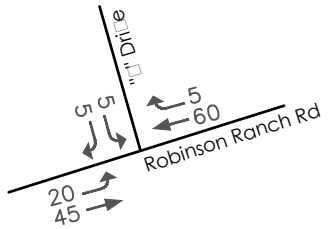


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Figure 3-4

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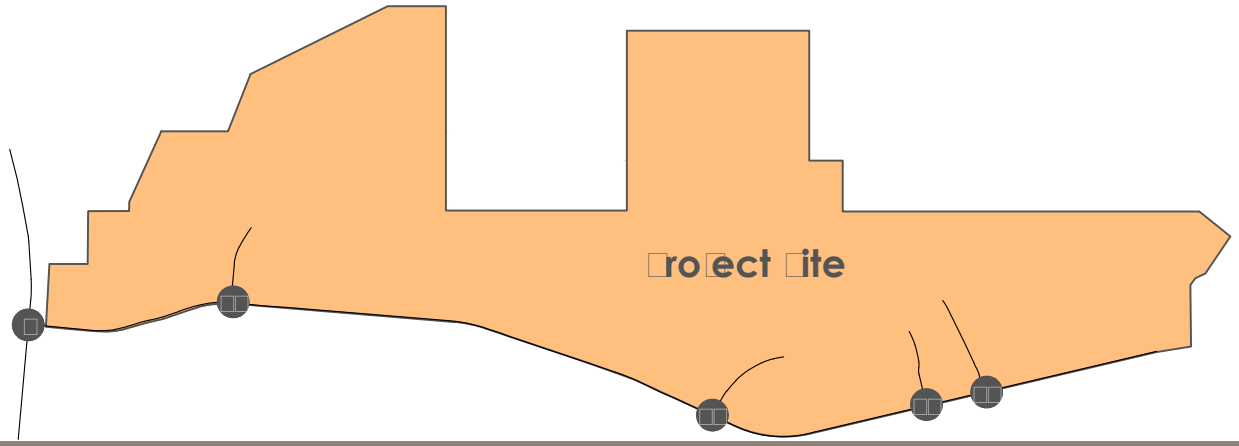
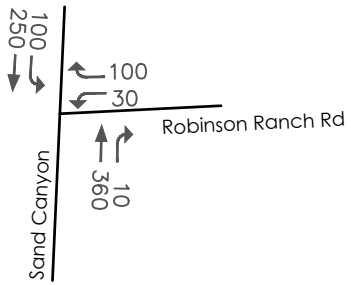
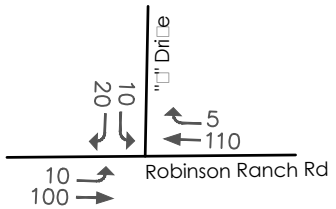


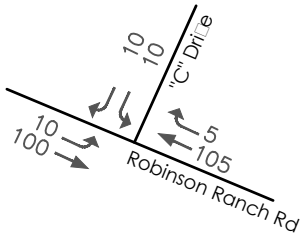
5. Sand Canyon Road & Robinson Ranch Road



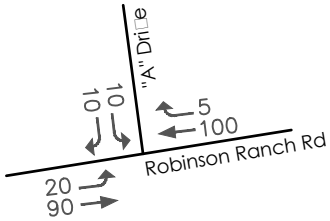
10. "E" Drive & Robinson Ranch Rd



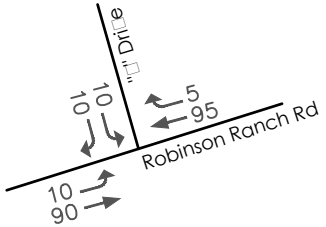
11. "C" Drive & Robinson Ranch Road



12. "A" Drive & Robinson Ranch Road



13. "B" Drive & Robinson Ranch Road



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4.0 TRAFFIC IMPACT ANALYSIS

This chapter presents the traffic impacts of the proposed Project for conditions under both without and with-Project scenarios. The Project's opening year hasn't been determined yet, but the Project is expected to build out late 2021 or early 2022. Therefore, to be conservative, a 2023 horizon year is utilized to evaluate Opening Day impacts. There are other projects in the nearby area with buildouts from 1 to 10 years. Therefore, a 2028 horizon year is utilized to evaluate Interim Year cumulative impacts. Additionally, a 2040 horizon year is utilized to evaluate Long Range General Plan buildout conditions. Traffic impacts of the proposed Project are addressed using the criteria outlined in Chapter 1.0.

4.1 OPENING DAY (2023) ANALYSIS

This section provides an analysis of Project traffic impacts by comparing Project Opening Day (2023) without-Project traffic conditions to Project Opening Day (2023) with-Project traffic conditions. To estimate the 2023 without-Project traffic conditions, an ambient growth rate of two percent per year is applied to the existing (2018) counts to account for the background traffic growth. For 2023 with-Project traffic conditions, Project-related trips (shown in Figure 3-2 and Figure 3-3) are added to the 2023 no-Project conditions in order to identify potential traffic impacts. This scenario assumes full buildout of the entire Project.

Opening Day (2023) conditions ADT volumes for the no-Project condition are illustrated in Figure 4-1. The corresponding no-Project peak hour turning movement volumes are illustrated in Figure 4-2 and Figure 4-3, respectively.

Opening Day (2023) conditions ADT volumes for the with-Project condition are illustrated in Figure 4-4. The corresponding with-Project peak hour turning movement volumes are illustrated in Figure 4-5 and Figure 4-6, respectively.

Peak hour intersection levels of service calculated using the Opening Day conditions traffic volumes referenced above are summarized in Table 4-1, which provides a comparison between no-Project and the with-Project conditions. The table indicates that under the Project Opening Day (2023) conditions, the study area intersections would operate at LOS D or better during both the AM and the PM peak hour, and there would be no project impacts at these locations.

For this analysis, existing lanes were assumed for both no project and with-Project conditions for all intersections except for the intersection of Sand Canyon Road and Lost Canyon Road which includes improvements (a roundabout) to be constructed by a nearby project before 2023.

HCM delay methodology was used to analyze both the signalized intersections and the stop-controlled intersections. To assess the level of service for the roundabout intersection, specialized software (Sidra Intersection) is used. Sidra Intersection is a micro-analytical modeling software widely accepted for roundabout analysis and is recognized by the HCM 2010 and the TRB-FHWA Roundabout Guide. Detailed LOS calculation worksheets are provided in Appendix B.

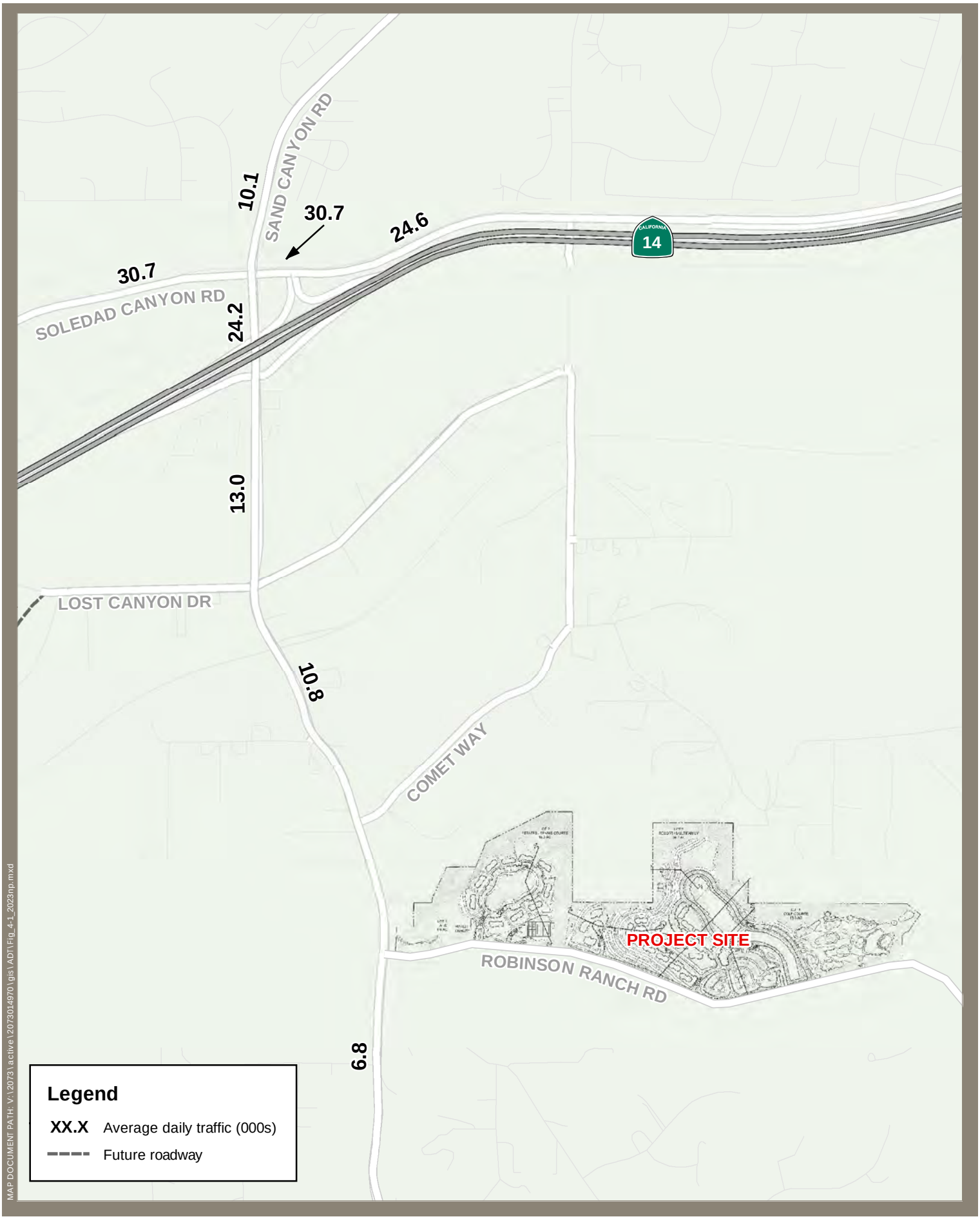

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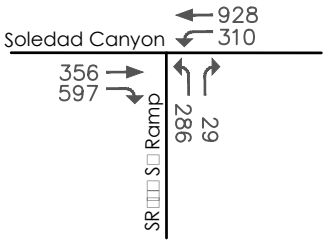
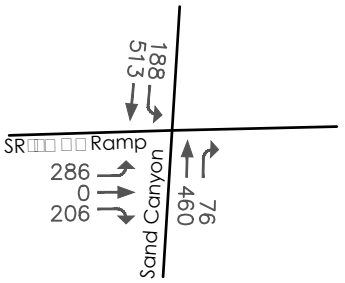
Figure 4-1

Opening Day (2023) Without Project - ADT Volumes (000s)

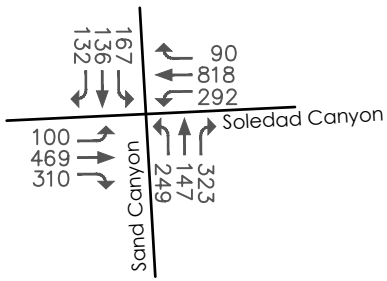
1. SR-14 SB Ramp & Soledad Canyon



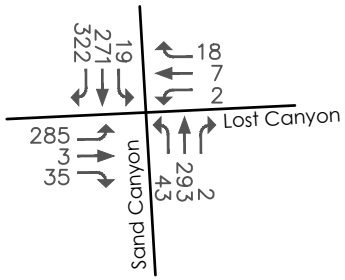
2. Sand Canyon & SR-14 NB Ramp



3. Sand Canyon Road & Soledad Canyon Road



4. Sand Canyon Road & Lost Canyon Drive



5. Sand Canyon Road & Robinson Ranch Road

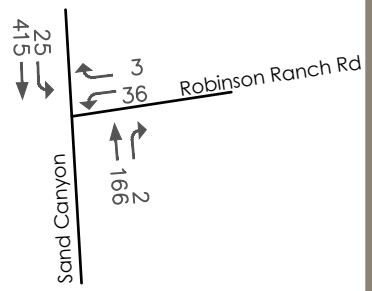


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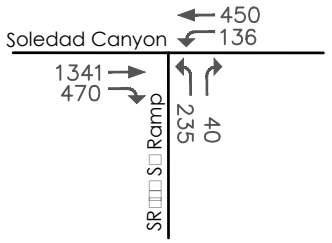
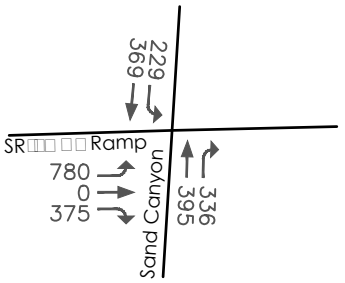
Figure 4-2

Opening Day Intersection Project AM Peak Hour Volumes

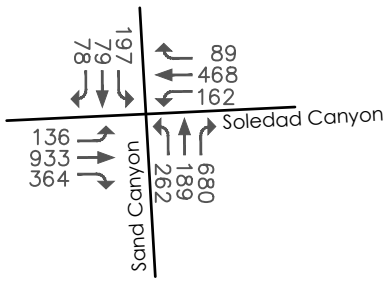
1. SR-14 SB Ramp & Soledad Canyon



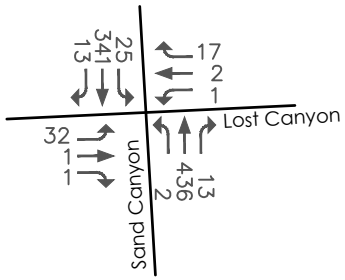
2. Sand Canyon & SR-14 NB Ramp



3. Sand Canyon Road & Soledad Canyon Road



4. Sand Canyon Road & Lost Canyon Drive



5. Sand Canyon Road & Robinson Ranch Road

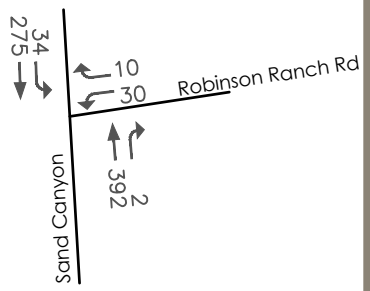


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Figure 4-3

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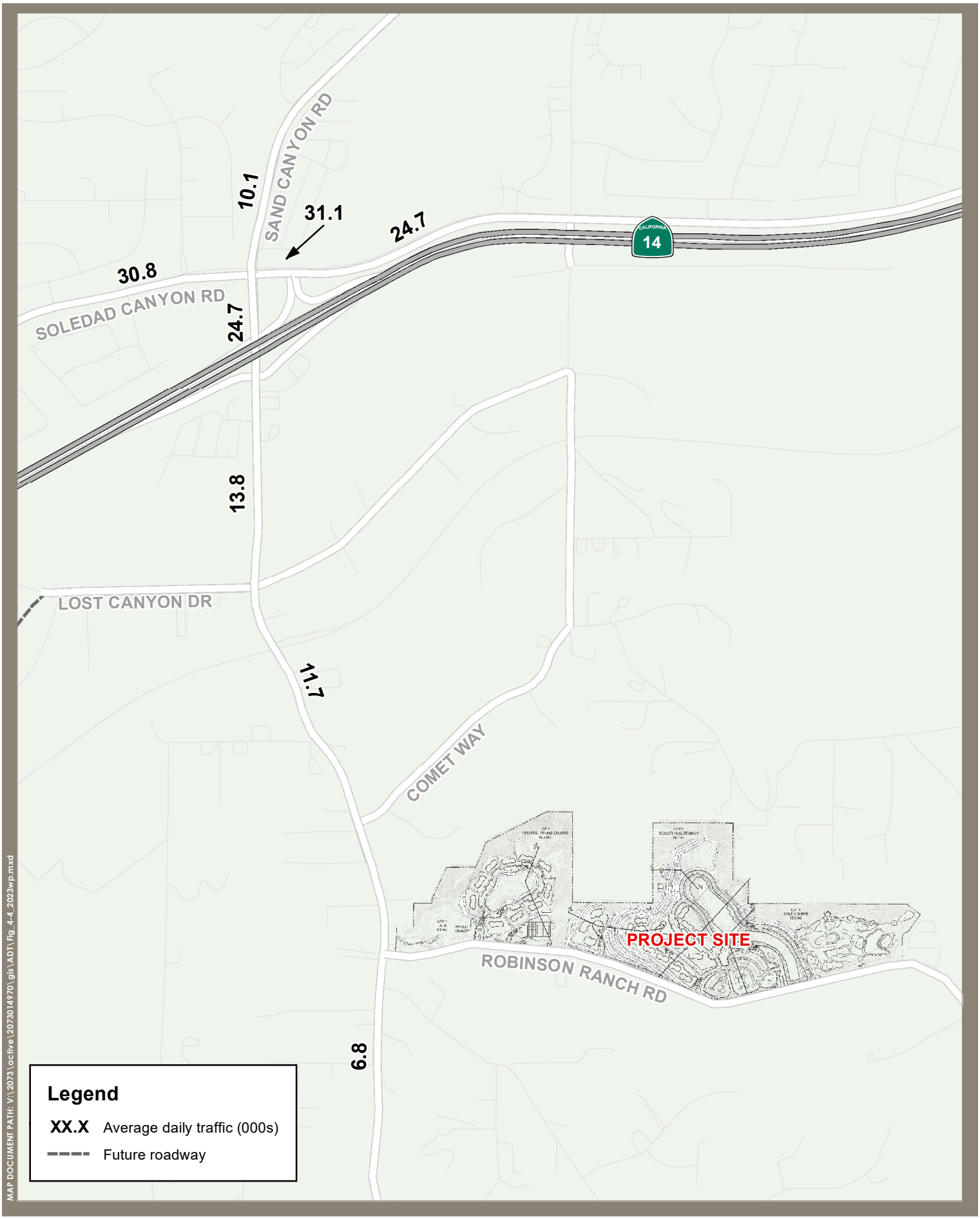

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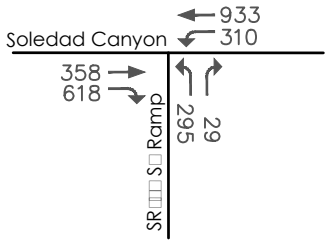
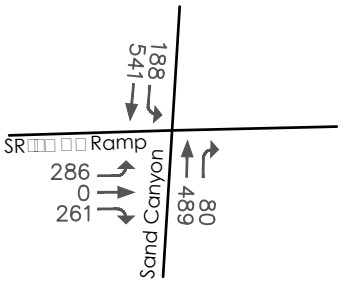
Figure 4-4

Opening Day (2023) With Project - ADT Volumes (000s)

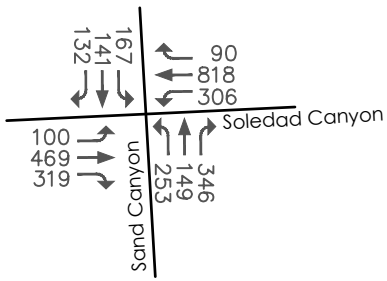
1. SR-14 SB Ramp & Soledad Canyon



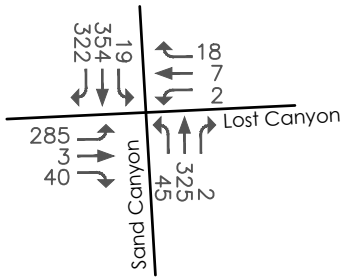
2. Sand Canyon & SR-14 NB Ramp



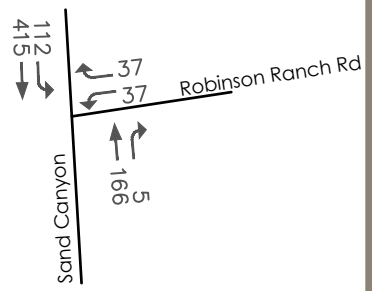
3. Sand Canyon Road & Soledad Canyon Road



4. Sand Canyon Road & Lost Canyon Drive



5. Sand Canyon Road & Robinson Ranch Road



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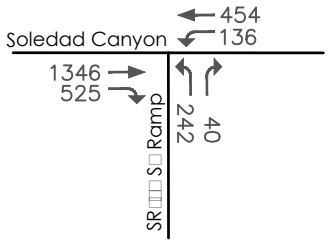
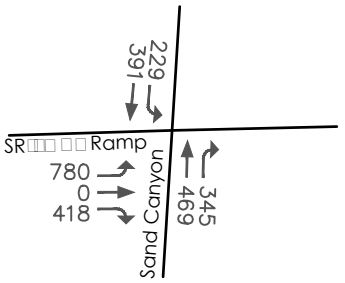
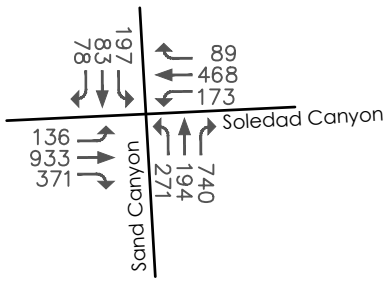
1. SR-14 SB Ramp & Soledad Canyon



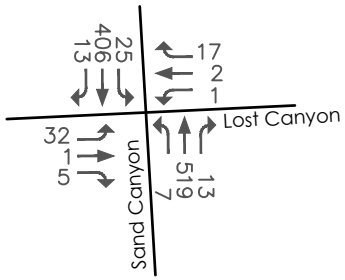
2. Sand Canyon & SR-14 NB Ramp



3. Sand Canyon Road & Soledad Canyon Road



4. Sand Canyon Road & Lost Canyon Drive



5. Sand Canyon Road & Robinson Ranch Road

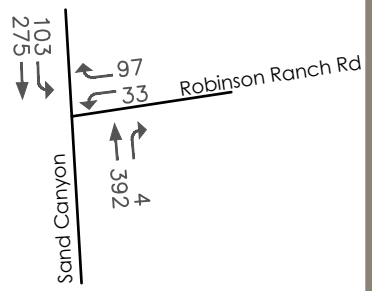


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Table 4-1 Intersection LOS Summary – Opening Day (2023) Conditions

Intersection Name	Traffic Control	Without-Project				With-Project				Increase	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
1. SR-14 SB Ramp & Soledad Canyon	Signal	31.3	C	24.2	C	32.0	C	24.6	C	0.7	0.4
2. Sand Canyon & SR-14 NB Ramp	Signal	14.5	B	19.5	B	14.8	B	21.0	C	0.3	1.5
3. Sand Canyon & Soledad Canyon	Signal	42.5	D	46.5	D	42.8	D	50.0	D	0.3	3.5
4. Sand Canyon & Lost Canyon	Roundabout	5.7	A	3.0	A	5.9	A	3.0	A	0.2	0.0
5. Sand Canyon Road & Robinson Ranch Road	Two-Way Stop	14.6	B	15.2	C	15.5	C	15.7	C	0.9	0.5
Note: LOS – Level of Service Delay – Average Vehicle Delay (seconds)											

4.2 INTERIM YEAR (2028) CUMULATIVE CONDITIONS ANALYSIS

As previously discussed in Section 2.2.1, Interim Year cumulative conditions traffic volumes presented in this analysis are derived using the SCVCTM. A horizon year of 2028 is utilized to encompass the broad range of Related Projects within the study area. The Project's traffic impacts on study intersections for Interim Year (2028) without-Project traffic conditions and with-Project traffic conditions are compared in this section.

Interim Year (2028) cumulative conditions ADT Volumes for the no-Project condition are illustrated in Figure 4-7. The corresponding no-Project peak hour turning movement volumes are illustrated in Figure 4-8 and Figure 4-9, respectively.

Interim Year (2028) cumulative conditions ADT Volumes for the with-Project condition are illustrated in Figure 4-10. The corresponding with-Project peak hour turning movement volumes are illustrated in Figure 4-11 and Figure 4-12, respectively.

Peak hour intersection levels of service calculated from the Interim Year (2028) cumulative conditions traffic volumes referenced above are summarized in Table 4-2 which provides a comparison between no-Project and the with-Project conditions. HCM delay methodology was used to analyze both the signalized intersections and the stop-controlled intersections. Sidra Intersection software was used to assess the LOS for the roundabout intersection. Detailed LOS calculation worksheets are provided in Appendix B.

The table indicates that under the Interim Year (2028) cumulative conditions, the study area intersections would generally operate at LOS D or better during both the AM and the PM peak hour, except the intersection of SR-14 SB Ramp/Soledad Canyon Road operates at LOS E during the AM peak hour and the intersection of Sand Canyon Road/Soledad Canyon Road operate at LOS E during the AM peak hour and LOS F during the PM peak hour. The additional traffic added by the Project does not result in any new LOS deficiencies and the increase in average vehicle delay due to the Project is less than significant. Therefore, the project does not result in a significant impact at any location.

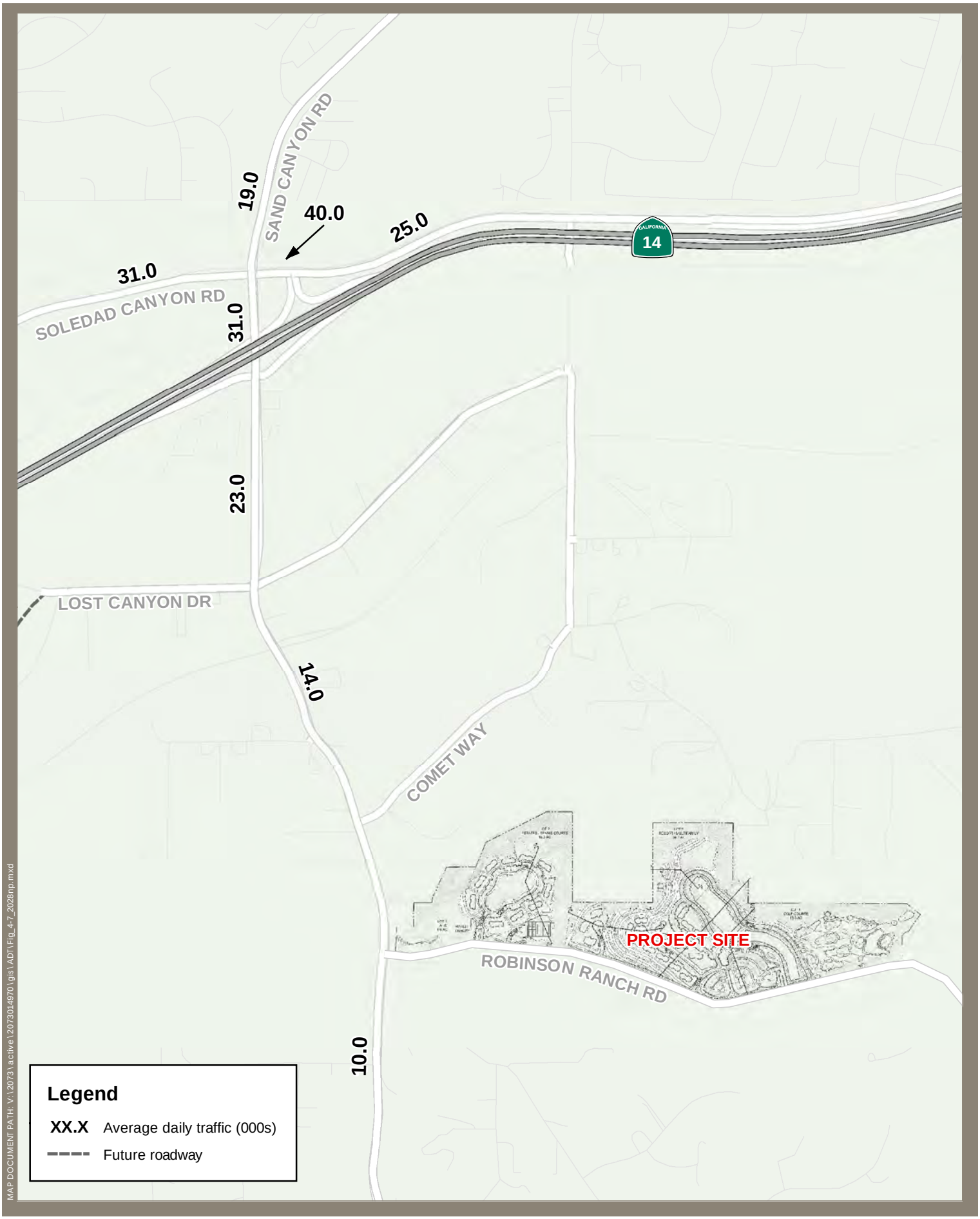

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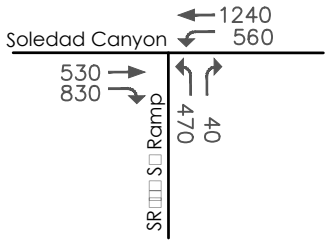
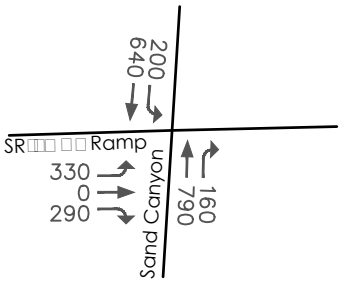
Figure 4-7
Interim Year (2028) Cumulative Conditions
Without Project - ADT Volumes (000s)

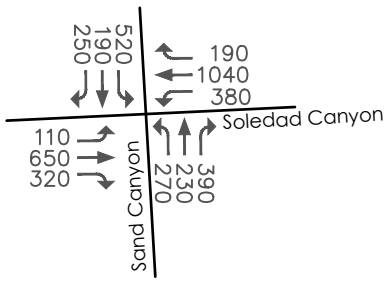
1. SR-14 SB Ramp & Soledad Canyon



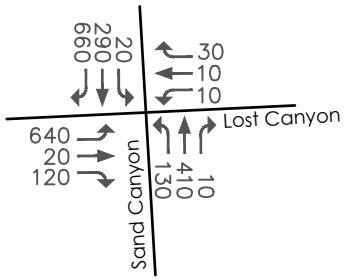
2. Sand Canyon & SR-14 NB Ramp



3. Sand Canyon Road & Soledad Canyon Road



4. Sand Canyon Road & Lost Canyon Drive



5. Sand Canyon Road & Robinson Ranch Road

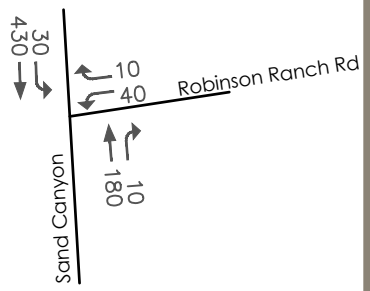


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Figure 4-□

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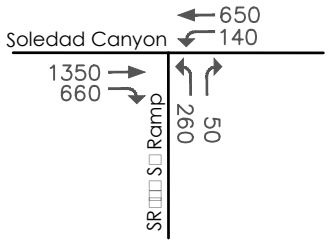
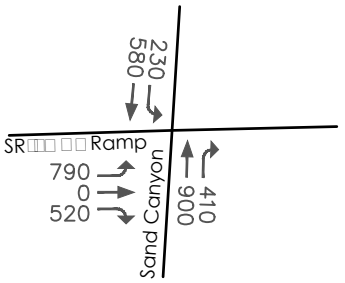
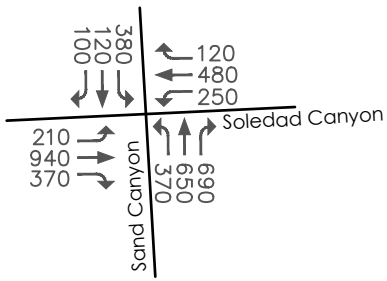
1. SR-14 SB Ramp & Soledad Canyon



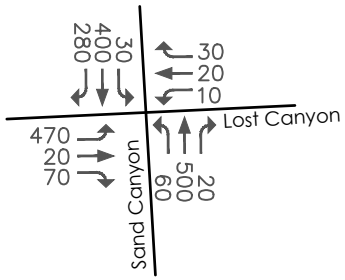
2. Sand Canyon & SR-14 NB Ramp



3. Sand Canyon Road & Soledad Canyon Road



4. Sand Canyon Road & Lost Canyon Drive



5. Sand Canyon Road & Robinson Ranch Road

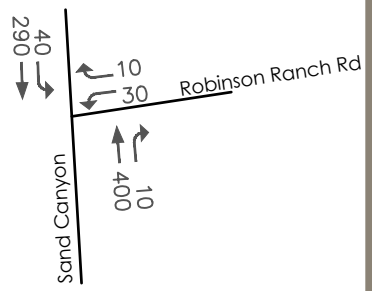


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Figure 4-9

Interim Year (2030) Cumulative Conditions Without Project PM Peak Hour Volumes

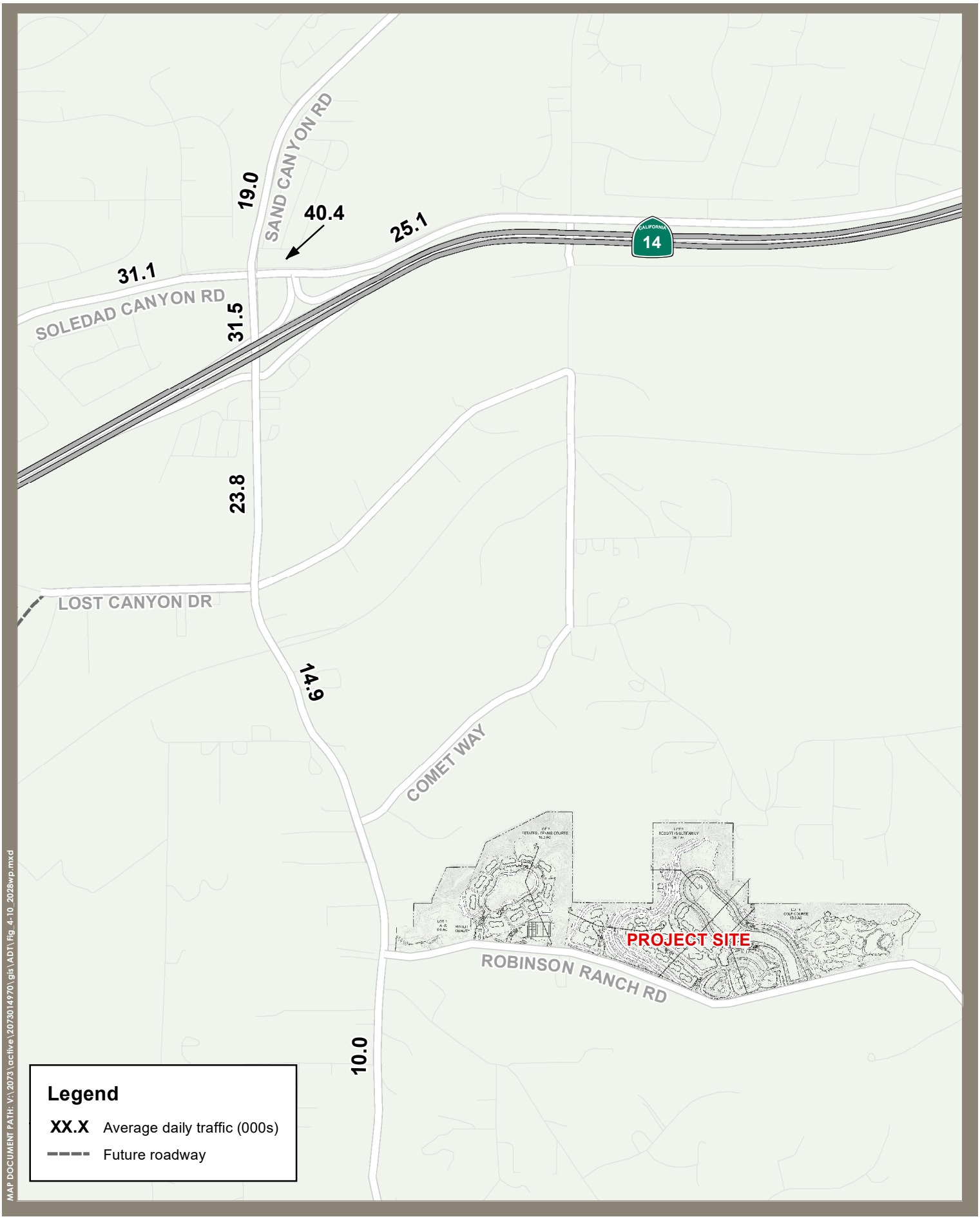

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Figure 4-10
Interim Year (2028) Cumulative Conditions With Project - ADT Volumes (000s)

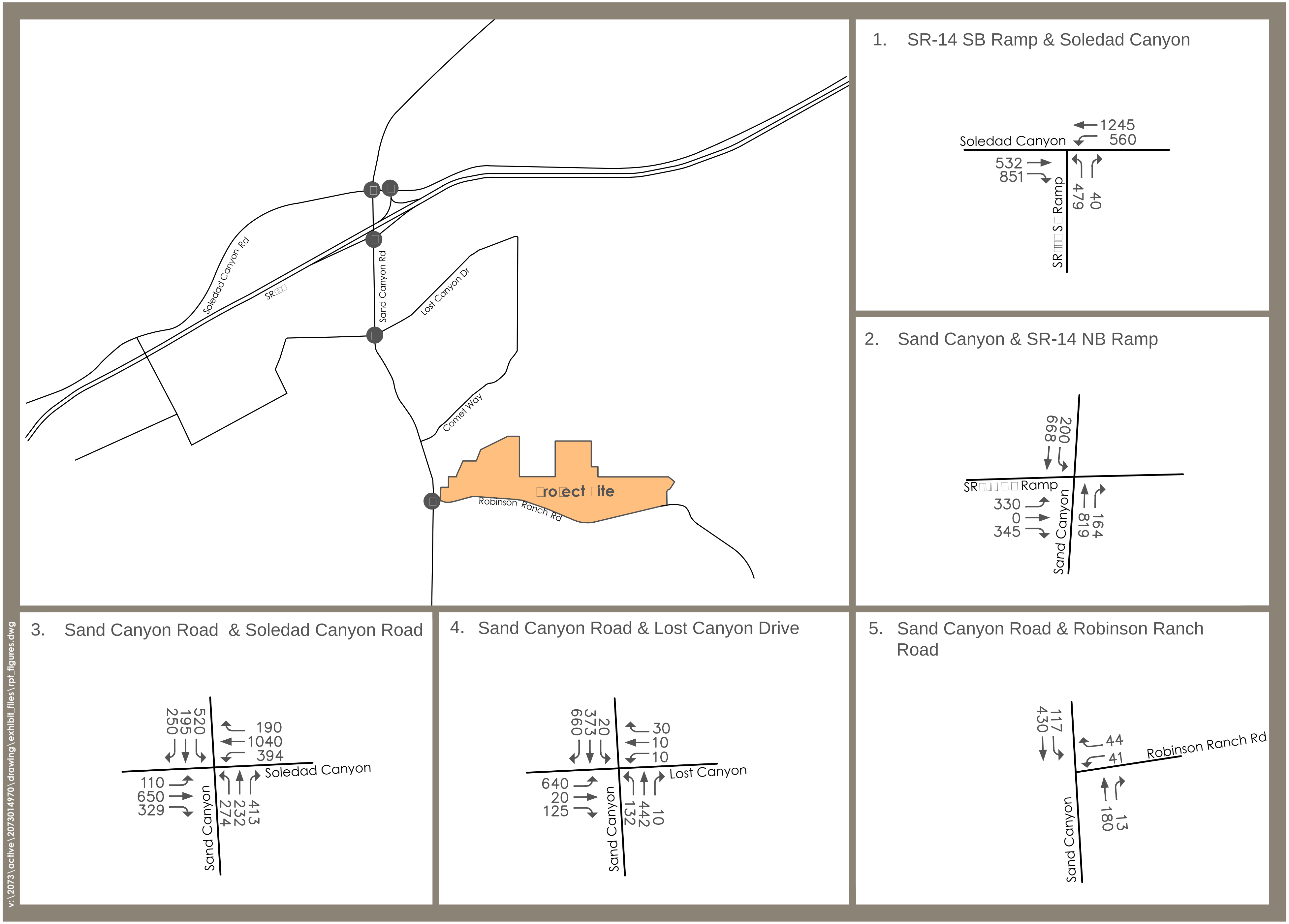

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Figure 4-11

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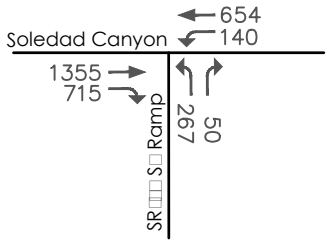
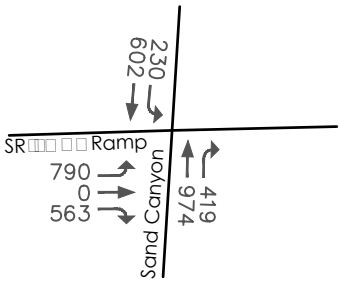
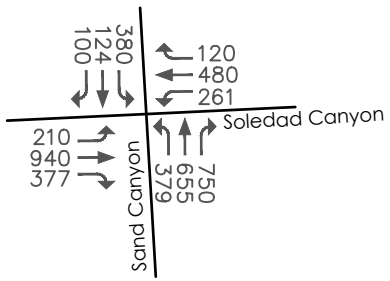
1. SR-14 SB Ramp & Soledad Canyon



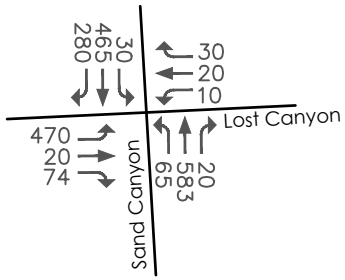
2. Sand Canyon & SR-14 NB Ramp



3. Sand Canyon Road & Soledad Canyon Road



4. Sand Canyon Road & Lost Canyon Drive



5. Sand Canyon Road & Robinson Road

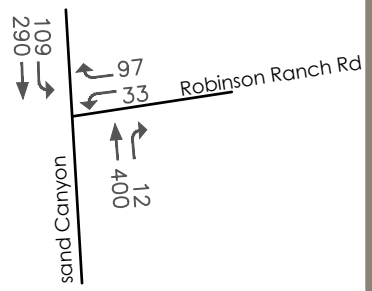


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Figure 4-12

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Table 4-2 Intersection LOS Summary – Interim Year (2028) Cumulative Conditions

Intersection Name	Traffic Control	Without-Project				With-Project				Increase	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
1. SR-14 SB Ramp & Soledad Canyon	Signal	61.6	E	33.1	C	62.8	E	35.4	D	1.2	2.3
2. Sand Canyon & SR-14 NB Ramp	Signal	18.9	B	29.9	C	21.0	C	32.7	C	2.1	2.8
3. Sand Canyon & Soledad Canyon	Signal	72.2	E	127.1	F	72.4	E	127.9	F	0.2	0.8
4. Sand Canyon & Lost Canyon	Roundabout	9.7	A	5.8	A	13.1	B	6.6	A	3.4	0.8
5. Sand Canyon Road & Robinson Ranch Road	Two-Way Stop	14.8	B	15.8	C	16.5	C	16.4	C	1.7	0.6
Note: LOS – Level of Service Delay – Average Vehicle Delay (seconds)											

4.3 LONG RANGE (2040) GENERAL PLAN BUILDOUT CONDITIONS ANALYSIS

Long Range (2040) General Plan buildout conditions ADT Volumes for the no-Project condition are illustrated in Figure 4-13. The corresponding no-Project peak hour turning movement volumes are illustrated in Figure 4-14 and Figure 4-15, respectively.

Long Range (2040) General Plan buildout ADT Volumes for the with-Project condition are illustrated in Figure 4-16. The corresponding with-Project peak hour turning movement volumes are illustrated in Figure 4-17 and Figure 4-18, respectively.

Peak hour intersection levels of service calculated using the Long Range (2040) General Plan buildout traffic volumes referenced above are summarized in Table 4-3 which provides a comparison between no-Project and the with-Project conditions. HCM delay methodology was used to analyze both the signalized intersections and the stop-controlled intersections. Sidra Intersection software was used to assess the LOS for the roundabout intersection. Detailed LOS calculation worksheets are provided in Appendix B.

The table indicates that under the Interim Year (2040) cumulative conditions, the study area intersections would operate at LOS D or better during both the AM and the PM peak hour, except the intersection of SR-14 SB Ramp/Soledad Canyon Road operates at LOS E during the AM peak hour and the intersection of Sand Canyon Road/Soledad Canyon Road operate at LOS F during both the AM and PM peak hour. The additional traffic added by the Project does not result in any new LOS deficiencies and the increase in average vehicle delay due to the Project is less than significant. Therefore, the project does not result in a significant impact at any location.

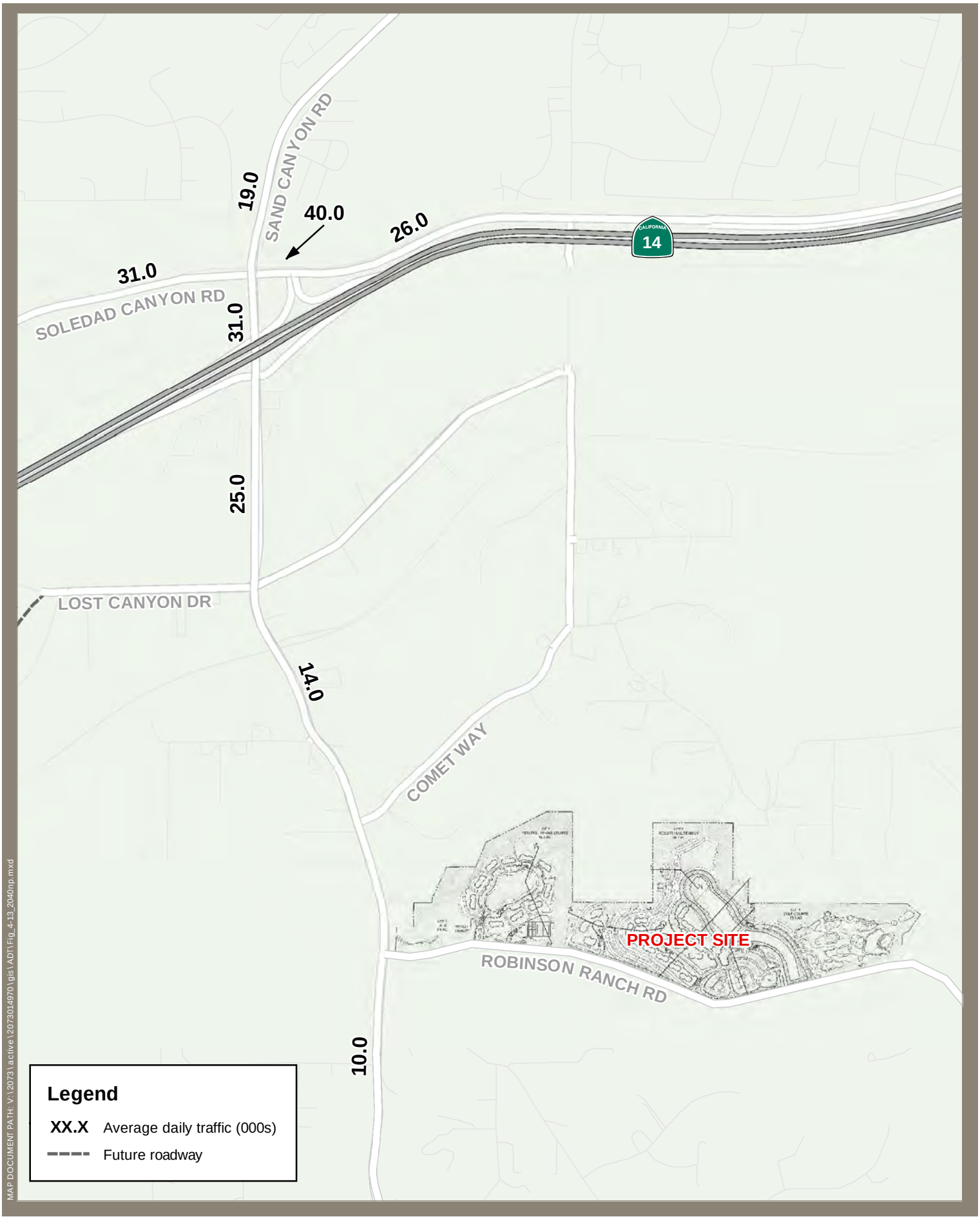

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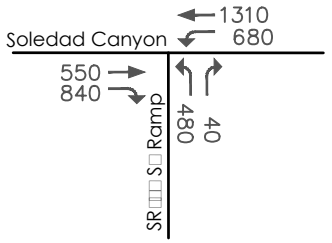
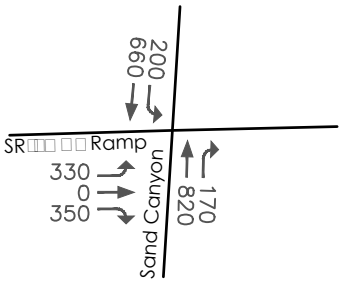
Figure 4-13
Long Range (2040) General Plan Buildout Conditions
Without Project - ADT Volumes (000s)

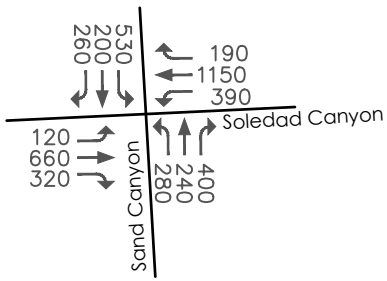
1. SR-14 SB Ramp & Soledad Canyon



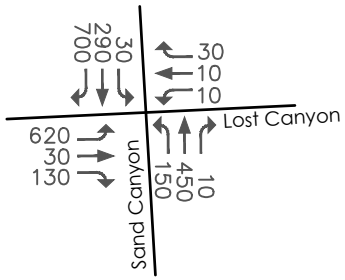
2. Sand Canyon & SR-14 NB Ramp



3. Sand Canyon Road & Soledad Canyon Road



4. Sand Canyon Road & Lost Canyon Drive



5. Sand Canyon Road & Robinson Ranch Road

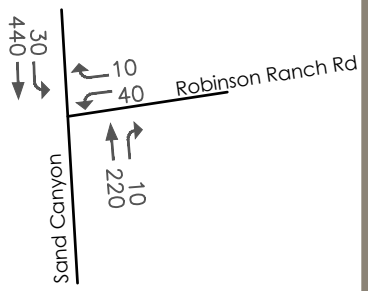


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Figure 4-14

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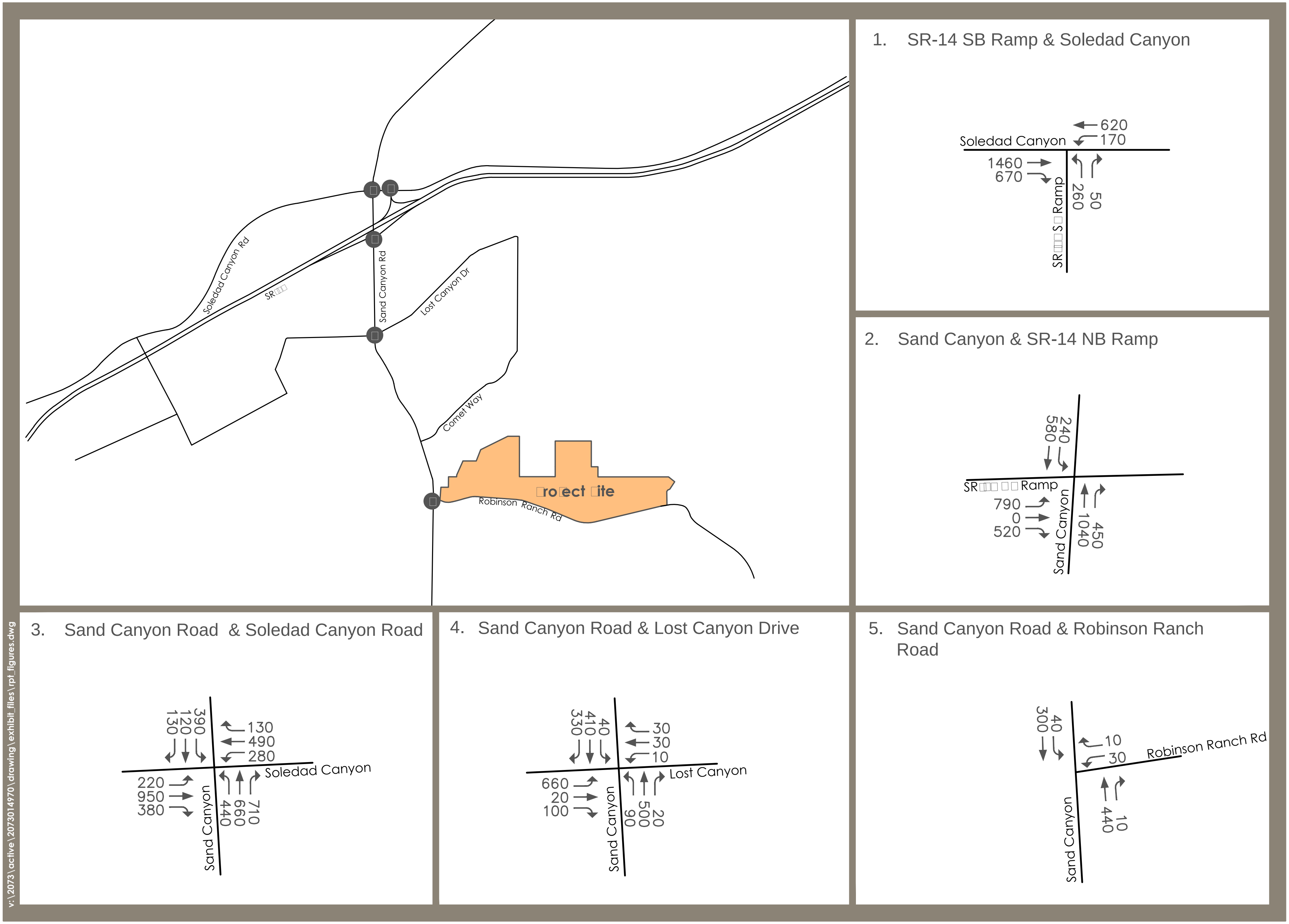

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Figure 4-1

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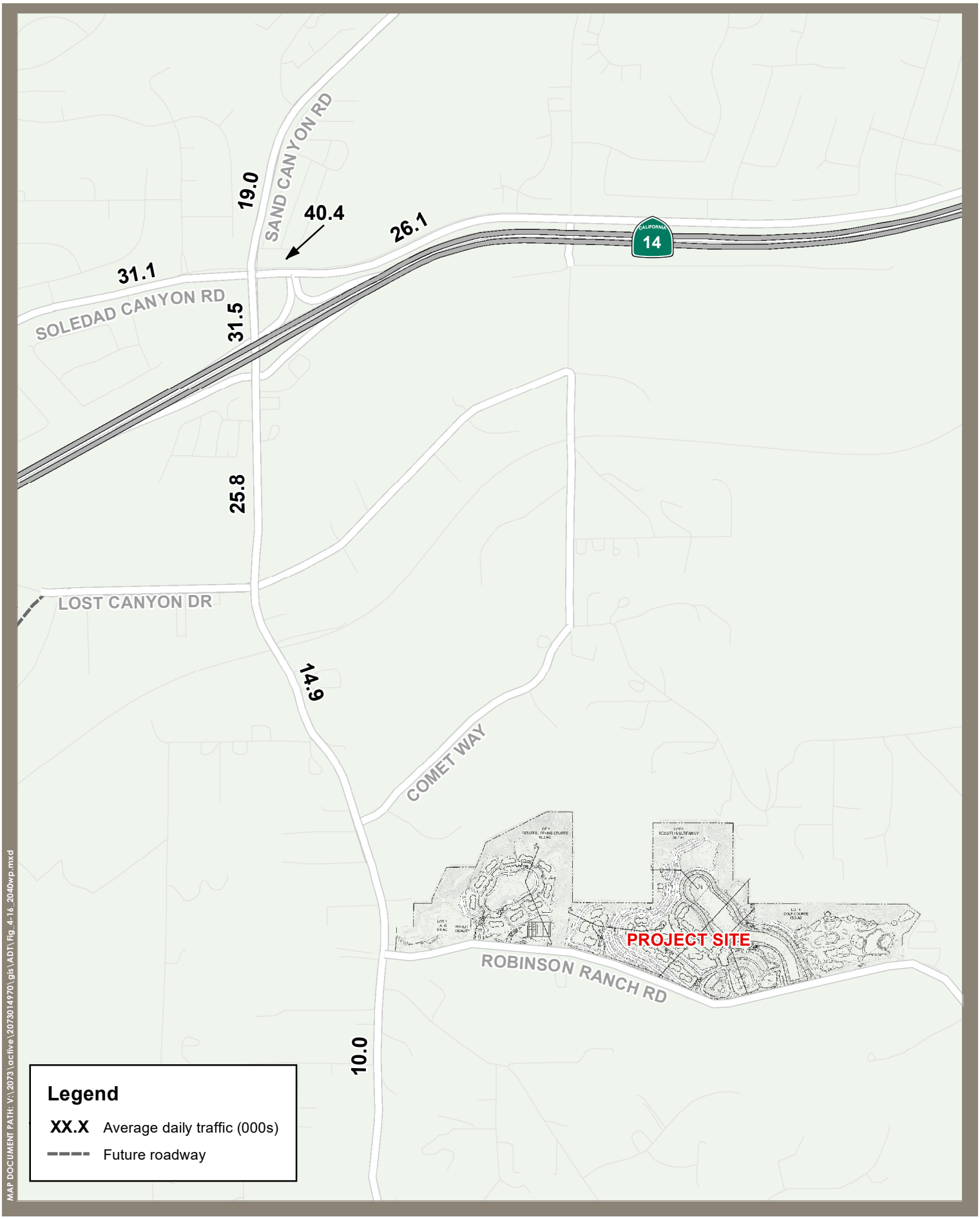

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Figure 4-16
Long Range (2040) General Plan Buildout Conditions With Project - ADT Volumes (000s)

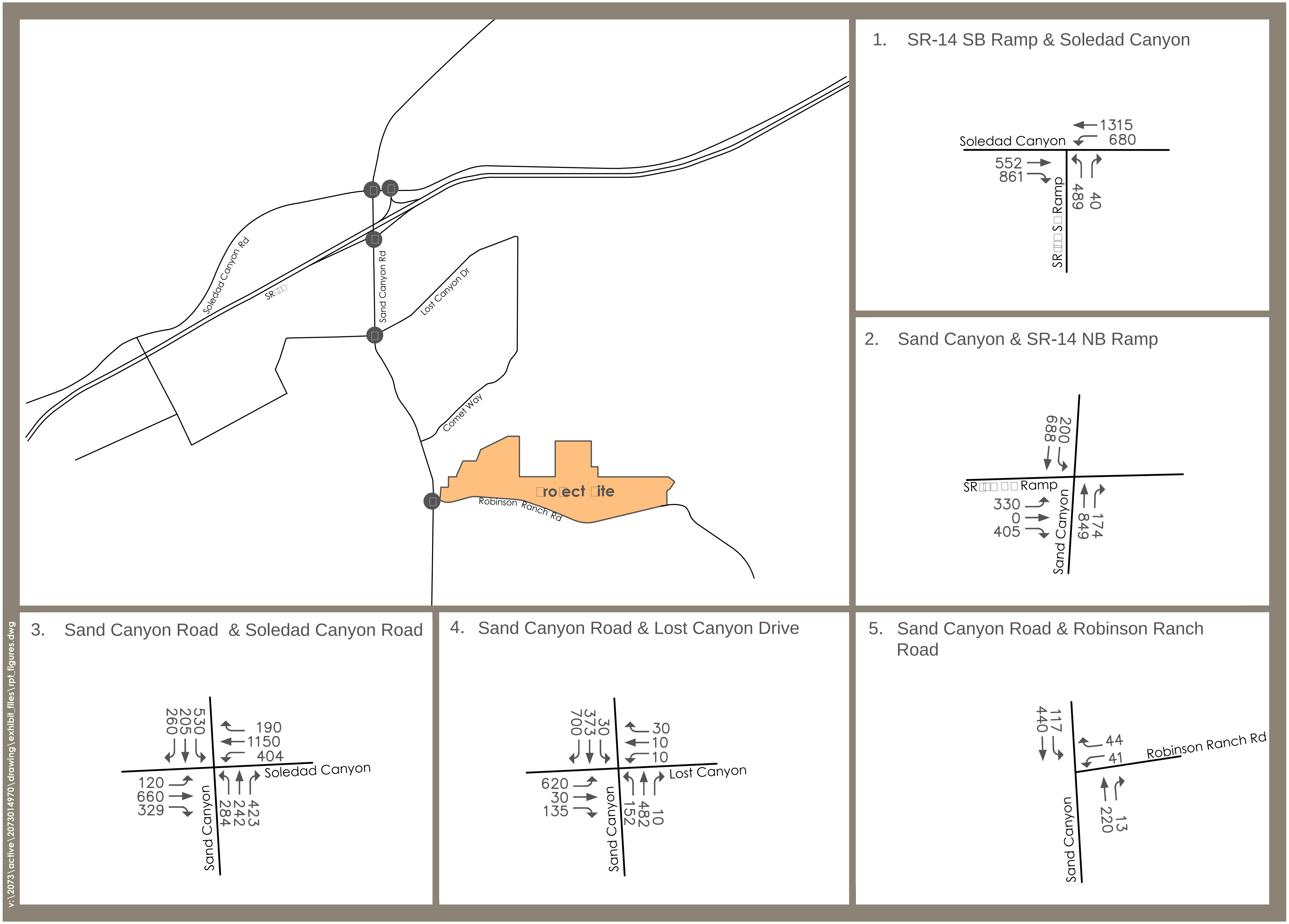

Figure 4-17

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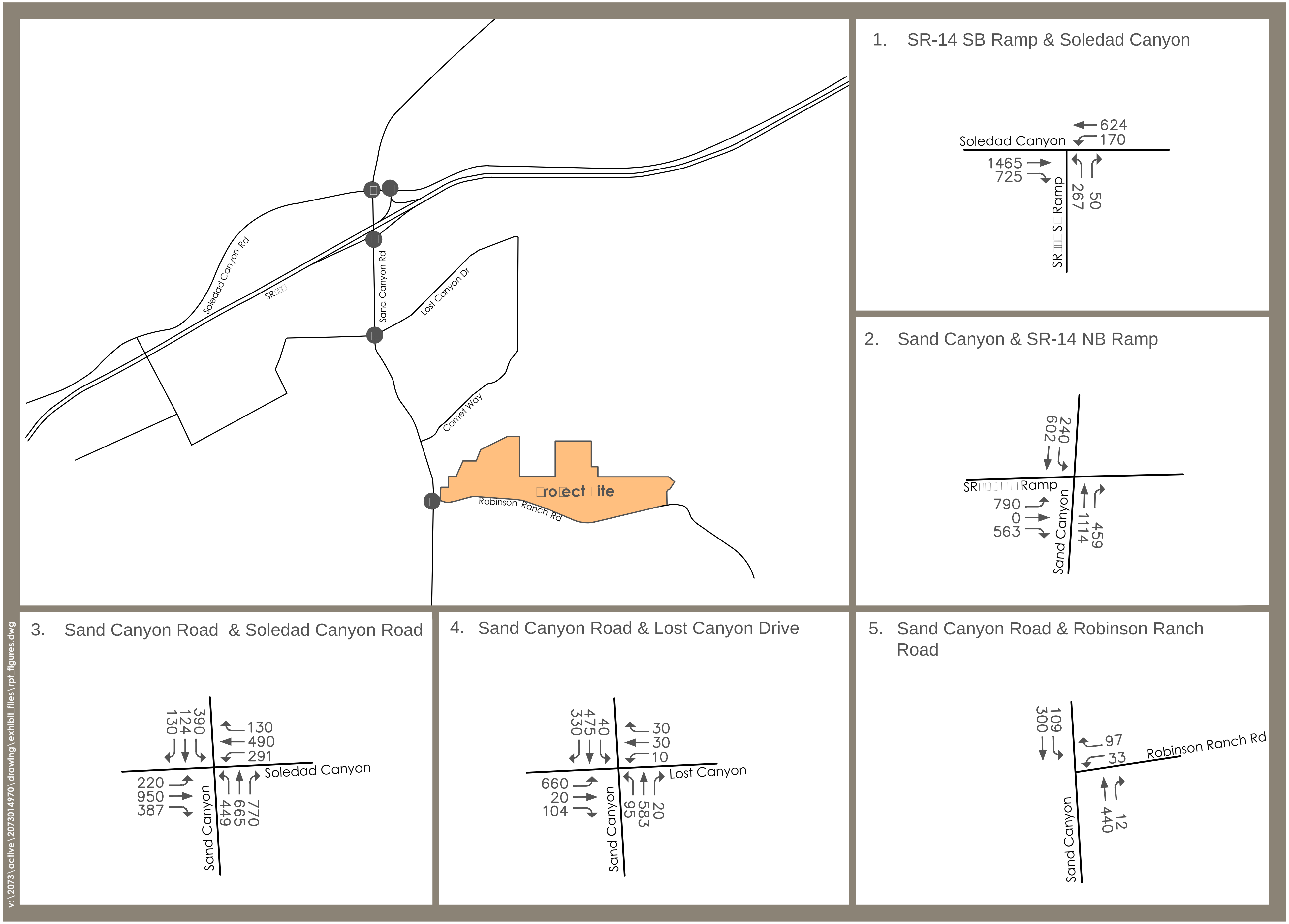

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Figure 4-1

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it Pro e t PM Peak o r o es

Table 4-3 Intersection LOS Summary – Long Range (2040) General Plan Buildout Conditions

Intersection Name	Traffic Control	Without-Project				With-Project				Increase	
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour			
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	AM	PM
1. SR-14 SB Ramp & Soledad Canyon	Signal	76.5	E	39.6	D	76.8	E	42.5	D	0.3	2.9
2. Sand Canyon & SR-14 NB Ramp	Signal	21.2	C	33.0	C	24.2	C	37.9	D	3.0	4.9
3. Sand Canyon & Soledad Canyon	Signal	79.6	E	131.3	F	80.1	F	132.8	F	0.5	1.5
4. Sand Canyon & Lost Canyon	Roundabout	10.6	B	5.9	A	15.2	B	6.8	A	4.6	0.9
5. Sand Canyon Road & Robinson Ranch Road	Two-Way Stop	15.7	C	16.7	C	17.6	C	17.5	C	1.9	0.8
Note: LOS – Level of Service Delay – Average Vehicle Delay (seconds)											

4.4 CONCLUSION

This traffic study was conducted to evaluate Project impacts associated with the development of the proposed Sand Canyon Resort Project. Existing conditions, Opening Day with and without Project, Cumulative conditions scenario which includes Interim Year and Long Range General Plan buildout of the Project as well as the related projects in the proximity of the study area were analyzed, and the findings of each scenario are presented.

Based on the results of the LOS analyses and the criteria set forth by the City, the study intersections operate at an acceptable level of service under existing and opening year conditions. Under Interim Year and Long Range General Plan buildout cumulative conditions, the additional traffic added by the Project does not result in any new LOS deficiencies and the increase in average vehicle delay due to the Project is less than significant. In conclusion, there's no significant impact to the study intersections with the addition of the proposed Project.

Following is a summary of the planned operation of the Project based on information provided by the Project owner that will help minimize the impact of Project generated traffic:

- The guests stay at the resort for a minimum of two-days and the check-in/check-out time does not coincide with the AM and PM peak hour traffic conditions
- The Project plans to utilize shuttle service for the guests and the employees to/from the train
- The Project would control the delivery truck timings to not affect the peak hour traffic
- The Project's proposed secondary access south of the property through Live Oak Springs Canyon Road, could be used as an emergency evacuation route during natural disasters like fire.
- The Project would provide refuge during emergencies.

Appendix A TRAFFIC COUNTS

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA CLARITA
N-S Direction: SR-14 WB RAMPS
E-W Direction: SOLEDAD CANYON ROAD

File Name : H1803071
Site Code : 00000000
Start Date : 3/28/2018
Page No : 1

Groups Printed- Turning Movements

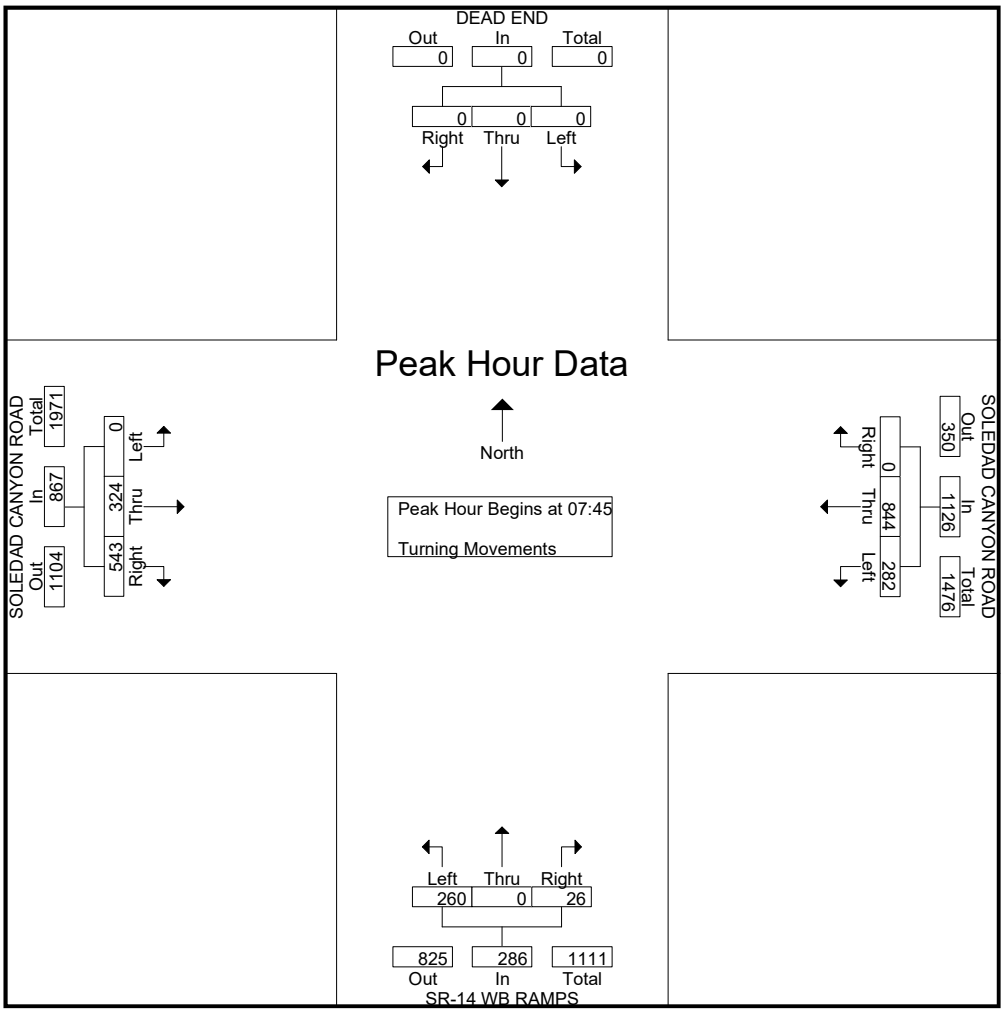
	DEAD END Southbound			SOLEDAD CANYON ROAD Westbound			SR-14 WB RAMPS Northbound			SOLEDAD CANYON ROAD Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	0	0	0	0	279	57	3	0	94	66	92	0	591
07:15	0	0	0	0	221	64	1	0	81	82	94	0	543
07:30	0	0	0	0	177	64	3	0	57	94	116	0	511
07:45	0	0	0	0	190	88	10	0	58	84	95	0	525
Total	0	0	0	0	867	273	17	0	290	326	397	0	2170
08:00	0	0	0	0	252	65	10	0	66	148	83	0	624
08:15	0	0	0	0	209	66	0	0	66	157	55	0	553
08:30	0	0	0	0	193	63	6	0	70	154	91	0	577
08:45	0	0	0	0	122	68	11	0	62	125	80	0	468
Total	0	0	0	0	776	262	27	0	264	584	309	0	2222
*** BREAK ***													
16:00	0	0	0	0	112	42	3	0	46	110	247	0	560
16:15	0	0	0	0	79	36	3	0	53	112	276	0	559
16:30	0	0	0	0	110	42	7	0	56	108	276	0	599
16:45	0	0	0	0	92	33	5	0	62	85	265	0	542
Total	0	0	0	0	393	153	18	0	217	415	1064	0	2260
17:00	0	0	0	0	100	28	8	0	51	97	326	0	610
17:15	0	0	0	0	98	37	9	0	75	100	259	0	578
17:30	0	0	0	0	104	22	11	0	50	121	305	0	613
17:45	0	0	0	0	107	37	8	0	38	109	329	0	628
Total	0	0	0	0	409	124	36	0	214	427	1219	0	2429
Grand Total	0	0	0	0	2445	812	98	0	985	1752	2989	0	9081
Apprch %	0	0	0	0	75.1	24.9	9	0	91	37	63	0	
Total %	0	0	0	0	26.9	8.9	1.1	0	10.8	19.3	32.9	0	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA CLARITA
N-S Direction: SR-14 WB RAMPS
E-W Direction: SOLEDAD CANYON ROAD

File Name : H1803071
Site Code : 00000000
Start Date : 3/28/2018

	DEAD END Southbound				SOLEDAD CANYON ROAD Westbound				SR-14 WB RAMPS Northbound				SOLEDAD CANYON ROAD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	0	0	0	0	0	190	**88**	278	**10**	0	58	68	84	**95**	0	179	525
08:00	0	0	0	0	0	**252**	65	**317**	10	0	66	**76**	148	83	0	231	**624**
08:15	0	0	0	0	0	209	66	275	0	0	66	66	**157**	55	0	212	553
08:30	0	0	0	0	0	193	63	256	6	0	**70**	76	154	91	0	**245**	577
Total Volume	0	0	0	0	0	844	282	1126	26	0	260	286	543	324	0	867	2279
% App. Total	0	0	0		0	75	25		9.1	0	90.9		62.6	37.4	0		
PHF	.000	.000	.000	.000	.000	.837	.801	.888	.650	.000	.929	.941	.865	.853	.000	.885	.913

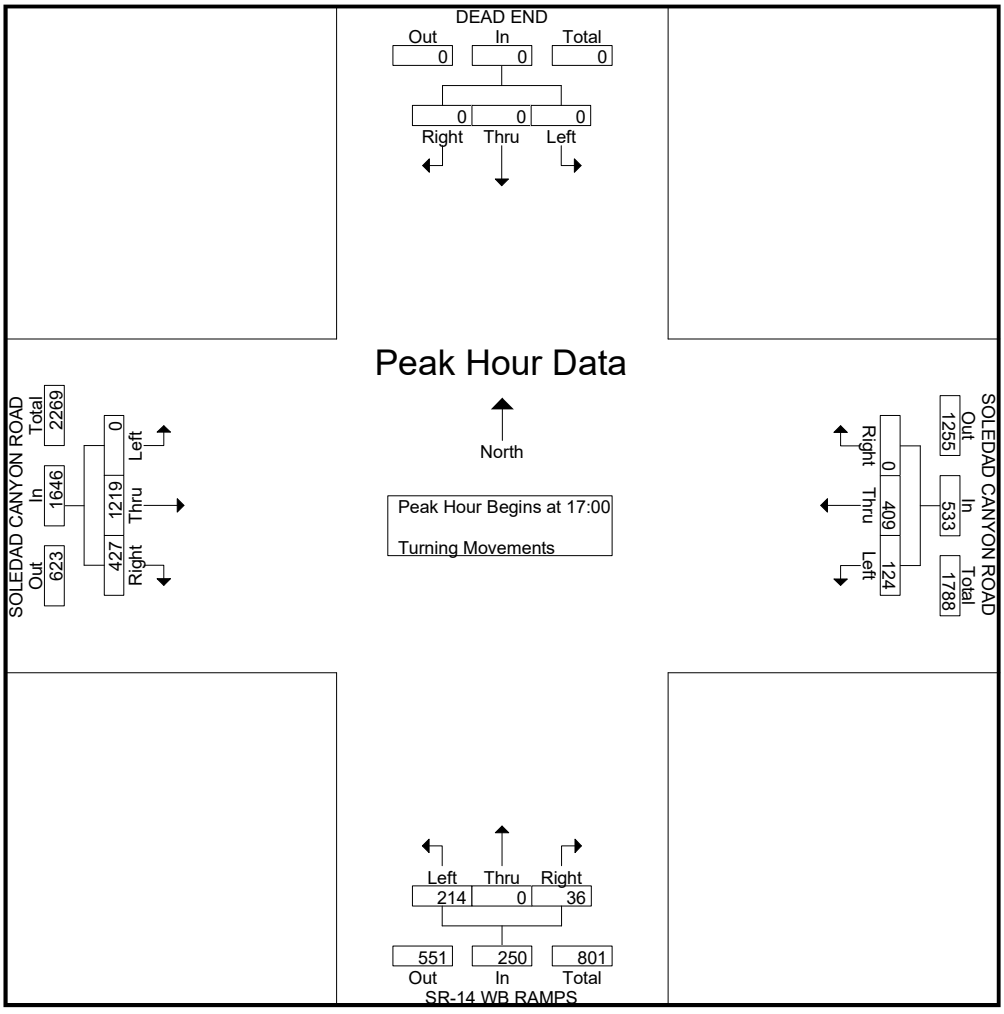


Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA CLARITA
N-S Direction: SR-14 WB RAMPS
E-W Direction: SOLEDAD CANYON ROAD

File Name : H1803071
Site Code : 00000000
Start Date : 3/28/2018
Page No : 3

	DEAD END Southbound				SOLEDAD CANYON ROAD Westbound				SR-14 WB RAMPS Northbound				SOLEDAD CANYON ROAD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	0	0	0	0	0	100	28	128	8	0	51	59	97	326	0	423	610
17:15	0	0	0	0	0	98	**37**	135	9	0	**75**	**84**	100	259	0	359	578
17:30	0	0	0	0	0	104	22	126	**11**	0	50	61	**121**	305	0	426	613
17:45	0	0	0	0	0	**107**	37	**144**	8	0	38	46	109	**329**	0	**438**	**628**
Total Volume	0	0	0	0	0	409	124	533	36	0	214	250	427	1219	0	1646	2429
% App. Total	0	0	0		0	76.7	23.3		14.4	0	85.6		25.9	74.1	0		
PHF	.000	.000	.000	.000	.000	.956	.838	.925	.818	.000	.713	.744	.882	.926	.000	.939	.967



Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA CLARITA
N-S Direction: SAND CANYON ROAD
E-W Direction: SR-14 EB RAMPS

File Name : H1803072
Site Code : 00000000
Start Date : 3/28/2018

Groups Printed- Turrning Movements

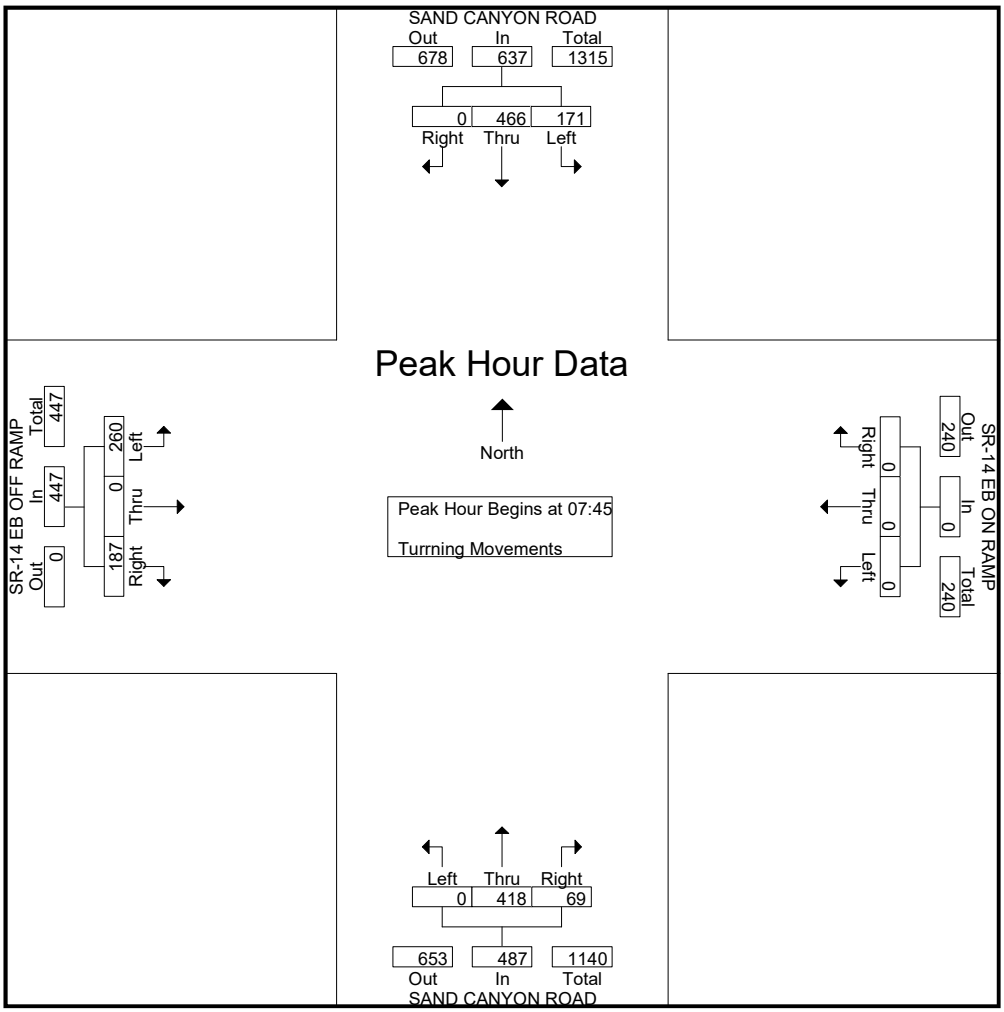
	SAND CANYON ROAD Southbound			SR-14 EB ON RAMP Westbound			SAND CANYON ROAD Northbound			SR-14 EB OFF RAMP Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	0	102	45	0	0	0	14	48	0	31	0	46	286
07:15	0	88	49	0	0	0	10	55	0	26	0	56	284
07:30	0	90	48	0	0	0	21	58	0	41	0	65	323
07:45	0	83	51	0	0	0	21	62	0	38	0	70	325
Total	0	363	193	0	0	0	66	223	0	136	0	237	1218
08:00	0	91	50	0	0	0	12	69	0	38	0	83	343
08:15	0	147	37	0	0	0	19	134	0	63	0	57	457
08:30	0	145	33	0	0	0	17	153	0	48	0	50	446
08:45	0	63	20	0	0	0	23	113	0	42	0	45	306
Total	0	446	140	0	0	0	71	469	0	191	0	235	1552
*** BREAK ***													
16:00	0	98	52	0	0	0	49	83	0	83	0	170	535
16:15	0	76	52	0	0	0	87	105	0	80	0	178	578
16:30	0	88	50	0	0	0	74	100	0	79	0	169	560
16:45	0	81	53	0	0	0	72	87	0	85	0	183	561
Total	0	343	207	0	0	0	282	375	0	327	0	700	2234
17:00	0	90	53	0	0	0	72	67	0	97	0	179	558
17:15	0	96	48	0	0	0	63	78	0	65	0	160	510
17:30	0	104	62	0	0	0	57	71	0	65	0	205	564
17:45	0	80	56	0	0	0	58	76	0	73	0	189	532
Total	0	370	219	0	0	0	250	292	0	300	0	733	2164
Grand Total	0	1522	759	0	0	0	669	1359	0	954	0	1905	7168
Apprch %	0	66.7	33.3	0	0	0	33	67	0	33.4	0	66.6	
Total %	0	21.2	10.6	0	0	0	9.3	19	0	13.3	0	26.6	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA CLARITA
N-S Direction: SAND CANYON ROAD
E-W Direction: SR-14 EB RAMPS

File Name : H1803072
Site Code : 00000000
Start Date : 3/28/2018

	SAND CANYON ROAD Southbound				SR-14 EB ON RAMP Westbound				SAND CANYON ROAD Northbound				SR-14 EB OFF RAMP Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45																	
07:45	0	83	**51**	134	0	0	0	0	**21**	62	0	83	38	0	70	108	325
08:00	0	91	50	141	0	0	0	0	12	69	0	81	38	0	**83**	**121**	343
08:15	0	**147**	37	**184**	0	0	0	0	19	134	0	153	**63**	0	57	120	**457**
08:30	0	145	33	178	0	0	0	0	17	**153**	0	**170**	48	0	50	98	446
Total Volume	0	466	171	637	0	0	0	0	69	418	0	487	187	0	260	447	1571
% App. Total	0	73.2	26.8		0	0	0		14.2	85.8	0		41.8	0	58.2		
PHF	.000	.793	.838	.865	.000	.000	.000	.000	.821	.683	.000	.716	.742	.000	.783	.924	.859

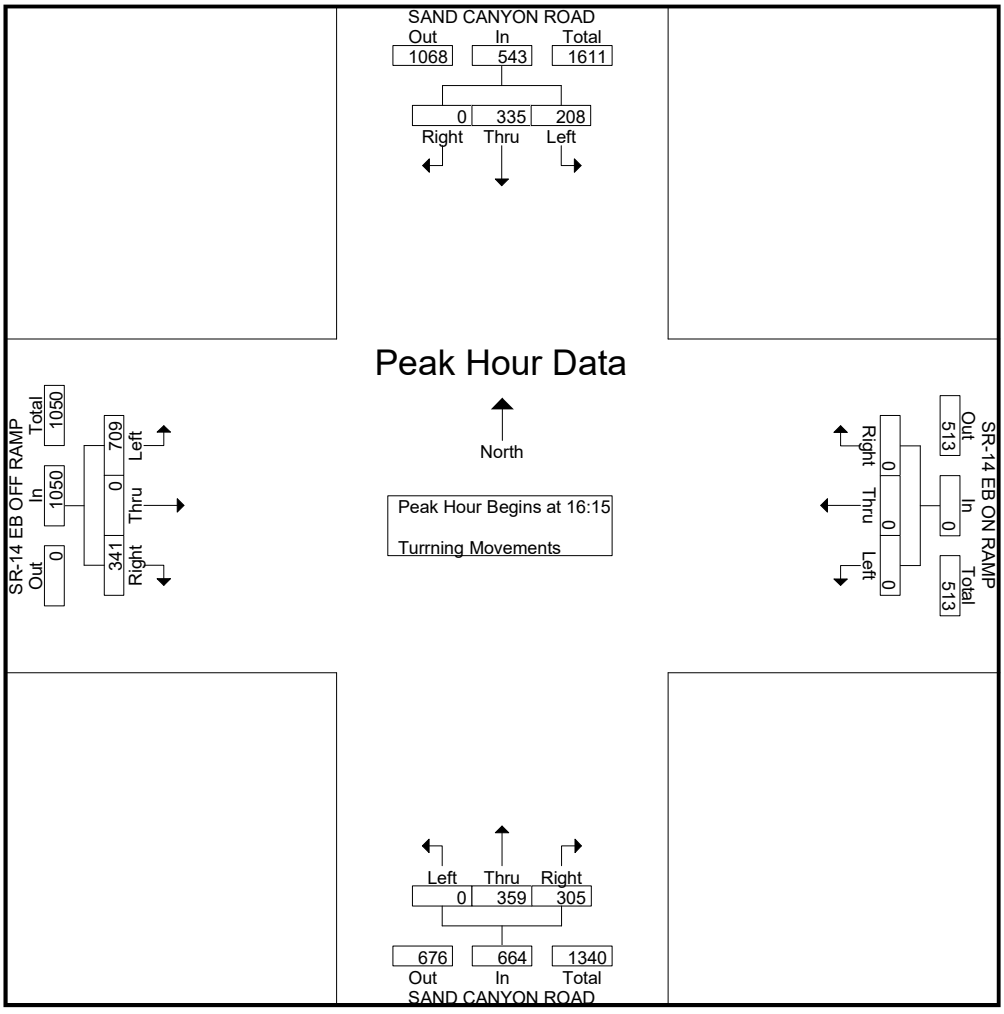


Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA CLARITA
N-S Direction: SAND CANYON ROAD
E-W Direction: SR-14 EB RAMPS

File Name : H1803072
Site Code : 00000000
Start Date : 3/28/2018

	SAND CANYON ROAD Southbound				SR-14 EB ON RAMP Westbound				SAND CANYON ROAD Northbound				SR-14 EB OFF RAMP Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:15																	
16:15	0	76	52	128	0	0	0	0	**87**	**105**	0	**192**	80	0	178	258	**578**
16:30	0	88	50	138	0	0	0	0	74	100	0	174	79	0	169	248	560
16:45	0	81	**53**	134	0	0	0	0	72	87	0	159	85	0	**183**	268	561
17:00	0	**90**	53	**143**	0	0	0	0	72	67	0	139	**97**	0	179	**276**	558
Total Volume	0	335	208	543	0	0	0	0	305	359	0	664	341	0	709	1050	2257
% App. Total	0	61.7	38.3		0	0	0		45.9	54.1	0		32.5	0	67.5		
PHF	.000	.931	.981	.949	.000	.000	.000	.000	.876	.855	.000	.865	.879	.000	.969	.951	.976



Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA CLARITA
N-S Direction: SAND CANYON ROAD
E-W Direction: SOLEDAD CANYON ROAD

File Name : H1803070
Site Code : 00000000
Start Date : 3/28/2018
Page No : 1

Groups Printed- Turning Movements

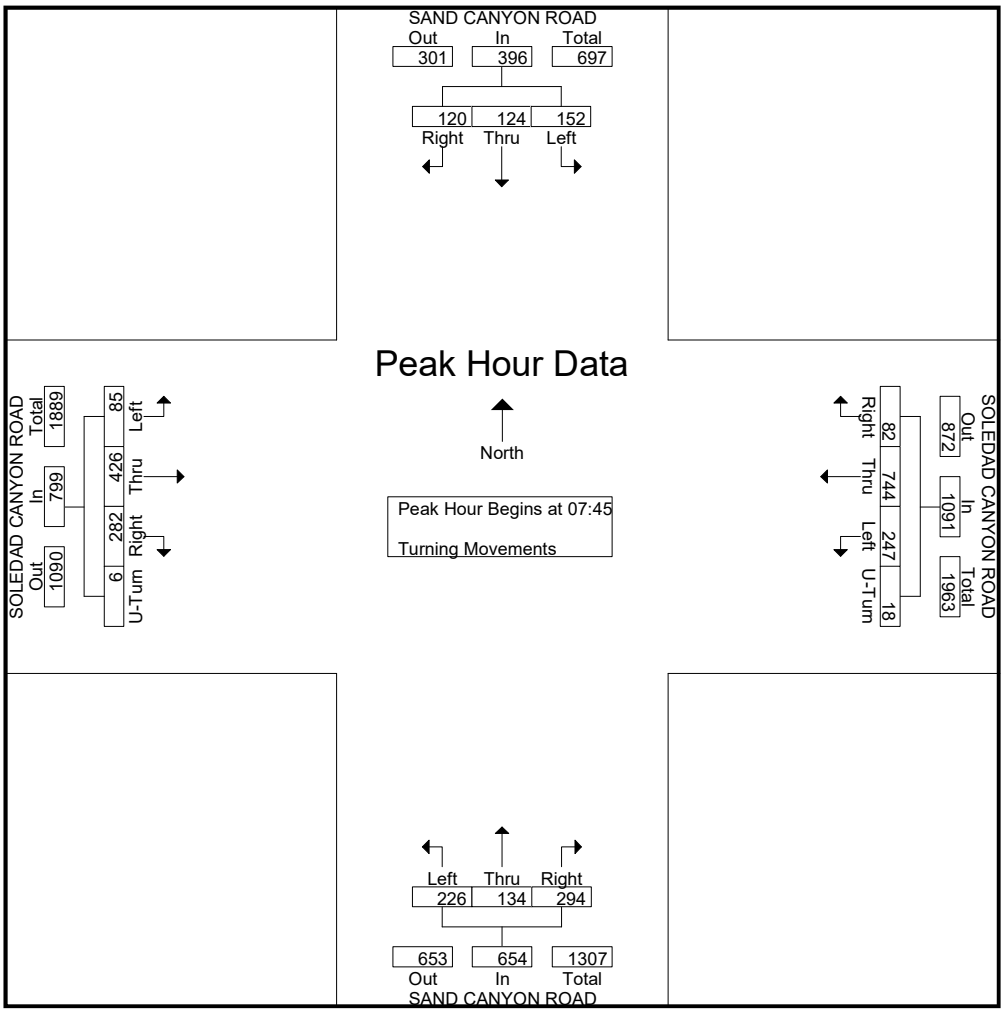
	SAND CANYON ROAD Southbound			SOLEDAD CANYON ROAD Westbound				SAND CANYON ROAD Northbound			SOLEDAD CANYON ROAD Eastbound				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
07:00	27	27	23	23	251	85	7	36	17	36	38	77	11	0	658
07:15	37	27	32	18	229	78	2	67	29	32	56	99	16	1	723
07:30	29	20	21	27	139	47	2	51	25	31	62	117	15	0	586
07:45	27	26	39	26	191	45	1	53	31	51	68	105	25	0	688
Total	120	100	115	94	810	255	12	207	102	150	224	398	67	1	2655
08:00	39	24	46	32	200	55	4	79	31	53	63	110	23	4	763
08:15	35	33	36	12	177	80	5	76	33	72	67	106	20	2	754
08:30	19	41	31	12	176	67	8	86	39	50	84	105	17	0	735
08:45	20	17	26	10	180	37	5	85	35	66	37	101	22	1	642
Total	113	115	139	66	733	239	22	326	138	241	251	422	82	7	2894
*** BREAK ***															
16:00	42	41	66	12	111	39	3	129	52	72	87	164	31	0	849
16:15	15	19	42	9	96	19	2	164	53	87	79	212	32	0	829
16:30	25	21	32	13	117	34	1	138	50	71	60	179	37	0	778
16:45	13	24	36	11	106	31	4	161	51	53	71	151	24	0	736
Total	95	105	176	45	430	123	10	592	206	283	297	706	124	0	3192
17:00	20	21	39	19	109	21	3	164	31	59	78	203	27	3	797
17:15	19	16	40	21	115	41	2	135	40	65	73	222	26	4	819
17:30	17	18	47	20	95	38	2	152	49	67	95	220	43	1	864
17:45	15	17	53	21	106	39	1	167	52	47	85	203	20	0	826
Total	71	72	179	81	425	139	8	618	172	238	331	848	116	8	3306
Grand Total	399	392	609	286	2398	756	52	1743	618	912	1103	2374	389	16	12047
Apprch %	28.5	28	43.5	8.2	68.7	21.6	1.5	53.3	18.9	27.9	28.4	61.2	10	0.4	
Total %	3.3	3.3	5.1	2.4	19.9	6.3	0.4	14.5	5.1	7.6	9.2	19.7	3.2	0.1	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA CLARITA
N-S Direction: SAND CANYON ROAD
E-W Direction: SOLEDAD CANYON ROAD

File Name : H1803070
Site Code : 00000000
Start Date : 3/28/2018
Page No : 2

	SAND CANYON ROAD Southbound				SOLEDAD CANYON ROAD Westbound					SAND CANYON ROAD Northbound				SOLEDAD CANYON ROAD Eastbound					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:45																			
07:45	27	26	39	92	26	191	45	1	263	53	31	51	135	68	105	**25**	0	198	688
08:00	**39**	24	**46**	**109**	**32**	**200**	55	4	**291**	79	31	53	163	63	**110**	23	**4**	200	**763**
08:15	35	33	36	104	12	177	**80**	5	274	76	33	**72**	**181**	67	106	20	2	195	754
08:30	19	**41**	31	91	12	176	67	**8**	263	**86**	**39**	50	175	**84**	105	17	0	**206**	735
Total Volume	120	124	152	396	82	744	247	18	1091	294	134	226	654	282	426	85	6	799	2940
% App. Total	30.3	31.3	38.4		7.5	68.2	22.6	1.6		45	20.5	34.6		35.3	53.3	10.6	0.8		
PHF	.769	.756	.826	.908	.641	.930	.772	.563	.937	.855	.859	.785	.903	.839	.968	.850	.375	.970	.963

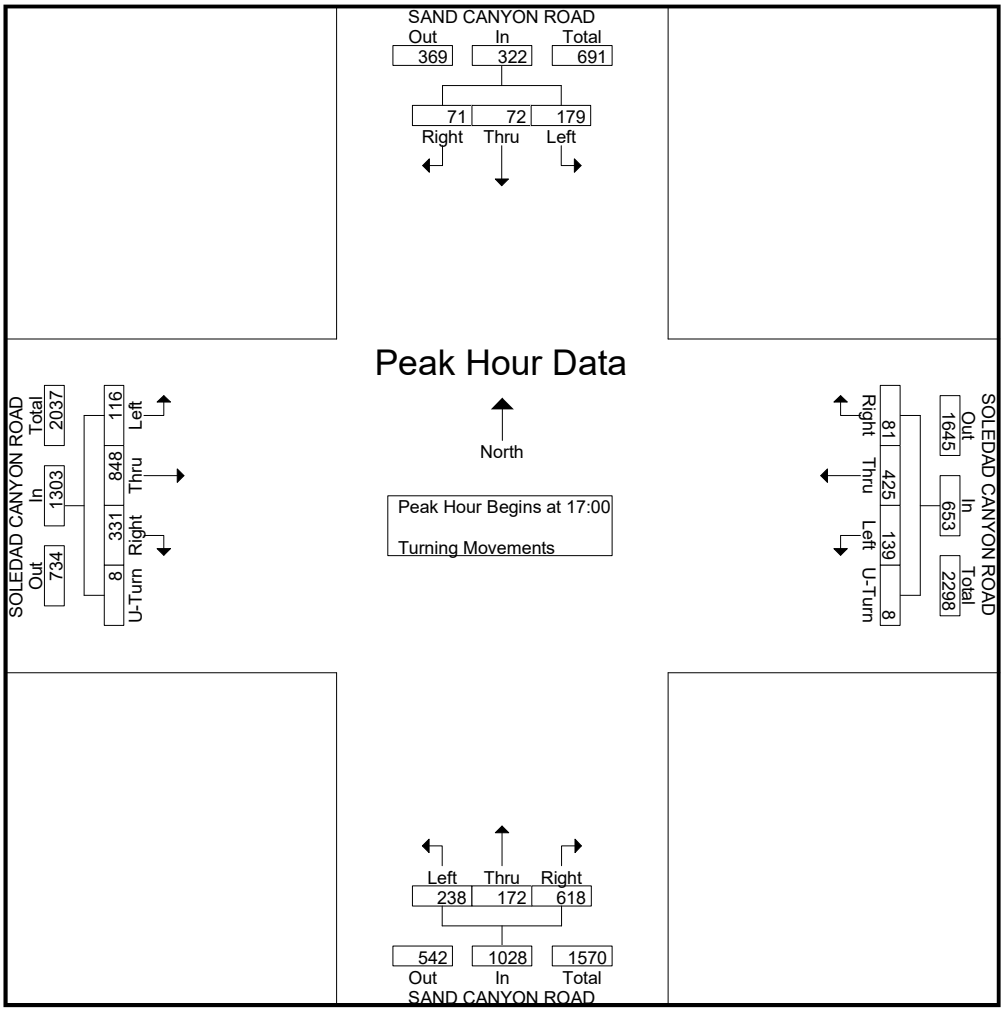


Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA CLARITA
N-S Direction: SAND CANYON ROAD
E-W Direction: SOLEDAD CANYON ROAD

File Name : H1803070
Site Code : 00000000
Start Date : 3/28/2018
Page No : 3

	SAND CANYON ROAD Southbound				SOLEDAD CANYON ROAD Westbound					SAND CANYON ROAD Northbound				SOLEDAD CANYON ROAD Eastbound					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 17:00																			
17:00	**20**	**21**	39	80	19	109	21	**3**	152	164	31	59	254	78	203	27	3	311	797
17:15	19	16	40	75	**21**	**115**	**41**	2	**179**	135	40	65	240	73	**222**	26	**4**	325	819
17:30	17	18	47	82	20	95	38	2	155	152	49	**67**	**268**	**95**	220	**43**	1	**359**	**864**
17:45	15	17	**53**	**85**	21	106	39	1	167	**167**	**52**	47	266	85	203	20	0	308	826
Total Volume	71	72	179	322	81	425	139	8	653	618	172	238	1028	331	848	116	8	1303	3306
% App. Total	22	22.4	55.6		12.4	65.1	21.3	1.2		60.1	16.7	23.2		25.4	65.1	8.9	0.6		
PHF	.888	.857	.844	.947	.964	.924	.848	.667	.912	.925	.827	.888	.959	.871	.955	.674	.500	.907	.957



Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA CLARITA
N-S Direction: SAND CANYON ROAD
E-W Direction: LOST CANYON ROAD

File Name : H1803073
Site Code : 00000000
Start Date : 3/28/2018

Groups Printed- Turning Movements

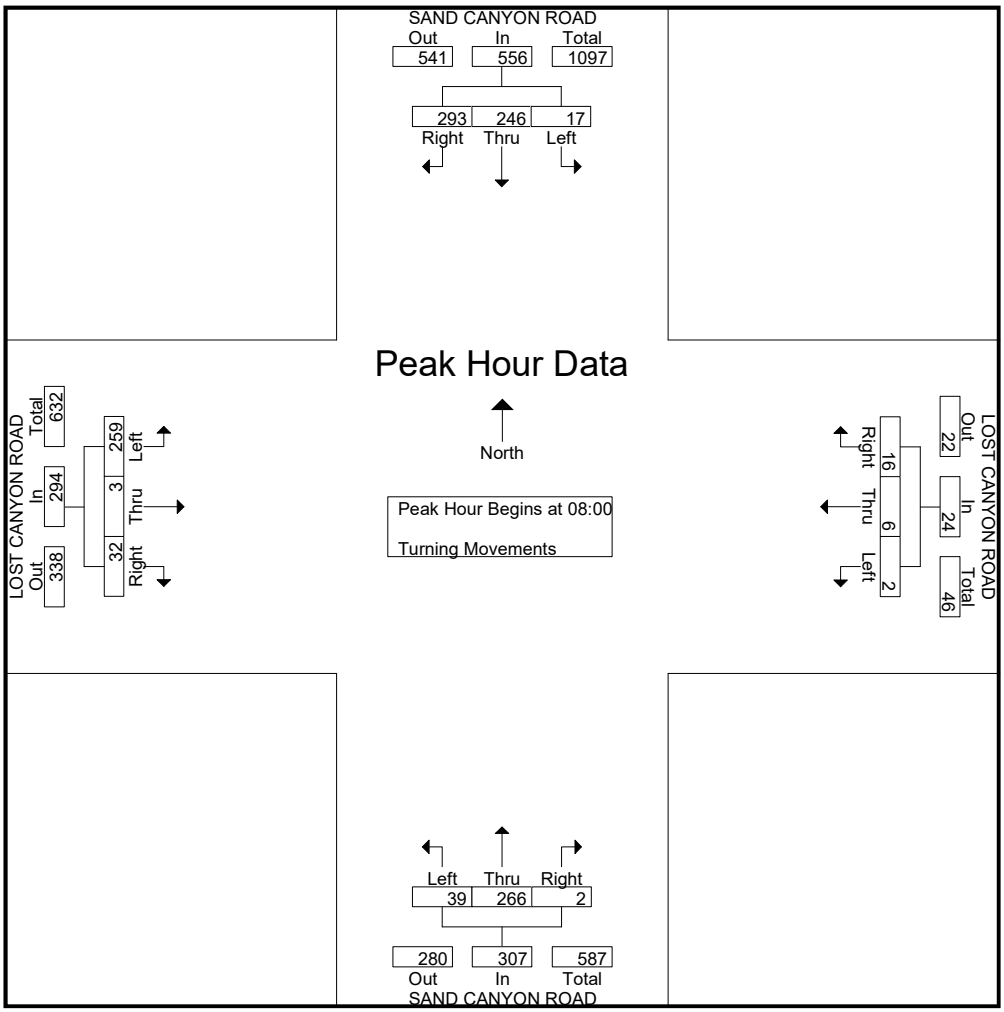
	SAND CANYON ROAD Southbound			LOST CANYON ROAD Westbound			SAND CANYON ROAD Northbound			LOST CANYON ROAD Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	4	112	2	9	0	1	0	41	0	1	0	1	171
07:15	5	91	2	5	0	0	0	48	0	1	0	5	157
07:30	11	93	3	3	0	3	0	58	3	2	0	8	184
07:45	15	83	4	9	0	1	0	41	4	4	0	6	167
Total	35	379	11	26	0	5	0	188	7	8	0	20	679
08:00	52	40	5	3	2	0	1	67	2	0	1	10	183
08:15	118	71	5	0	0	1	1	68	19	10	1	83	377
08:30	105	70	2	3	3	1	0	66	15	14	0	113	392
08:45	18	65	5	10	1	0	0	65	3	8	1	53	229
Total	293	246	17	16	6	2	2	266	39	32	3	259	1181
*** BREAK ***													
16:00	5	96	12	2	0	0	2	99	1	1	0	10	228
16:15	3	73	3	1	1	1	2	102	1	0	1	9	197
16:30	2	71	5	9	1	0	5	101	0	0	0	7	201
16:45	2	70	3	3	0	0	3	94	0	0	0	3	178
Total	12	310	23	15	2	1	12	396	2	1	1	29	804
17:00	2	101	3	9	0	0	3	85	1	0	0	7	211
17:15	1	65	10	3	0	0	2	101	1	0	0	5	188
17:30	5	85	9	8	0	2	5	103	0	0	1	0	218
17:45	2	58	8	7	0	0	3	91	0	0	0	5	174
Total	10	309	30	27	0	2	13	380	2	0	1	17	791
Grand Total	350	1244	81	84	8	10	27	1230	50	41	5	325	3455
Apprch %	20.9	74.3	4.8	82.4	7.8	9.8	2.1	94.1	3.8	11.1	1.3	87.6	
Total %	10.1	36	2.3	2.4	0.2	0.3	0.8	35.6	1.4	1.2	0.1	9.4	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA CLARITA
N-S Direction: SAND CANYON ROAD
E-W Direction: LOST CANYON ROAD

File Name : H1803073
Site Code : 00000000
Start Date : 3/28/2018
Page No : 2

	SAND CANYON ROAD Southbound				LOST CANYON ROAD Westbound				SAND CANYON ROAD Northbound				LOST CANYON ROAD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00																	
08:00	52	40	**5**	97	3	2	0	5	**1**	67	2	70	0	**1**	10	11	183
08:15	**118**	**71**	5	**194**	0	0	**1**	1	1	**68**	**19**	**88**	10	1	83	94	377
08:30	105	70	2	177	3	**3**	1	7	0	66	15	81	**14**	0	**113**	**127**	**392**
08:45	18	65	5	88	**10**	1	0	**11**	0	65	3	68	8	1	53	62	229
Total Volume	293	246	17	556	16	6	2	24	2	266	39	307	32	3	259	294	1181
% App. Total	52.7	44.2	3.1		66.7	25	8.3		0.7	86.6	12.7		10.9	1	88.1		
PHF	.621	.866	.850	.716	.400	.500	.500	.545	.500	.978	.513	.872	.571	.750	.573	.579	.753

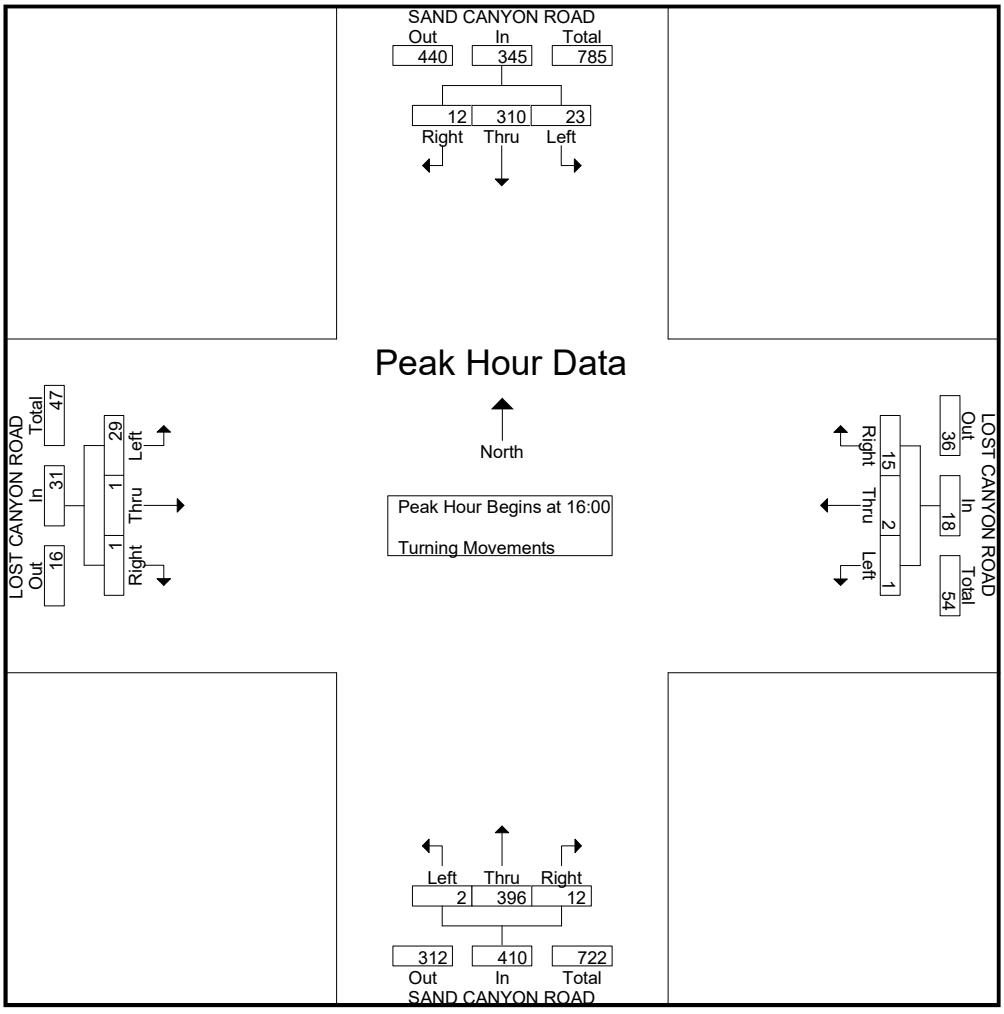


Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA CLARITA
N-S Direction: SAND CANYON ROAD
E-W Direction: LOST CANYON ROAD

File Name : H1803073
Site Code : 00000000
Start Date : 3/28/2018
Page No : 3

	SAND CANYON ROAD Southbound				LOST CANYON ROAD Westbound				SAND CANYON ROAD Northbound				LOST CANYON ROAD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:00																	
16:00	**5**	**96**	**12**	**113**	2	0	0	2	2	99	**1**	102	**1**	0	**10**	**11**	**228**
16:15	3	73	3	79	1	**1**	**1**	3	2	**102**	1	105	0	**1**	9	10	197
16:30	2	71	5	78	**9**	1	0	**10**	**5**	101	0	**106**	0	0	7	7	201
16:45	2	70	3	75	3	0	0	3	3	94	0	97	0	0	3	3	178
Total Volume	12	310	23	345	15	2	1	18	12	396	2	410	1	1	29	31	804
% App. Total	3.5	89.9	6.7		83.3	11.1	5.6		2.9	96.6	0.5		3.2	3.2	93.5		
PHF	.600	.807	.479	.763	.417	.500	.250	.450	.600	.971	.500	.967	.250	.250	.725	.705	.882



Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA CLARITA
N-S Direction: SAND CANYON ROAD
E-W Direction: ROBINSON RANCH ROAD

File Name : h1803074
Site Code : 00000000
Start Date : 3/28/2018

Groups Printed- Turning Movements

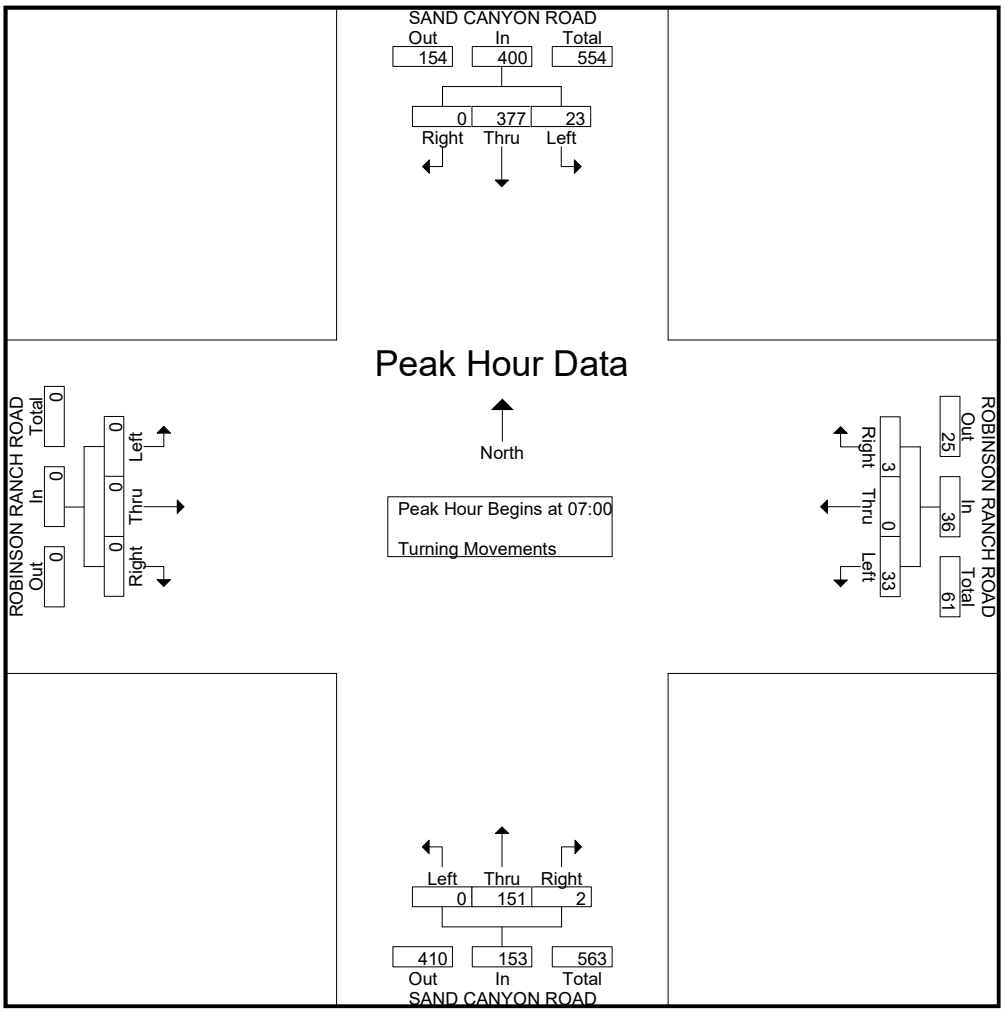
	SAND CANYON ROAD Southbound			ROBINSON RANCH ROAD Westbound			SAND CANYON ROAD Northbound			ROBINSON RANCH ROAD Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00	0	121	5	0	0	8	0	28	0	0	0	0	162
07:15	0	96	6	1	0	7	0	39	0	0	0	0	149
07:30	0	81	6	2	0	7	0	40	0	0	0	0	136
07:45	0	79	6	0	0	11	2	44	0	0	0	0	142
Total	0	377	23	3	0	33	2	151	0	0	0	0	589
08:00	0	67	2	0	0	5	0	50	0	0	0	0	124
08:15	0	61	7	0	0	6	0	68	0	0	0	0	142
08:30	0	63	7	1	0	9	0	60	0	0	0	0	140
08:45	1	55	8	3	0	3	2	62	0	0	0	1	135
Total	1	246	24	4	0	23	2	240	0	0	0	1	541
*** BREAK ***													
16:00	0	66	9	0	0	3	0	68	0	0	1	1	148
16:15	0	64	10	0	0	3	1	88	0	0	0	0	166
16:30	0	62	13	3	0	10	0	101	0	0	0	0	189
16:45	0	51	10	4	0	7	1	77	0	0	0	1	151
Total	0	243	42	7	0	23	2	334	0	0	1	2	654
17:00	0	65	4	1	0	6	0	90	0	0	0	0	166
17:15	0	72	4	1	0	4	1	88	0	0	0	0	170
17:30	0	66	6	0	0	8	1	100	0	0	0	0	181
17:45	0	55	6	0	0	4	2	76	0	0	0	2	145
Total	0	258	20	2	0	22	4	354	0	0	0	2	662
Grand Total	1	1124	109	16	0	101	10	1079	0	0	1	5	2446
Apprch %	0.1	91.1	8.8	13.7	0	86.3	0.9	99.1	0	0	16.7	83.3	
Total %	0	46	4.5	0.7	0	4.1	0.4	44.1	0	0	0	0.2	

Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA CLARITA
N-S Direction: SAND CANYON ROAD
E-W Direction: ROBINSON RANCH ROAD

File Name : h1803074
Site Code : 00000000
Start Date : 3/28/2018

	SAND CANYON ROAD Southbound				ROBINSON RANCH ROAD Westbound				SAND CANYON ROAD Northbound				ROBINSON RANCH ROAD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	0	**121**	5	**126**	0	0	8	8	0	28	0	28	0	0	0	0	**162**
07:15	0	96	**6**	102	1	0	7	8	0	39	0	39	0	0	0	0	149
07:30	0	81	6	87	**2**	0	7	9	0	40	0	40	0	0	0	0	136
07:45	0	79	6	85	0	0	**11**	**11**	**2**	**44**	0	**46**	0	0	0	0	142
Total Volume	0	377	23	400	3	0	33	36	2	151	0	153	0	0	0	0	589
% App. Total	0	94.2	5.8		8.3	0	91.7		1.3	98.7	0		0	0	0		
PHF	.000	.779	.958	.794	.375	.000	.750	.818	.250	.858	.000	.832	.000	.000	.000	.000	.909

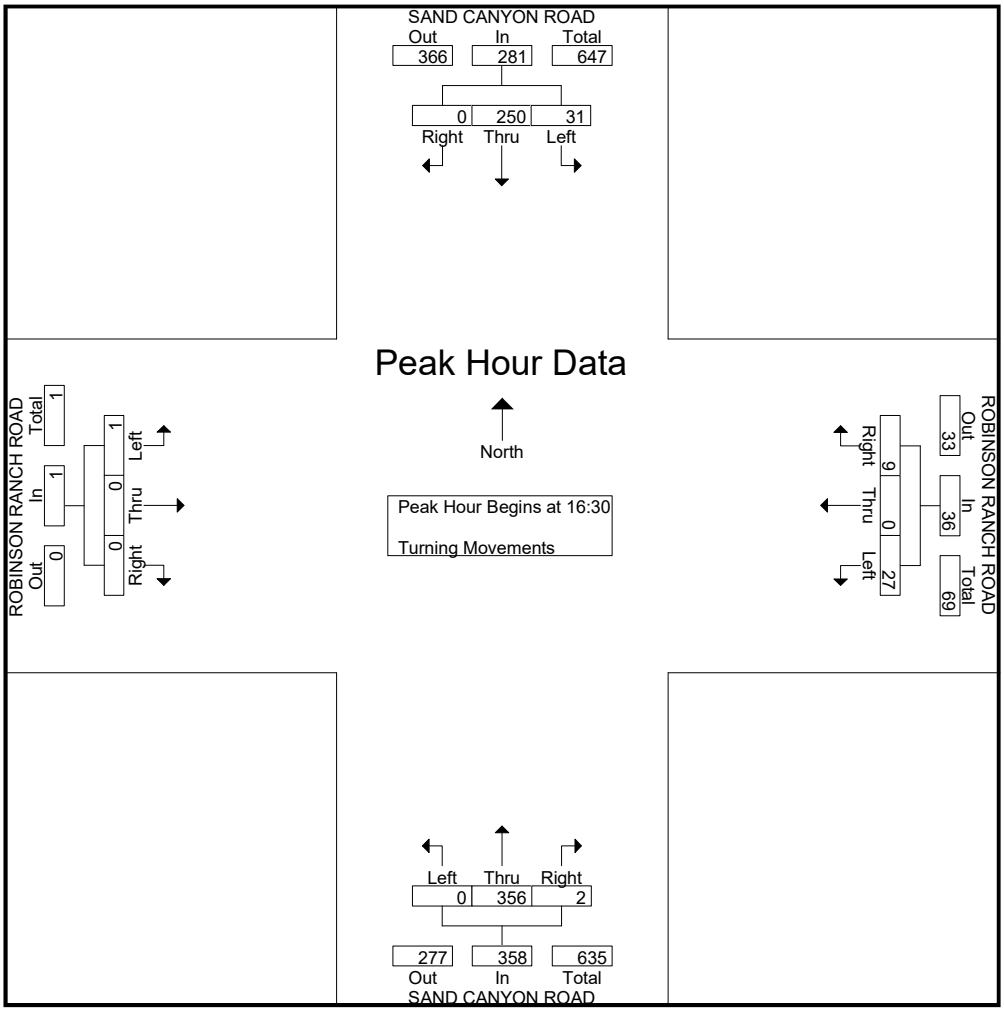


Transportation Studies, Inc.
2640 Walnut Avenue, Suite L
Tustin, CA. 92780

City: SANTA CLARITA
N-S Direction: SAND CANYON ROAD
E-W Direction: ROBINSON RANCH ROAD

File Name : h1803074
Site Code : 00000000
Start Date : 3/28/2018

	SAND CANYON ROAD Southbound				ROBINSON RANCH ROAD Westbound				SAND CANYON ROAD Northbound				ROBINSON RANCH ROAD Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:30																	
16:30	0	62	**13**	75	3	0	**10**	**13**	0	**101**	0	**101**	0	0	0	0	**189**
16:45	0	51	10	61	**4**	0	7	11	**1**	77	0	78	0	0	**1**	**1**	151
17:00	0	65	4	69	1	0	6	7	0	90	0	90	0	0	0	0	166
17:15	0	**72**	4	**76**	1	0	4	5	1	88	0	89	0	0	0	0	170
Total Volume	0	250	31	281	9	0	27	36	2	356	0	358	0	0	1	1	676
% App. Total	0	89	11		25	0	75		0.6	99.4	0		0	0	100		
PHF	.000	.868	.596	.924	.563	.000	.675	.692	.500	.881	.000	.886	.000	.000	.250	.250	.894



Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : SAND CANYON ROAD — Site: SANTA CLARIT

Segment : N/O SOLEDAD CANYON RD — Date: 03/28/18

Client : STANTEC — Day: Wednesday

Interval	SB				NB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	3	14	65	233	12	45	46	225	15	59	111	458
12:15	4		60		20		52		24		112	
12:30	5		56		7		59		12		115	
12:45	2		52		6		68		8		120	
01:00	3	17	57	237	7	20	59	230	10	37	116	467
01:15	6		58		6		54		12		112	
01:30	6		58		2		60		8		118	
01:45	2		64		5		57		7		121	
02:00	1	12	61	317	8	21	63	310	9	33	124	627
02:15	3		72		6		69		9		141	
02:30	3		71		5		88		8		159	
02:45	5		113		2		90		7		203	
03:00	8	33	64	259	3	19	86	374	11	52	150	633
03:15	6		60		3		81		9		141	
03:30	7		63		8		119		15		182	
03:45	12		72		5		88		17		160	
04:00	9	92	64	303	4	26	86	345	13	118	150	648
04:15	17		84		5		79		22		163	
04:30	29		79		6		104		35		183	
04:45	37		76		11		76		48		152	
05:00	39	175	70	304	4	51	84	366	43	226	154	670
05:15	43		72		14		88		57		160	
05:30	41		80		12		100		53		180	
05:45	52		82		21		94		73		176	
06:00	60	258	66	244	12	84	103	375	72	342	169	619
06:15	50		58		17		102		67		160	
06:30	72		60		22		96		94		156	
06:45	76		60		33		74		109		134	
07:00	80	339	92	239	51	266	80	312	131	605	172	551
07:15	90		45		60		92		150		137	
07:30	76		49		67		76		143		125	
07:45	93		53		88		64		181		117	
08:00	113	381	36	142	82	278	70	260	195	659	106	402
08:15	106		36		62		56		168		92	
08:30	90		32		62		75		152		107	
08:45	72		38		72		59		144		97	
09:00	84	302	38	129	58	212	47	189	142	514	85	318
09:15	80		34		52		52		132		86	
09:30	72		29		48		42		120		71	
09:45	66		28		54		48		120		76	
10:00	56	217	26	77	49	194	62	138	105	411	88	215
10:15	52		17		43		27		95		44	
10:30	56		24		48		25		104		49	
10:45	53		10		54		24		107		34	
11:00	53	217	16	58	45	191	38	110	98	408	54	168
11:15	50		24		44		31		94		55	
11:30	64		8		43		22		107		30	
11:45	50		10		59		19		109		29	
Totals	2,057		2,542		1,407		3,234		3,464		5,776	
Split%	59.4		44.0		40.6		56.0					
Day Totals		4,599				4,641				9,240		
Day Splits		49.8				50.2						
Peak Hour	07:45		02:15		07:30		05:30		07:45		05:15	
Volume	402		320		299		399		696		685	
Factor	0.89		0.71		0.85		0.97		0.89		0.95	

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : SOLEDAD CANYON ROAD — Site: SANTA CLARIT

Segment : W/O SAND CANYON RD — Date: 03/28/18

Client : STANTEC — Day: Wednesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	33	101	166	700	31	97	164	666	64	198	330	1,366
12:15	33		160		36		150		69		310	
12:30	19		194		20		170		39		364	
12:45	16		180		10		182		26		362	
01:00	16	64	180	816	11	43	178	758	27	107	358	1,574
01:15	28		202		15		182		43		384	
01:30	7		212		10		206		17		418	
01:45	13		222		7		192		20		414	
02:00	7	27	210	954	15	43	184	786	22	70	394	1,740
02:15	6		218		4		198		10		416	
02:30	8		240		12		204		20		444	
02:45	6		286		12		200		18		486	
03:00	10	46	283	1,054	12	64	186	679	22	110	469	1,733
03:15	10		269		6		171		16		440	
03:30	16		252		16		162		32		414	
03:45	10		250		30		160		40		410	
04:00	13	118	283	1,153	30	185	197	783	43	303	480	1,936
04:15	31		291		51		196		82		487	
04:30	24		293		40		195		64		488	
04:45	50		286		64		195		114		481	
05:00	49	232	326	1,258	85	550	192	737	134	782	518	1,995
05:15	62		296		97		186		159		482	
05:30	64		323		190		171		254		494	
05:45	57		313		178		188		235		501	
06:00	62	328	313	1,182	228	1,197	140	570	290	1,525	453	1,752
06:15	91		301		262		148		353		449	
06:30	77		288		347		142		424		430	
06:45	98		280		360		140		458		420	
07:00	134	719	250	999	354	1,289	136	512	488	2,008	386	1,511
07:15	167		279		372		122		539		401	
07:30	204		242		234		128		438		370	
07:45	214		228		329		126		543		354	
08:00	204	764	214	764	346	1,260	101	399	550	2,024	315	1,163
08:15	193		212		306		100		499		312	
08:30	212		184		314		100		526		284	
08:45	155		154		294		98		449		252	
09:00	172	724	144	579	319	880	86	302	491	1,604	230	881
09:15	166		150		210		75		376		225	
09:30	206		141		170		65		376		206	
09:45	180		144		181		76		361		220	
10:00	166	623	118	382	176	693	52	140	342	1,316	170	522
10:15	142		90		167		43		309		133	
10:30	158		92		174		22		332		114	
10:45	157		82		176		23		333		105	
11:00	180	634	80	227	162	690	32	115	342	1,324	112	342
11:15	148		57		166		25		314		82	
11:30	137		45		188		36		325		81	
11:45	169		45		174		22		343		67	
Totals	4,380		10,068		6,991		6,447		11,371		16,515	
Split%	38.5		61.0		61.5		39.0					
Day Totals		14,448				13,438				27,886		
Day Splits		51.8				48.2						
Peak Hour	07:45		05:00		06:30		02:15		07:45		05:00	
Volume	823		1,258		1,433		788		2,118		1,995	
Factor	0.96		0.96		0.96		0.97		0.96		0.96	

* Data File : D1803051 — Printed : 4/3/2018

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : SOLEDAD CANYON ROAD — Site: SANTA CLARIT

Segment : E/O SAND CANYON RD — Date: 03/28/18

Client : STANTEC — Day: Wednesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	37	121	155	660	17	74	158	576	54	195	313	1,236
12:15	35		154		23		134		58		288	
12:30	19		158		26		130		45		288	
12:45	30		193		8		154		38		347	
01:00	24	74	178	723	9	25	142	580	33	99	320	1,303
01:15	18		168		8		140		26		308	
01:30	12		188		6		147		18		335	
01:45	20		189		2		151		22		340	
02:00	13	55	194	831	20	52	177	753	33	107	371	1,584
02:15	9		201		6		201		15		402	
02:30	24		218		12		195		36		413	
02:45	9		218		14		180		23		398	
03:00	23	81	229	991	20	105	176	608	43	186	405	1,599
03:15	14		274		21		146		35		420	
03:30	24		264		30		138		54		402	
03:45	20		224		34		148		54		372	
04:00	40	256	341	1,474	52	298	163	640	92	554	504	2,114
04:15	57		400		76		132		133		532	
04:30	66		369		64		179		130		548	
04:45	93		364		106		166		199		530	
05:00	90	341	437	1,690	104	758	169	679	194	1,099	606	2,369
05:15	96		391		152		186		248		577	
05:30	87		435		222		164		309		599	
05:45	68		427		280		160		348		587	
06:00	52	231	384	1,270	322	1,346	133	566	374	1,577	517	1,836
06:15	47		315		316		164		363		479	
06:30	62		293		382		122		444		415	
06:45	70		278		326		147		396		425	
07:00	164	748	253	917	368	1,214	132	452	532	1,962	385	1,369
07:15	186		237		345		96		531		333	
07:30	202		212		227		124		429		336	
07:45	196		215		274		100		470		315	
08:00	220	885	205	741	300	1,121	82	315	520	2,006	287	1,056
08:15	208		194		302		96		510		290	
08:30	229		174		279		75		508		249	
08:45	228		168		240		62		468		230	
09:00	191	714	140	552	244	733	68	274	435	1,447	208	826
09:15	185		146		161		70		346		216	
09:30	168		136		152		76		320		212	
09:45	170		130		176		60		346		190	
10:00	141	600	107	360	166	640	42	184	307	1,240	149	544
10:15	151		86		156		37		307		123	
10:30	156		80		154		52		310		132	
10:45	152		87		164		53		316		140	
11:00	162	640	54	208	140	606	28	99	302	1,246	82	307
11:15	173		59		158		24		331		83	
11:30	161		41		162		18		323		59	
11:45	144		54		146		29		290		83	
Totals	4,746		10,417		6,972		5,726		11,718		16,143	
Split%	40.5		64.5		59.5		35.5					
Day Totals		15,163				12,698				27,861		
Day Splits		54.4				45.6						
Peak Hour	08:00		05:00		06:30		02:00		07:45		05:00	
Volume	885		1,690		1,421		753		2,008		2,369	
Factor	0.97		0.97		0.93		0.94		0.97		0.98	

* Data File : D1803052 — Printed : 4/2/2018

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : SOLEDAD CANYON ROAD — Site: SANTA CLARIT

Segment : E/O SR-14 WB RAMPS — Date: 03/28/18

Client : STANTEC — Day: Wednesday

Interval	EB				WB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	32	90	100	470	11	46	144	518	43	136	244	988
12:15	23		116		14		124		37		240	
12:30	18		120		13		123		31		243	
12:45	17		134		8		127		25		261	
01:00	17	55	127	613	3	18	122	504	20	73	249	1,117
01:15	16		149		8		113		24		262	
01:30	7		163		4		136		11		299	
01:45	15		174		3		133		18		307	
02:00	4	26	159	724	17	40	138	673	21	66	297	1,397
02:15	7		166		6		204		13		370	
02:30	9		197		7		178		16		375	
02:45	6		202		10		153		16		355	
03:00	5	19	182	868	10	59	152	530	15	78	334	1,398
03:15	3		212		10		126		13		338	
03:30	6		256		16		118		22		374	
03:45	5		218		23		134		28		352	
04:00	4	19	242	1,077	41	247	150	538	45	266	392	1,615
04:15	6		291		55		110		61		401	
04:30	4		272		59		152		63		424	
04:45	5		272		92		126		97		398	
05:00	10	59	302	1,197	150	899	127	530	160	958	429	1,727
05:15	14		289		209		138		223		427	
05:30	20		288		248		125		268		413	
05:45	15		318		292		140		307		458	
06:00	18	106	310	1,215	296	1,153	98	488	314	1,259	408	1,703
06:15	22		317		286		136		308		453	
06:30	30		292		312		116		342		408	
06:45	36		296		259		138		295		434	
07:00	74	372	258	967	314	1,129	114	404	388	1,501	372	1,371
07:15	94		253		301		82		395		335	
07:30	114		230		234		110		348		340	
07:45	90		226		280		98		370		324	
08:00	89	324	198	738	277	1.021	80	282	366	1.345	278	1.020
08:15	66		208		272		85		338		293	
08:30	81		176		252		63		333		239	
08:45	88		156		220		54		308		210	
09:00	74	356	148	534	218	659	64	221	292	1,015	212	755
09:15	84		144		141		49		225		193	
09:30	96		124		148		56		244		180	
09:45	102		118		152		52		254		170	
10:00	72	357	104	350	168	573	36	140	240	930	140	490
10:15	79		80		144		36		223		116	
10:30	98		88		129		37		227		125	
10:45	108		78		132		31		240		109	
11:00	98	424	53	196	108	496	23	72	206	920	76	268
11:15	126		49		126		19		252		68	
11:30	102		42		138		14		240		56	
11:45	98		52		124		16		222		68	
Totals	2,207		8,949		6,340		4,900		8,547		13,849	
Split%	25.8		64.6		74.2		35.4					
Day Totals		11,156				11,240				22,396		
Day Splits		49.8				50.2						
Peak Hour	10:45		05:45		05:45		02:15		07:00		05:30	
Volume	434		1,237		1,186		687		1,501		1,732	
Factor	0.86		0.97		0.95		0.84		0.95		0.95	

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L
Tustin, CA. 92780

Location : SAND CANYON ROAD
Segment : S/O SOLEDAD CANYON RD
Client : STANTEC

Site: SANTA CLARIT
Date: 03/28/18
Day: Wednesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	40	135	161	648	19	64	103	409	59	199	264	1,057
12:15	50		150		18		94		68		244	
12:30	20		167		12		119		32		286	
12:45	25		170		15		93		40		263	
01:00	21	67	175	720	10	38	126	494	31	105	301	1,214
01:15	12		173		14		111		26		284	
01:30	11		200		4		135		15		335	
01:45	23		172		10		122		33		294	
02:00	13	44	196	872	10	24	126	535	23	68	322	1,407
02:15	9		203		3		104		12		307	
02:30	17		241		6		129		23		370	
02:45	5		232		5		176		10		408	
03:00	13	43	239	1,109	10	29	204	625	23	72	443	1,734
03:15	9		303		8		168		17		471	
03:30	11		322		9		125		20		447	
03:45	10		245		2		128		12		373	
04:00	18	101	240	1,022	11	83	155	555	29	184	395	1,577
04:15	24		270		17		128		41		398	
04:30	26		268		22		126		48		394	
04:45	33		244		33		146		66		390	
05:00	34	155	268	1,086	32	348	145	620	66	503	413	1,706
05:15	40		242		70		152		110		394	
05:30	33		291		83		176		116		467	
05:45	48		285		163		147		211		432	
06:00	40	212	264	1,102	190	770	119	513	230	982	383	1,615
06:15	50		271		202		124		252		395	
06:30	57		284		202		133		259		417	
06:45	65		283		176		137		241		420	
07:00	92	445	228	864	146	571	138	494	238	1,016	366	1,358
07:15	109		234		154		132		263		366	
07:30	109		210		139		105		248		315	
07:45	135		192		132		119		267		311	
08:00	154	710	221	764	132	596	98	399	286	1,306	319	1,163
08:15	180		176		184		115		364		291	
08:30	185		196		186		103		371		299	
08:45	191		171		94		83		285		254	
09:00	150	531	149	571	83	380	77	342	233	911	226	913
09:15	133		151		95		88		228		239	
09:30	122		143		107		94		229		237	
09:45	126		128		95		83		221		211	
10:00	132	566	119	386	94	369	62	209	226	935	181	595
10:15	134		89		86		52		220		141	
10:30	159		84		95		53		254		137	
10:45	141		94		94		42		235		136	
11:00	160	635	71	253	106	390	44	129	266	1,025	115	382
11:15	148		67		84		37		232		104	
11:30	174		53		90		22		264		75	
11:45	153		62		110		26		263		88	
Totals	3,644		9,397		3,662		5,324		7,306		14,721	
Split%	49.9		63.8		50.1		36.2					
Day Totals		13,041				8,986				22,027		
Day Splits		59.2				40.8						
Peak Hour	08:00		05:30		06:00		02:30		08:00		02:45	
Volume	710		1,111		770		677		1,306		1,769	
Factor	0.93		0.95		0.95		0.83		0.88		0.94	

* Data File : D1803054

Printed : 4/3/2018

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : SAND CANYON ROAD
Segment : N/O LOST CANYON RD
Client : STANTEC

Site: SANTA CLARIT
Date: 03/28/18
Day: Wednesday

Interval	NB				SB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	11	30	100	335	4	14	70	303	15	44	170	638
12:15	11		72		3		70		14		142	
12:30	4		80		1		86		5		166	
12:45	4		83		6		77		10		160	
01:00	5	17	96	338	8	24	78	325	13	41	174	663
01:15	5		93		8		72		13		165	
01:30	2		74		3		76		5		150	
01:45	5		75		5		99		10		174	
02:00	3	6	79	353	5	9	86	378	8	15	165	731
02:15	1		86		2		80		3		166	
02:30	0		97		2		94		2		191	
02:45	2		91		0		118		2		209	
03:00	2	9	118	589	1	7	158	410	3	16	276	999
03:15	1		202		2		106		3		308	
03:30	2		171		3		74		5		245	
03:45	4		98		1		72		5		170	
04:00	9	52	92	441	2	17	101	333	11	69	193	774
04:15	8		117		2		84		10		201	
04:30	17		128		3		78		20		206	
04:45	18		104		10		70		28		174	
05:00	17	60	112	436	15	260	94	341	32	320	206	777
05:15	17		104		36		88		53		192	
05:30	9		106		67		94		76		200	
05:45	17		114		142		65		159		179	
06:00	16	82	106	412	151	650	72	332	167	732	178	744
06:15	19		104		178		70		197		174	
06:30	23		90		163		88		186		178	
06:45	24		112		158		102		182		214	
07:00	51	236	96	289	120	422	104	342	171	658	200	631
07:15	57		70		100		101		157		171	
07:30	66		68		110		68		176		136	
07:45	62		55		92		69		154		124	
08:00	75	537	60	190	100	551	66	246	175	1,088	126	436
08:15	134		47		198		64		332		111	
08:30	175		58		158		62		333		120	
08:45	153		25		95		54		248		79	
09:00	102	351	29	150	52	262	59	222	154	613	88	372
09:15	82		48		70		64		152		112	
09:30	83		36		72		56		155		92	
09:45	84		37		68		43		152		80	
10:00	76	326	27	71	58	239	29	99	134	565	56	170
10:15	74		12		61		22		135		34	
10:30	100		20		52		22		152		42	
10:45	76		12		68		26		144		38	
11:00	98	368	4	27	68	268	22	61	166	636	26	88
11:15	80		6		70		16		150		22	
11:30	98		8		62		16		160		24	
11:45	92		9		68		7		160		16	
Totals	2,074		3,631		2,723		3,392		4,797		7,023	
Split%	43.2		51.7		56.8		48.3					
Day Totals		5,705				6,115				11,820		
Day Splits		48.3				51.7						
Peak Hour	08:15		03:00		06:00		02:30		08:00		02:45	
Volume	564		589		650		476		1,088		1,038	
Factor	0.81		0.73		0.91		0.75		0.82		0.84	

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L

Tustin, CA. 92780

Location : SAND CANYON ROAD — Site: SANTA CLARIT

Segment : S/O LOST CANYON ROAD — Date: 03/28/18

Client : STANTEC — Day: Wednesday

Interval	SB				NB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	4	12	59	272	13	30	82	284	17	42	141	556
12:15	2		60		10		64		12		124	
12:30	1		82		4		66		5		148	
12:45	5		71		3		72		8		143	
01:00	6	20	66	267	5	12	83	275	11	32	149	542
01:15	6		58		3		72		9		130	
01:30	2		61		1		64		3		125	
01:45	6		82		3		56		9		138	
02:00	3	7	72	274	2	4	70	322	5	11	142	596
02:15	2		63		1		78		3		141	
02:30	2		75		0		82		2		157	
02:45	0		64		1		92		1		156	
03:00	0	5	82	309	2	8	80	356	2	13	162	665
03:15	2		86		0		124		2		210	
03:30	2		73		4		70		6		143	
03:45	1		68		2		82		3		150	
04:00	4	20	86	311	10	44	76	387	14	64	162	698
04:15	2		86		9		106		11		192	
04:30	3		76		10		113		13		189	
04:45	11		63		15		92		26		155	
05:00	15	251	96	318	15	46	99	397	30	297	195	715
05:15	31		78		12		102		43		180	
05:30	73		86		7		102		80		188	
05:45	132		58		12		94		144		152	
06:00	143	639	65	308	10	67	95	371	153	706	160	679
06:15	178		65		18		94		196		159	
06:30	172		84		22		86		194		170	
06:45	146		94		17		96		163		190	
07:00	122	396	96	302	37	192	84	239	159	588	180	541
07:15	96		91		50		62		146		153	
07:30	100		53		56		56		156		109	
07:45	78		62		49		37		127		99	
08:00	58	302	52	217	68	295	45	164	126	597	97	381
08:15	78		58		78		43		156		101	
08:30	86		58		79		52		165		110	
08:45	80		49		70		24		150		73	
09:00	46	230	52	197	88	300	28	141	134	530	80	338
09:15	60		59		72		46		132		105	
09:30	62		48		66		30		128		78	
09:45	62		38		74		37		136		75	
10:00	52	196	27	88	68	273	20	58	120	469	47	146
10:15	50		18		51		12		101		30	
10:30	44		17		90		16		134		33	
10:45	50		26		64		10		114		36	
11:00	61	236	16	53	78	298	3	23	139	534	19	76
11:15	64		15		64		5		128		20	
11:30	53		14		82		8		135		22	
11:45	58		8		74		7		132		15	
Totals	2,314		2,916		1,569		3,017		3,883		5,933	
Split%	59.6		49.1		40.4		50.9					
Day Totals		5,230				4,586				9,816		
Day Splits		53.3				46.7						
Peak Hour	06:00		06:30		08:15		04:15		06:15		04:15	
Volume	639		365		315		410		712		731	
Factor	0.90		0.95		0.89		0.91		0.91		0.94	

Transportation Studies, Inc.

2640 Walnut Avenue, Suite L
Tustin, CA. 92780

Location : SAND CANYON ROAD
Segment : S/O ROBINSON RANCH RD
Client : STANTEC

Site: SANTA CLARIT
Date: 03/28/18
Day: Wednesday

Interval	SB				NB				Combined			
Begin	AM		PM		AM		PM		AM		PM	
12:00	0	8	40	163	8	24	45	161	8	32	85	324
12:15	2		42		8		38		10		80	
12:30	0		44		2		26		2		70	
12:45	6		37		6		52		12		89	
01:00	3	13	42	150	1	5	62	173	4	18	104	323
01:15	4		32		1		42		5		74	
01:30	2		27		1		37		3		64	
01:45	4		49		2		32		6		81	
02:00	1	3	37	149	3	5	45	178	4	8	82	327
02:15	2		38		1		35		3		73	
02:30	0		44		0		48		0		92	
02:45	0		30		1		50		1		80	
03:00	0	4	47	176	1	6	49	207	1	10	96	383
03:15	1		45		0		58		1		103	
03:30	2		42		3		44		5		86	
03:45	1		42		2		56		3		98	
04:00	3	17	48	168	4	22	50	269	7	39	98	437
04:15	2		48		5		80		7		128	
04:30	1		40		7		75		8		115	
04:45	11		32		6		64		17		96	
05:00	14	240	53	186	9	21	78	300	23	261	131	486
05:15	30		39		6		72		36		111	
05:30	72		56		2		86		74		142	
05:45	124		38		4		64		128		102	
06:00	145	633	35	149	4	40	78	268	149	673	113	417
06:15	172		31		12		70		184		101	
06:30	176		40		12		52		188		92	
06:45	140		43		12		68		152		111	
07:00	116	340	46	153	23	111	63	172	139	451	109	325
07:15	88		46		27		37		115		83	
07:30	77		30		28		37		105		67	
07:45	59		31		33		35		92		66	
08:00	51	189	32	106	42	165	30	95	93	354	62	201
08:15	50		26		40		25		90		51	
08:30	44		28		46		28		90		56	
08:45	44		20		37		12		81		32	
09:00	24	115	14	86	40	155	16	52	64	270	30	138
09:15	25		30		38		14		63		44	
09:30	36		23		35		12		71		35	
09:45	30		19		42		10		72		29	
10:00	32	113	18	51	38	140	8	26	70	253	26	77
10:15	28		9		27		6		55		15	
10:30	22		8		47		7		69		15	
10:45	31		16		28		5		59		21	
11:00	28	131	10	30	44	176	3	16	72	307	13	46
11:15	40		7		38		3		78		10	
11:30	27		7		44		6		71		13	
11:45	36		6		50		4		86		10	
Totals	1,806		1,567		870		1,917		2,676		3,484	
Split%	67.5		45.0		32.5		55.0					
Day Totals		3,373				2,787				6,160		
Day Splits		54.8				45.2						
Peak Hour	06:00		05:00		11:00		04:45		06:00		05:00	
Volume	633		186		176		300		673		486	
Factor	0.90		0.83		0.88		0.87		0.89		0.86	

Appendix B INTERSECTION LOS WORKSHEETS

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	324	543	282	844	260	26
Future Volume (vph)	324	543	282	844	260	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	185		0	0
Storage Lanes		1	1		2	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.95
Frt		0.850			0.986	
Flt Protected			0.950		0.957	
Satd. Flow (prot)	3539	1583	1770	3539	3410	0
Flt Permitted			0.950		0.957	
Satd. Flow (perm)	3539	1583	1770	3539	3410	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		313			7	
Link Speed (mph)	50			50	50	
Link Distance (ft)	286			1136	293	
Travel Time (s)	3.9			15.5	4.0	
Lane Group Flow (vph)	360	603	313	938	318	0
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6		2		
Total Split (s)	46.0	66.0	63.0	109.0	66.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	24.8	71.7	91.3	122.1	40.9	
Actuated g/C Ratio	0.14	0.41	0.52	0.70	0.23	
v/c Ratio	0.72	0.72	0.34	0.38	0.40	
Control Delay	58.0	13.5	29.0	12.7	55.1	
Queue Delay	0.4	5.2	0.0	0.1	0.0	
Total Delay	58.4	18.6	29.0	12.8	55.1	
LOS	E	B	C	B	E	
Approach Delay	33.5			16.8	55.1	
Approach LOS	C			B	E	

Intersection Summary

Area Type: Other
Cycle Length: 175
Actuated Cycle Length: 175
Offset: 4.3 (2%), Referenced to phase 2:WBT and 5:WBL, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 28.0 Intersection LOS: C
Intersection Capacity Utilization 59.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: SR-14 SB Ramps & Soledad Canyon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	0	187	0	0	0	0	418	69	171	466	0
Future Volume (vph)	260	0	187	0	0	0	0	418	69	171	466	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		65	300		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950	0.950								0.950		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted	0.950	0.950								0.362		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	3539	1583	674	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			213						69			
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		476			387			434			850	
Travel Time (s)		6.5			5.3			5.9			11.6	
Lane Group Flow (vph)	147	148	213	0	0	0	0	475	78	194	530	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4	4						6		5	2	
Permitted Phases			4						6	2		
Total Split (s)	45.0	45.0	45.0					45.0	45.0	23.0	68.0	
Total Lost Time (s)	5.4	5.4	5.4					6.2	6.2	4.7	6.2	
Act Effct Green (s)	14.3	14.3	14.3					16.8	16.8	35.5	33.9	
Actuated g/C Ratio	0.24	0.24	0.24					0.28	0.28	0.59	0.56	
v/c Ratio	0.37	0.37	0.40					0.48	0.16	0.32	0.27	
Control Delay	23.3	23.4	5.8					21.4	8.2	8.5	8.1	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	23.3	23.4	5.8					21.4	8.2	8.5	8.1	
LOS	C	C	A					C	A	A	A	
Approach Delay		16.0						19.6			8.2	
Approach LOS		B						B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 113			
Actuated Cycle Length: 60.6			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.48			
Intersection Signal Delay: 13.9		Intersection LOS: B	
Intersection Capacity Utilization 42.9%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Sand Canyon & SR-14 NB Ramps

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	426	282	265	744	82	226	134	294	152	124	120
Future Volume (vph)	91	426	282	265	744	82	226	134	294	152	124	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		190	0		138	150		200	160		190
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	0.88	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.926	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3277	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3277	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			293			94			258		117	
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		555			286			850			957	
Travel Time (s)		7.6			3.9			11.6			13.1	
Lane Group Flow (vph)	97	453	300	282	791	87	240	143	313	162	260	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			
Total Split (s)	29.0	48.0	48.0	62.0	81.0	81.0	35.0	35.0	62.0	30.0	30.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	14.9	62.1	62.1	56.0	103.2	103.2	18.9	18.9	74.9	14.0	14.0	
Actuated g/C Ratio	0.09	0.35	0.35	0.32	0.59	0.59	0.11	0.11	0.43	0.08	0.08	
v/c Ratio	0.65	0.36	0.40	0.50	0.38	0.09	0.65	0.71	0.23	0.59	0.70	
Control Delay	96.3	44.2	6.5	55.8	22.1	3.4	82.8	94.2	3.8	86.0	52.9	
Queue Delay	0.0	0.1	0.3	9.8	0.5	0.0	0.0	0.0	0.0	0.1	0.0	
Total Delay	96.3	44.2	6.8	65.6	22.6	3.4	82.8	94.2	3.8	86.1	52.9	
LOS	F	D	A	E	C	A	F	F	A	F	D	
Approach Delay		36.9			31.6			49.6			65.7	
Approach LOS		D			C			D			E	

Intersection Summary

Area Type: Other
Cycle Length: 175
Actuated Cycle Length: 175
Offset: 0 (0%), Referenced to phase 1:WBL and 6:WBT, Start of Yellow, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 41.7 Intersection LOS: D
Intersection Capacity Utilization 60.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Sand Canyon & Soledad Canyon

Intersection	
Intersection Delay, s/veh	17.8
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	259	3	32	2	6	16	39	266	2	17	246	293
Future Vol, veh/h	259	3	32	2	6	16	39	266	2	17	246	293
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	282	3	35	2	7	17	42	289	2	18	267	318
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	21.4	10.5	20.1	15
HCM LOS	C	B	C	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	13%	88%	25%	0%	6%	0%
Vol Thru, %	87%	1%	75%	0%	94%	0%
Vol Right, %	1%	11%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	307	294	8	16	263	293
LT Vol	39	259	2	0	17	0
Through Vol	266	3	6	0	246	0
RT Vol	2	32	0	16	0	293
Lane Flow Rate	334	320	9	17	286	318
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.618	0.627	0.02	0.035	0.511	0.504
Departure Headway (Hd)	6.672	7.059	8.123	7.271	6.439	5.694
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	537	508	443	495	555	627
Service Time	4.759	5.135	5.823	4.971	4.226	3.48
HCM Lane V/C Ratio	0.622	0.63	0.02	0.034	0.515	0.507
HCM Control Delay	20.1	21.4	11	10.2	15.8	14.2
HCM Lane LOS	C	C	B	B	C	B
HCM 95th-tile Q	4.2	4.3	0.1	0.1	2.9	2.8

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	3	151	2	23	377
Future Vol, veh/h	33	3	151	2	23	377
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	3	164	2	25	410

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	625	165	0	0	166	0
Stage 1	165	-	-	-	-	-
Stage 2	460	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	449	879	-	-	1412	-
Stage 1	864	-	-	-	-	-
Stage 2	636	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	439	879	-	-	1412	-
Mov Cap-2 Maneuver	439	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	636	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	458	1412	-
HCM Lane V/C Ratio	-	-	0.085	0.018	-
HCM Control Delay (s)	-	-	13.6	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1219	427	124	409	214	36
Future Volume (vph)	1219	427	124	409	214	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	185		0	0
Storage Lanes		1	1		2	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.95
Frt		0.850			0.978	
Flt Protected			0.950		0.959	
Satd. Flow (prot)	3539	1583	1770	3539	3389	0
Flt Permitted			0.950		0.959	
Satd. Flow (perm)	3539	1583	1770	3539	3389	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		371			9	
Link Speed (mph)	50			50	50	
Link Distance (ft)	286			1136	293	
Travel Time (s)	3.9			15.5	4.0	
Lane Group Flow (vph)	1283	449	131	431	263	0
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6		2		
Total Split (s)	109.0	34.0	32.0	141.0	34.0	
Total Lost Time (s)	6.0	6.0	4.5	6.0	6.0	
Act Effct Green (s)	121.5	146.3	18.2	144.2	18.8	
Actuated g/C Ratio	0.69	0.84	0.10	0.82	0.11	
v/c Ratio	0.52	0.32	0.71	0.15	0.71	
Control Delay	15.0	0.7	96.0	3.4	83.3	
Queue Delay	1.7	0.6	0.0	0.0	0.0	
Total Delay	16.7	1.2	96.0	3.4	83.3	
LOS	B	A	F	A	F	
Approach Delay	12.7			25.0	83.3	
Approach LOS	B			C	F	

Intersection Summary

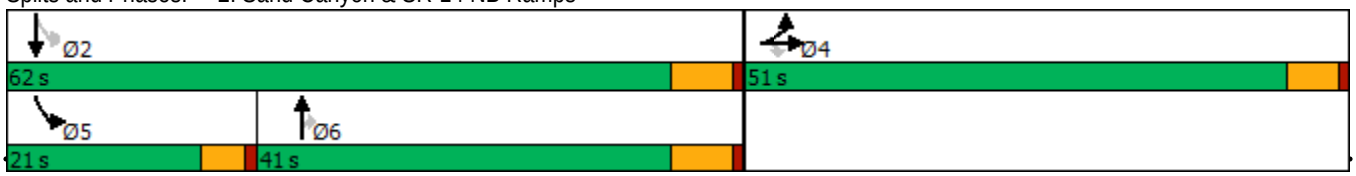
Area Type: Other
Cycle Length: 175
Actuated Cycle Length: 175
Offset: 4.3 (2%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 22.6 Intersection LOS: C
Intersection Capacity Utilization 62.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: SR-14 SB Ramps & Soledad Canyon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	709	0	341	0	0	0	0	359	305	208	335	0
Future Volume (vph)	709	0	341	0	0	0	0	359	305	208	335	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		65	300		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950	0.950								0.950		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted	0.950	0.950								0.405		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	3539	1583	754	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			359						267			
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		476			387			434			850	
Travel Time (s)		6.5			5.3			5.9			11.6	
Lane Group Flow (vph)	373	373	359	0	0	0	0	378	321	219	353	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4	4						6		5	2	
Permitted Phases			4						6	2		
Total Split (s)	51.0	51.0	51.0					41.0	41.0	21.0	62.0	
Total Lost Time (s)	5.4	5.4	5.4					6.2	6.2	4.7	6.2	
Act Effct Green (s)	24.3	24.3	24.3					17.4	17.4	37.5	35.9	
Actuated g/C Ratio	0.33	0.33	0.33					0.24	0.24	0.52	0.49	
v/c Ratio	0.66	0.66	0.47					0.45	0.55	0.38	0.20	
Control Delay	27.5	27.5	4.4					26.9	10.4	13.3	11.8	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	27.5	27.5	4.4					26.9	10.4	13.3	11.8	
LOS	C	C	A					C	B	B	B	
Approach Delay		20.0						19.3			12.3	
Approach LOS		C						B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 113			
Actuated Cycle Length: 72.6			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 18.0		Intersection LOS: B	
Intersection Capacity Utilization 63.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Sand Canyon & SR-14 NB Ramps

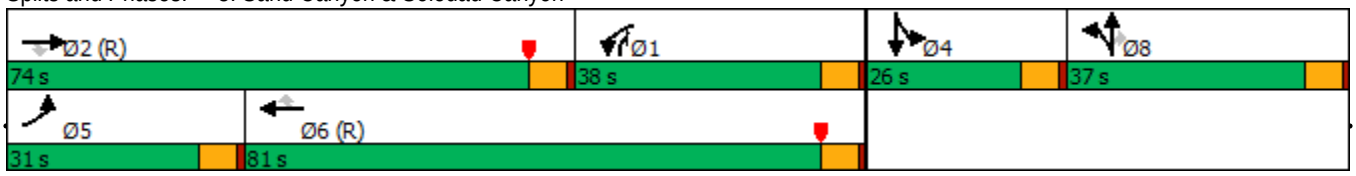


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	848	331	147	425	81	238	172	618	179	72	71
Future Volume (vph)	124	848	331	147	425	81	238	172	618	179	72	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		190	0		138	150		200	160		190
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	0.88	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.926	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3277	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3277	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			215			94			123		74	
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		555			286			850			957	
Travel Time (s)		7.6			3.9			11.6			13.1	
Lane Group Flow (vph)	129	883	345	153	443	84	248	179	644	186	149	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			
Total Split (s)	31.0	74.0	74.0	38.0	81.0	81.0	37.0	37.0	38.0	26.0	26.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	18.0	82.0	82.0	32.0	96.0	96.0	22.2	22.2	54.2	14.8	14.8	
Actuated g/C Ratio	0.10	0.47	0.47	0.18	0.55	0.55	0.13	0.13	0.31	0.08	0.08	
v/c Ratio	0.71	0.53	0.40	0.47	0.23	0.09	0.57	0.76	0.68	0.64	0.43	
Control Delay	96.0	35.6	13.3	63.1	14.7	0.2	76.3	93.1	30.9	87.7	41.3	
Queue Delay	0.0	1.9	0.7	9.6	0.7	0.0	0.0	0.0	1.2	0.0	0.0	
Total Delay	96.0	37.6	14.0	72.6	15.4	0.2	76.3	93.1	32.1	87.7	41.3	
LOS	F	D	B	E	B	A	E	F	C	F	D	
Approach Delay		37.1			26.4			52.5			67.0	
Approach LOS		D			C			D			E	

Intersection Summary

Area Type: Other
Cycle Length: 175
Actuated Cycle Length: 175
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 42.7 Intersection LOS: D
Intersection Capacity Utilization 65.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Sand Canyon & Soledad Canyon



Intersection	
Intersection Delay, s/veh	14
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	1	1	1	2	15	2	396	12	23	310	12
Future Vol, veh/h	29	1	1	1	2	15	2	396	12	23	310	12
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	1	1	1	2	16	2	417	13	24	326	13
Number of Lanes	0	1	0	0	1	1	0	1	0	0	1	1

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	2	1
HCM Control Delay	10.2	8.8	15.8	12.5
HCM LOS	B	A	C	B

Lane	NBLn1	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	0%	94%	33%	0%	7%	0%
Vol Thru, %	97%	3%	67%	0%	93%	0%
Vol Right, %	3%	3%	0%	100%	0%	100%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	410	31	3	15	333	12
LT Vol	2	29	1	0	23	0
Through Vol	396	1	2	0	310	0
RT Vol	12	1	0	15	0	12
Lane Flow Rate	432	33	3	16	351	13
Geometry Grp	6	6	7	7	7	7
Degree of Util (X)	0.611	0.06	0.006	0.025	0.495	0.015
Departure Headway (Hd)	5.095	6.653	6.676	5.795	5.081	4.341
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	708	535	533	613	708	823
Service Time	3.13	4.733	4.459	3.577	2.816	2.076
HCM Lane V/C Ratio	0.61	0.062	0.006	0.026	0.496	0.016
HCM Control Delay	15.8	10.2	9.5	8.7	12.7	7.1
HCM Lane LOS	C	B	A	A	B	A
HCM 95th-tile Q	4.2	0.2	0	0.1	2.8	0

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	27	9	356	2	31	250
Future Vol, veh/h	27	9	356	2	31	250
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	9	375	2	33	263

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	705	376	0	0	377	0
Stage 1	376	-	-	-	-	-
Stage 2	329	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	403	670	-	-	1181	-
Stage 1	694	-	-	-	-	-
Stage 2	729	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	390	670	-	-	1181	-
Mov Cap-2 Maneuver	390	-	-	-	-	-
Stage 1	671	-	-	-	-	-
Stage 2	729	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.1	0	0.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	435	1181	-
HCM Lane V/C Ratio	-	-	0.087	0.028	-
HCM Control Delay (s)	-	-	14.1	8.1	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	356	597	310	928	286	29
Future Volume (vph)	356	597	310	928	286	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	185		0	0
Storage Lanes		1	1		2	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.95
Frt		0.850			0.986	
Flt Protected			0.950		0.957	
Satd. Flow (prot)	3539	1583	1770	3539	3410	0
Flt Permitted			0.950		0.957	
Satd. Flow (perm)	3539	1583	1770	3539	3410	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		276			7	
Link Speed (mph)	50			50	50	
Link Distance (ft)	286			1136	293	
Travel Time (s)	3.9			15.5	4.0	
Lane Group Flow (vph)	396	663	344	1031	350	0
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6		2		
Total Split (s)	46.0	66.0	63.0	109.0	66.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	26.1	82.6	80.4	112.5	50.5	
Actuated g/C Ratio	0.15	0.47	0.46	0.64	0.29	
v/c Ratio	0.75	0.74	0.42	0.45	0.35	
Control Delay	60.5	15.2	36.8	17.7	48.1	
Queue Delay	0.6	7.7	0.0	0.1	0.0	
Total Delay	61.1	22.9	36.8	17.8	48.1	
LOS	E	C	D	B	D	
Approach Delay	37.2			22.5	48.1	
Approach LOS	D			C	D	

Intersection Summary

Area Type: Other
Cycle Length: 175
Actuated Cycle Length: 175
Offset: 4.3 (2%), Referenced to phase 2:WBT and 5:WBL, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 31.3 Intersection LOS: C
Intersection Capacity Utilization 64.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: SR-14 SB Ramps & Soledad Canyon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	286	0	206	0	0	0	0	460	76	188	513	0
Future Volume (vph)	286	0	206	0	0	0	0	460	76	188	513	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		65	300		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950	0.950								0.950		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted	0.950	0.950								0.329		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	3539	1583	613	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			234						69			
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		476			387			434			850	
Travel Time (s)		6.5			5.3			5.9			11.6	
Lane Group Flow (vph)	162	163	234	0	0	0	0	523	86	214	583	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4	4						6		5	2	
Permitted Phases			4						6	2		
Total Split (s)	45.0	45.0	45.0					45.0	45.0	23.0	68.0	
Total Lost Time (s)	5.4	5.4	5.4					6.2	6.2	4.7	6.2	
Act Effct Green (s)	14.8	14.8	14.8					17.7	17.7	36.9	35.3	
Actuated g/C Ratio	0.24	0.24	0.24					0.28	0.28	0.59	0.57	
v/c Ratio	0.41	0.41	0.42					0.52	0.17	0.36	0.29	
Control Delay	24.5	24.6	5.9					22.3	9.1	8.9	8.2	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	24.5	24.6	5.9					22.3	9.1	8.9	8.2	
LOS	C	C	A					C	A	A	A	
Approach Delay		16.7						20.4			8.4	
Approach LOS		B						C			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 113			
Actuated Cycle Length: 62.4			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.52			
Intersection Signal Delay: 14.5		Intersection LOS: B	
Intersection Capacity Utilization 45.0%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Sand Canyon & SR-14 NB Ramps

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	469	310	292	818	90	249	147	323	167	136	132
Future Volume (vph)	100	469	310	292	818	90	249	147	323	167	136	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		190	0		138	150		200	160		190
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	0.88	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.926	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3277	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3277	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			292			94			212		115	
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		555			286			850			957	
Travel Time (s)		7.6			3.9			11.6			13.1	
Lane Group Flow (vph)	106	499	330	311	870	96	265	156	344	178	285	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			
Total Split (s)	29.0	48.0	48.0	62.0	81.0	81.0	35.0	35.0	62.0	30.0	30.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	15.8	59.6	59.6	56.0	99.8	99.8	20.3	20.3	76.3	15.2	15.2	
Actuated g/C Ratio	0.09	0.34	0.34	0.32	0.57	0.57	0.12	0.12	0.44	0.09	0.09	
v/c Ratio	0.67	0.41	0.45	0.55	0.43	0.10	0.67	0.73	0.26	0.60	0.73	
Control Delay	96.3	47.2	9.7	53.3	21.6	3.1	82.0	93.0	6.8	84.9	57.2	
Queue Delay	0.0	0.2	0.3	9.5	0.4	0.5	0.0	0.0	0.0	0.1	0.0	
Total Delay	96.3	47.4	10.0	62.8	22.0	3.6	82.0	93.0	6.8	85.1	57.2	
LOS	F	D	A	E	C	A	F	F	A	F	E	
Approach Delay		39.7			30.6			50.4			67.9	
Approach LOS		D			C			D			E	

Intersection Summary

Area Type: Other
Cycle Length: 175
Actuated Cycle Length: 175
Offset: 0 (0%), Referenced to phase 1:WBL and 6:WBT, Start of Yellow, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 42.5 Intersection LOS: D
Intersection Capacity Utilization 64.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Sand Canyon & Soledad Canyon

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	36	3	166	2	25	415
Future Vol, veh/h	36	3	166	2	25	415
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	3	180	2	27	451

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	686	181	0	0	182	0
Stage 1	181	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	413	862	-	-	1393	-
Stage 1	850	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	402	862	-	-	1393	-
Mov Cap-2 Maneuver	402	-	-	-	-	-
Stage 1	828	-	-	-	-	-
Stage 2	606	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.6	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	419	1393	-
HCM Lane V/C Ratio	-	-	0.101	0.02	-
HCM Control Delay (s)	-	-	14.6	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1341	470	136	450	235	40
Future Volume (vph)	1341	470	136	450	235	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	185		0	0
Storage Lanes		1	1		2	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.95
Frt		0.850			0.978	
Flt Protected			0.950		0.959	
Satd. Flow (prot)	3539	1583	1770	3539	3389	0
Flt Permitted			0.950		0.959	
Satd. Flow (perm)	3539	1583	1770	3539	3389	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		336			10	
Link Speed (mph)	50			50	50	
Link Distance (ft)	286			1136	293	
Travel Time (s)	3.9			15.5	4.0	
Lane Group Flow (vph)	1412	495	143	474	289	0
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6		2		
Total Split (s)	109.0	34.0	32.0	141.0	34.0	
Total Lost Time (s)	6.0	6.0	4.5	6.0	6.0	
Act Effct Green (s)	118.8	145.1	19.4	142.7	20.3	
Actuated g/C Ratio	0.68	0.83	0.11	0.82	0.12	
v/c Ratio	0.59	0.36	0.73	0.16	0.72	
Control Delay	16.2	1.2	95.8	3.8	82.2	
Queue Delay	3.5	0.7	0.0	0.0	0.2	
Total Delay	19.7	2.0	95.8	3.8	82.4	
LOS	B	A	F	A	F	
Approach Delay	15.1			25.1	82.4	
Approach LOS	B			C	F	

Intersection Summary

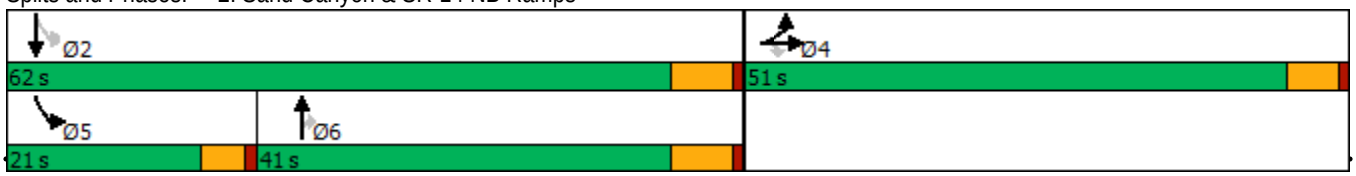
Area Type: Other
Cycle Length: 175
Actuated Cycle Length: 175
Offset: 4.3 (2%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 24.2 Intersection LOS: C
Intersection Capacity Utilization 66.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: SR-14 SB Ramps & Soledad Canyon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	780	0	375	0	0	0	0	395	336	229	369	0
Future Volume (vph)	780	0	375	0	0	0	0	395	336	229	369	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		65	300		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950	0.950								0.950		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted	0.950	0.950								0.371		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	3539	1583	691	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			395						268			
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		476			387			434			850	
Travel Time (s)		6.5			5.3			5.9			11.6	
Lane Group Flow (vph)	410	411	395	0	0	0	0	416	354	241	388	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4	4						6		5	2	
Permitted Phases			4						6	2		
Total Split (s)	51.0	51.0	51.0					41.0	41.0	21.0	62.0	
Total Lost Time (s)	5.4	5.4	5.4					6.2	6.2	4.7	6.2	
Act Effct Green (s)	27.9	27.9	27.9					19.6	19.6	40.6	39.0	
Actuated g/C Ratio	0.35	0.35	0.35					0.25	0.25	0.51	0.49	
v/c Ratio	0.69	0.69	0.49					0.48	0.60	0.44	0.22	
Control Delay	29.2	29.2	4.3					29.0	12.8	15.4	13.1	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	29.2	29.2	4.3					29.0	12.8	15.4	13.1	
LOS	C	C	A					C	B	B	B	
Approach Delay		21.1						21.6			14.0	
Approach LOS		C						C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 113			
Actuated Cycle Length: 79.2			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 19.5		Intersection LOS: B	
Intersection Capacity Utilization 68.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: Sand Canyon & SR-14 NB Ramps

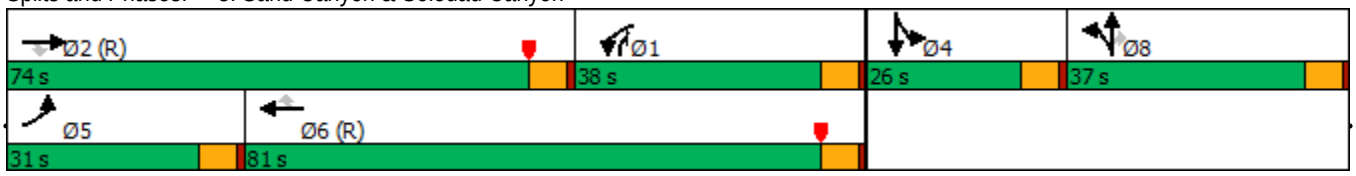


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	933	364	162	468	89	262	189	680	197	79	78
Future Volume (vph)	136	933	364	162	468	89	262	189	680	197	79	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		190	0		138	150		200	160		190
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	0.88	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3274	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3274	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			214			94			94		81	
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		555			286			850			957	
Travel Time (s)		7.6			3.9			11.6			13.1	
Lane Group Flow (vph)	142	972	379	169	488	93	273	197	708	205	163	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			
Total Split (s)	31.0	74.0	74.0	38.0	81.0	81.0	37.0	37.0	38.0	26.0	26.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	19.1	79.6	79.6	32.0	92.5	92.5	23.7	23.7	55.7	15.7	15.7	
Actuated g/C Ratio	0.11	0.45	0.45	0.18	0.53	0.53	0.14	0.14	0.32	0.09	0.09	
v/c Ratio	0.74	0.60	0.45	0.52	0.26	0.11	0.59	0.78	0.75	0.67	0.44	
Control Delay	96.9	39.1	16.3	61.6	16.2	0.7	75.7	93.6	34.3	87.6	40.8	
Queue Delay	0.0	3.8	0.8	14.7	0.7	0.5	0.0	0.0	6.8	0.6	0.0	
Total Delay	96.9	42.9	17.2	76.3	17.0	1.2	75.7	93.6	41.1	88.2	40.8	
LOS	F	D	B	E	B	A	E	F	D	F	D	
Approach Delay		41.5			28.4			57.9			67.2	
Approach LOS		D			C			E			E	

Intersection Summary

Area Type: Other
Cycle Length: 175
Actuated Cycle Length: 175
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 46.5 Intersection LOS: D
Intersection Capacity Utilization 70.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Sand Canyon & Soledad Canyon



Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	10	392	2	34	275
Future Vol, veh/h	30	10	392	2	34	275
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	11	413	2	36	289

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	775	414	0	0	415	0
Stage 1	414	-	-	-	-	-
Stage 2	361	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	366	638	-	-	1144	-
Stage 1	667	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	352	638	-	-	1144	-
Mov Cap-2 Maneuver	352	-	-	-	-	-
Stage 1	642	-	-	-	-	-
Stage 2	705	-	-	-	-	-

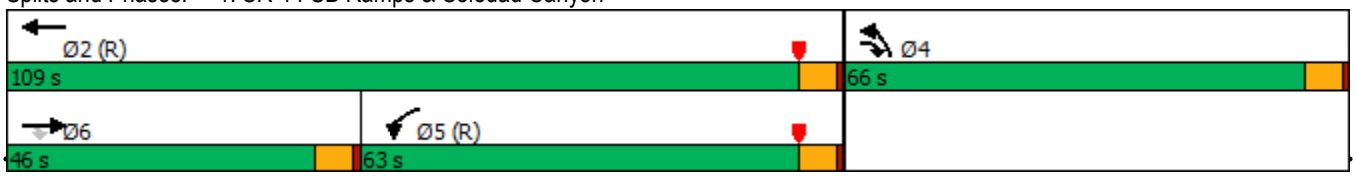
Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	396	1144	-
HCM Lane V/C Ratio	-	-	0.106	0.031	-
HCM Control Delay (s)	-	-	15.2	8.2	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	358	618	310	933	295	29
Future Volume (vph)	358	618	310	933	295	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	185		0	0
Storage Lanes		1	1		2	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	3539	1583	1770	3539	3410	0
Flt Permitted			0.950		0.956	
Satd. Flow (perm)	3539	1583	1770	3539	3410	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		276			7	
Link Speed (mph)	50			50	50	
Link Distance (ft)	286			1136	293	
Travel Time (s)	3.9			15.5	4.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	398	687	344	1037	360	0
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6		2		
Total Split (s)	46.0	66.0	63.0	109.0	66.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	26.2	84.6	78.4	110.6	52.4	
Actuated g/C Ratio	0.15	0.48	0.45	0.63	0.30	
v/c Ratio	0.75	0.76	0.43	0.46	0.35	
Control Delay	61.6	16.6	38.0	18.6	47.0	
Queue Delay	0.6	7.3	0.0	0.1	0.0	
Total Delay	62.2	23.9	38.0	18.7	47.0	
LOS	E	C	D	B	D	
Approach Delay	38.0			23.5	47.0	
Approach LOS	D			C	D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 175			
Actuated Cycle Length: 175			
Offset: 4.3 (2%), Referenced to phase 2:WBT and 5:WBL, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 32.0		Intersection LOS: C	
Intersection Capacity Utilization 65.4%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 1: SR-14 SB Ramps & Soledad Canyon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	286	0	261	0	0	0	0	489	80	188	541	0
Future Volume (vph)	286	0	261	0	0	0	0	489	80	188	541	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		65	300		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted	0.950	0.950								0.312		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	3539	1583	581	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			252						69			
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		476			387			434			850	
Travel Time (s)		6.5			5.3			5.9			11.6	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	162	163	297	0	0	0	0	556	91	214	615	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4	4						6		5	2	
Permitted Phases			4						6	2		
Total Split (s)	45.0	45.0	45.0					45.0	45.0	23.0	68.0	
Total Lost Time (s)	5.4	5.4	5.4					6.2	6.2	4.7	6.2	
Act Effct Green (s)	15.0	15.0	15.0					18.7	18.7	38.0	36.4	
Actuated g/C Ratio	0.24	0.24	0.24					0.29	0.29	0.60	0.57	
v/c Ratio	0.41	0.41	0.52					0.54	0.18	0.37	0.30	
Control Delay	25.2	25.3	8.9					22.4	9.4	8.9	8.3	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	25.2	25.3	8.9					22.4	9.4	8.9	8.3	
LOS	C	C	A					C	A	A	A	
Approach Delay		17.4						20.5			8.5	
Approach LOS		B						C			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 113			
Actuated Cycle Length: 63.8			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay: 14.8		Intersection LOS: B	
Intersection Capacity Utilization 45.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 2: Sand Canyon & SR-14 NB Ramps

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	469	319	306	818	90	253	149	346	167	141	132
Future Volume (vph)	100	469	319	306	818	90	253	149	346	167	141	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		190	0		138	150		200	160		190
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3284	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3284	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			300			94			212		111	
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		555			286			850			957	
Travel Time (s)		7.6			3.9			11.6			13.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	106	499	339	326	870	96	269	159	368	178	290	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			
Total Split (s)	29.0	48.0	48.0	62.0	81.0	81.0	35.0	35.0	62.0	30.0	30.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	15.8	59.0	59.0	56.0	99.2	99.2	20.5	20.5	76.5	15.5	15.5	
Actuated g/C Ratio	0.09	0.34	0.34	0.32	0.57	0.57	0.12	0.12	0.44	0.09	0.09	
v/c Ratio	0.67	0.42	0.46	0.58	0.43	0.10	0.67	0.73	0.28	0.59	0.74	
Control Delay	96.3	47.7	9.8	53.9	21.6	3.3	81.8	93.0	7.6	83.9	59.0	
Queue Delay	0.0	0.2	0.3	10.3	0.4	0.5	0.0	0.0	0.0	0.3	0.0	
Total Delay	96.3	48.0	10.1	64.2	22.0	3.7	81.8	93.0	7.6	84.3	59.0	
LOS	F	D	B	E	C	A	F	F	A	F	E	
Approach Delay		39.8			31.3			49.7			68.6	
Approach LOS		D			C			D			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 175			
Actuated Cycle Length: 175			
Offset: 0 (0%), Referenced to phase 1:WBL and 6:WBT, Start of Yellow, Master Intersection			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 42.8		Intersection LOS: D	
Intersection Capacity Utilization 65.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Sand Canyon & Soledad Canyon

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	37	166	5	112	415
Future Vol, veh/h	37	37	166	5	112	415
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	40	180	5	122	451

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	878	183	0	0	185	0
Stage 1	183	-	-	-	-	-
Stage 2	695	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	318	859	-	-	1390	-
Stage 1	848	-	-	-	-	-
Stage 2	495	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	281	859	-	-	1390	-
Mov Cap-2 Maneuver	281	-	-	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	495	-	-	-	-	-

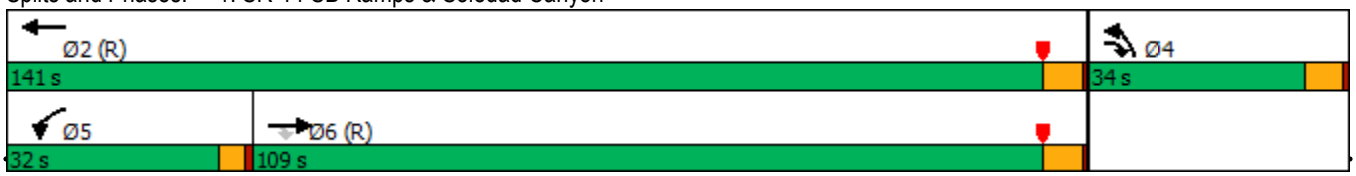
Approach	WB	NB	SB
HCM Control Delay, s	15.5	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	423	1390	-
HCM Lane V/C Ratio	-	-	0.19	0.088	-
HCM Control Delay (s)	-	-	15.5	7.8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.3	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1346	525	136	454	242	40
Future Volume (vph)	1346	525	136	454	242	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	185		0	0
Storage Lanes		1	1		2	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	3539	1583	1770	3539	3393	0
Flt Permitted			0.950		0.959	
Satd. Flow (perm)	3539	1583	1770	3539	3393	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		336			9	
Link Speed (mph)	50			50	50	
Link Distance (ft)	286			1136	293	
Travel Time (s)	3.9			15.5	4.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1417	553	143	478	297	0
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6		2		
Total Split (s)	109.0	34.0	32.0	141.0	34.0	
Total Lost Time (s)	6.0	6.0	4.5	6.0	6.0	
Act Effct Green (s)	118.0	145.1	19.4	141.9	21.1	
Actuated g/C Ratio	0.67	0.83	0.11	0.81	0.12	
v/c Ratio	0.59	0.40	0.73	0.17	0.71	
Control Delay	15.8	1.5	95.8	4.0	81.3	
Queue Delay	5.3	0.8	0.0	0.0	0.3	
Total Delay	21.1	2.3	95.8	4.0	81.6	
LOS	C	A	F	A	F	
Approach Delay	15.8			25.1	81.6	
Approach LOS	B			C	F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 175			
Actuated Cycle Length: 175			
Offset: 4.3 (2%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 24.6		Intersection LOS: C	
Intersection Capacity Utilization 66.8%		ICU Level of Service C	
Analysis Period (min) 15			

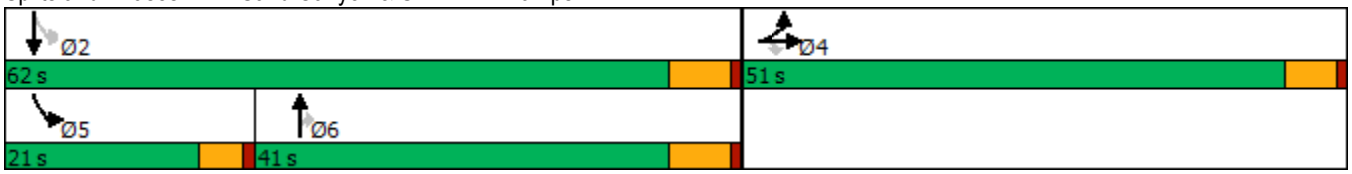
Splits and Phases: 1: SR-14 SB Ramps & Soledad Canyon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	780	0	418	0	0	0	0	469	345	229	391	0
Future Volume (vph)	780	0	418	0	0	0	0	469	345	229	391	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		65	300		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted	0.950	0.950								0.323		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	3539	1583	602	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			371						231			
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		476			387			434			850	
Travel Time (s)		6.5			5.3			5.9			11.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	410	411	440	0	0	0	0	494	363	241	412	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4	4						6		5	2	
Permitted Phases			4						6	2		
Total Split (s)	51.0	51.0	51.0					41.0	41.0	21.0	62.0	
Total Lost Time (s)	5.4	5.4	5.4					6.2	6.2	4.7	6.2	
Act Effct Green (s)	29.0	29.0	29.0					22.2	22.2	43.4	41.8	
Actuated g/C Ratio	0.35	0.35	0.35					0.27	0.27	0.52	0.50	
v/c Ratio	0.70	0.70	0.55					0.52	0.61	0.47	0.23	
Control Delay	31.1	31.2	7.3					29.3	15.8	15.7	13.1	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	31.1	31.2	7.3					29.3	15.8	15.7	13.1	
LOS	C	C	A					C	B	B	B	
Approach Delay		22.8						23.6			14.1	
Approach LOS		C						C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 113			
Actuated Cycle Length: 83.1			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 21.0		Intersection LOS: C	
Intersection Capacity Utilization 69.2%		ICU Level of Service C	
Analysis Period (min) 15			

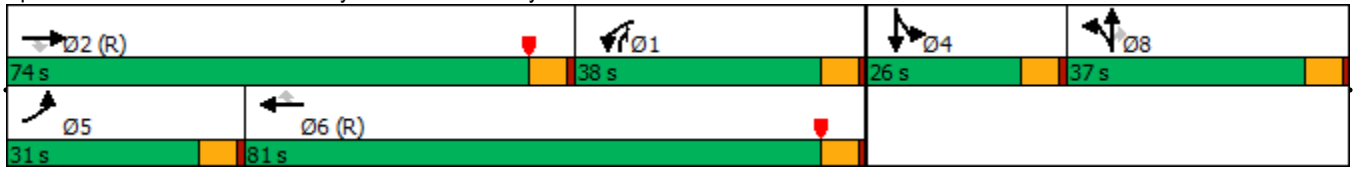
Splits and Phases: 2: Sand Canyon & SR-14 NB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	933	371	173	468	89	271	194	740	197	83	78
Future Volume (vph)	136	933	371	173	468	89	271	194	740	197	83	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		190	0		138	150		200	160		190
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3281	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3281	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			218			94			94		81	
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		555			286			850			957	
Travel Time (s)		7.6			3.9			11.6			13.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	972	386	180	488	93	282	202	771	205	167	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			
Total Split (s)	31.0	74.0	74.0	38.0	81.0	81.0	37.0	37.0	38.0	26.0	26.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	19.1	79.2	79.2	32.0	92.1	92.1	24.0	24.0	56.0	15.7	15.7	
Actuated g/C Ratio	0.11	0.45	0.45	0.18	0.53	0.53	0.14	0.14	0.32	0.09	0.09	
v/c Ratio	0.74	0.61	0.46	0.56	0.26	0.11	0.60	0.79	0.81	0.67	0.45	
Control Delay	96.9	39.4	16.5	62.3	16.2	0.6	75.7	94.0	38.0	87.6	41.9	
Queue Delay	0.0	3.8	0.9	21.1	0.7	0.5	0.0	0.0	17.8	0.9	0.0	
Total Delay	96.9	43.3	17.4	83.4	16.9	1.1	75.7	94.0	55.8	88.5	41.9	
LOS	F	D	B	F	B	A	E	F	E	F	D	
Approach Delay		41.7			30.7			66.4			67.6	
Approach LOS		D			C			E			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 175			
Actuated Cycle Length: 175			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 50.0		Intersection LOS: D	
Intersection Capacity Utilization 72.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: Sand Canyon & Soledad Canyon



Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	97	392	4	103	275
Future Vol, veh/h	33	97	392	4	103	275
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	102	413	4	108	289

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	920	415	0	0	417	0
Stage 1	415	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	301	637	-	-	1142	-
Stage 1	666	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	267	637	-	-	1142	-
Mov Cap-2 Maneuver	267	-	-	-	-	-
Stage 1	591	-	-	-	-	-
Stage 2	606	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.7	0	2.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	471	1142	-
HCM Lane V/C Ratio	-	-	0.291	0.095	-
HCM Control Delay (s)	-	-	15.7	8.5	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0.3	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	530	830	560	1240	470	40
Future Volume (vph)	530	830	560	1240	470	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	185		0	0
Storage Lanes		1	1		2	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.95
Frt		0.850			0.988	
Flt Protected			0.950		0.956	
Satd. Flow (prot)	3539	1583	1770	3539	3413	0
Flt Permitted			0.950		0.956	
Satd. Flow (perm)	3539	1583	1770	3539	3413	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		86			6	
Link Speed (mph)	50			50	50	
Link Distance (ft)	286			1136	293	
Travel Time (s)	3.9			15.5	4.0	
Lane Group Flow (vph)	589	922	622	1378	566	0
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6		2		
Total Split (s)	46.0	66.0	63.0	109.0	66.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	34.7	100.7	62.3	103.0	60.0	
Actuated g/C Ratio	0.20	0.58	0.36	0.59	0.34	
v/c Ratio	0.84	0.97	0.99	0.66	0.48	
Control Delay	55.6	38.4	87.7	26.2	46.4	
Queue Delay	44.9	41.1	0.0	1.1	0.3	
Total Delay	100.5	79.5	87.7	27.3	46.8	
LOS	F	E	F	C	D	
Approach Delay	87.7			46.1	46.8	
Approach LOS	F			D	D	

Intersection Summary

Area Type: Other
Cycle Length: 175
Actuated Cycle Length: 175
Offset: 4.3 (2%), Referenced to phase 2:WBT and 5:WBL, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 61.6 Intersection LOS: E
Intersection Capacity Utilization 92.4% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 1: SR-14 SB Ramps & Soledad Canyon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	0	290	0	0	0	0	790	160	200	640	0
Future Volume (vph)	330	0	290	0	0	0	0	790	160	200	640	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		65	300		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950	0.950								0.950		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted	0.950	0.950								0.173		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	3539	1583	322	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			191						69			
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		476			387			434			850	
Travel Time (s)		6.5			5.3			5.9			11.6	
Lane Group Flow (vph)	187	188	330	0	0	0	0	898	182	227	727	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4	4						6		5	2	
Permitted Phases			4						6	2		
Total Split (s)	45.0	45.0	45.0					45.0	45.0	23.0	68.0	
Total Lost Time (s)	5.4	5.4	5.4					6.2	6.2	4.7	6.2	
Act Effct Green (s)	17.3	17.3	17.3					29.4	29.4	50.4	48.8	
Actuated g/C Ratio	0.22	0.22	0.22					0.38	0.38	0.64	0.62	
v/c Ratio	0.51	0.51	0.66					0.68	0.29	0.48	0.33	
Control Delay	33.3	33.4	19.6					24.6	13.6	10.8	8.1	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	33.3	33.4	19.6					24.6	13.6	10.8	8.1	
LOS	C	C	B					C	B	B	A	
Approach Delay		26.9						22.7			8.7	
Approach LOS		C						C			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 113			
Actuated Cycle Length: 78.3			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 18.9		Intersection LOS: B	
Intersection Capacity Utilization 55.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Sand Canyon & SR-14 NB Ramps

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	650	320	380	1040	190	270	230	390	520	190	250
Future Volume (vph)	110	650	320	380	1040	190	270	230	390	520	190	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		190	0		138	150		200	160		190
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	0.88	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.915	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3238	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3238	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			217			94			94		159	
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		555			286			850			957	
Travel Time (s)		7.6			3.9			11.6			13.1	
Lane Group Flow (vph)	117	691	340	404	1106	202	287	245	415	553	468	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			
Total Split (s)	29.0	48.0	48.0	62.0	81.0	81.0	35.0	35.0	62.0	30.0	30.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	16.9	44.5	44.5	56.0	83.6	83.6	26.5	26.5	82.5	24.0	24.0	
Actuated g/C Ratio	0.10	0.25	0.25	0.32	0.48	0.48	0.15	0.15	0.47	0.14	0.14	
v/c Ratio	0.69	0.77	0.60	0.71	0.65	0.25	0.55	0.87	0.30	1.18	0.81	
Control Delay	96.1	67.7	25.4	56.0	33.7	11.6	72.6	100.6	11.7	161.5	59.5	
Queue Delay	0.0	30.9	0.0	56.0	6.2	1.3	0.0	0.0	0.1	1.6	0.0	
Total Delay	96.1	98.6	25.4	112.1	39.9	12.9	72.6	100.6	11.8	163.1	59.5	
LOS	F	F	C	F	D	B	E	F	B	F	E	
Approach Delay		76.7			53.8			53.2			115.6	
Approach LOS		E			D			D			F	

Intersection Summary

Area Type: Other
Cycle Length: 175
Actuated Cycle Length: 175
Offset: 0 (0%), Referenced to phase 1:WBL and 6:WBT, Start of Yellow, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 72.2 Intersection LOS: E
Intersection Capacity Utilization 86.0% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 3: Sand Canyon & Soledad Canyon

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	10	180	10	30	430
Future Vol, veh/h	40	10	180	10	30	430
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	11	196	11	33	467

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	735	202	0	0	207	0
Stage 1	202	-	-	-	-	-
Stage 2	533	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	387	839	-	-	1364	-
Stage 1	832	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	374	839	-	-	1364	-
Mov Cap-2 Maneuver	374	-	-	-	-	-
Stage 1	805	-	-	-	-	-
Stage 2	588	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.8	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	421	1364	-
HCM Lane V/C Ratio	-	-	0.129	0.024	-
HCM Control Delay (s)	-	-	14.8	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1350	660	140	650	260	50
Future Volume (vph)	1350	660	140	650	260	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	185		0	0
Storage Lanes		1	1		2	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.95
Frt		0.850			0.976	
Flt Protected			0.950		0.960	
Satd. Flow (prot)	3539	1583	1770	3539	3386	0
Flt Permitted			0.950		0.960	
Satd. Flow (perm)	3539	1583	1770	3539	3386	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		324			11	
Link Speed (mph)	50			50	50	
Link Distance (ft)	286			1136	293	
Travel Time (s)	3.9			15.5	4.0	
Lane Group Flow (vph)	1421	695	147	684	327	0
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6		2		
Total Split (s)	109.0	34.0	32.0	141.0	34.0	
Total Lost Time (s)	6.0	6.0	4.5	6.0	6.0	
Act Effct Green (s)	115.9	144.7	19.8	140.2	22.8	
Actuated g/C Ratio	0.66	0.83	0.11	0.80	0.13	
v/c Ratio	0.61	0.51	0.73	0.24	0.73	
Control Delay	22.0	2.8	95.6	4.8	79.8	
Queue Delay	21.1	1.2	0.0	0.0	2.2	
Total Delay	43.2	4.0	95.6	4.8	82.1	
LOS	D	A	F	A	F	
Approach Delay	30.3			20.8	82.1	
Approach LOS	C			C	F	

Intersection Summary

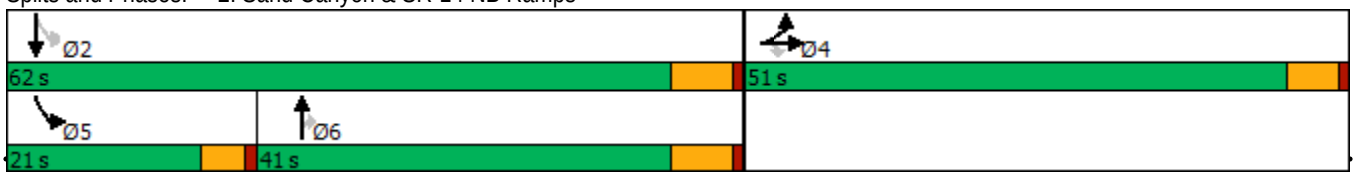
Area Type: Other
Cycle Length: 175
Actuated Cycle Length: 175
Offset: 4.3 (2%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 33.1 Intersection LOS: C
Intersection Capacity Utilization 67.8% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: SR-14 SB Ramps & Soledad Canyon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	790	0	520	0	0	0	0	900	410	230	580	0
Future Volume (vph)	790	0	520	0	0	0	0	900	410	230	580	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		65	300		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950	0.950								0.950		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted	0.950	0.950								0.118		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	3539	1583	220	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			216						144			
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		476			387			434			850	
Travel Time (s)		6.5			5.3			5.9			11.6	
Lane Group Flow (vph)	416	416	547	0	0	0	0	947	432	242	611	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4	4						6		5	2	
Permitted Phases			4						6	2		
Total Split (s)	51.0	51.0	51.0					41.0	41.0	21.0	62.0	
Total Lost Time (s)	5.4	5.4	5.4					6.2	6.2	4.7	6.2	
Act Effct Green (s)	33.1	33.1	33.1					33.3	33.3	54.8	53.3	
Actuated g/C Ratio	0.34	0.34	0.34					0.34	0.34	0.56	0.54	
v/c Ratio	0.73	0.73	0.81					0.79	0.68	0.67	0.32	
Control Delay	37.1	37.1	27.7					36.7	26.4	28.8	14.3	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	37.1	37.1	27.7					36.7	26.4	28.8	14.3	
LOS	D	D	C					D	C	C	B	
Approach Delay		33.4						33.5			18.4	
Approach LOS		C						C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 113			
Actuated Cycle Length: 98.3			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 29.9		Intersection LOS: C	
Intersection Capacity Utilization 73.6%		ICU Level of Service D	
Analysis Period (min) 15			

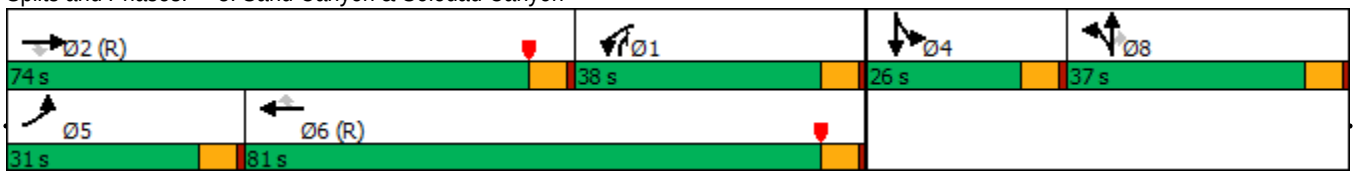
Splits and Phases: 2: Sand Canyon & SR-14 NB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	940	370	250	480	120	370	650	690	380	120	100
Future Volume (vph)	210	940	370	250	480	120	370	650	690	380	120	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		190	0		138	150		200	160		190
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	0.88	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.932	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3299	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3299	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			216			112			94		97	
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		555			286			850			957	
Travel Time (s)		7.6			3.9			11.6			13.1	
Lane Group Flow (vph)	219	979	385	260	500	125	385	677	719	396	229	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			
Total Split (s)	31.0	74.0	74.0	38.0	81.0	81.0	37.0	37.0	38.0	26.0	26.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	24.0	68.0	68.0	32.0	76.0	76.0	31.0	31.0	63.0	20.0	20.0	
Actuated g/C Ratio	0.14	0.39	0.39	0.18	0.43	0.43	0.18	0.18	0.36	0.11	0.11	
v/c Ratio	0.90	0.71	0.52	0.80	0.33	0.17	0.63	2.05	0.68	1.01	0.50	
Control Delay	110.6	48.8	19.5	77.1	24.5	1.9	72.1	515.7	27.8	122.6	45.4	
Queue Delay	0.0	21.1	1.0	58.3	2.6	1.0	0.0	0.0	2.0	31.7	0.0	
Total Delay	110.6	69.9	20.5	135.4	27.1	2.9	72.1	515.7	29.9	154.4	45.4	
LOS	F	E	C	F	C	A	E	F	C	F	D	
Approach Delay		63.5			55.5			223.7			114.4	
Approach LOS		E			E			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 175			
Actuated Cycle Length: 175			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.05			
Intersection Signal Delay: 127.1		Intersection LOS: F	
Intersection Capacity Utilization 104.9%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 3: Sand Canyon & Soledad Canyon



Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	10	400	10	40	290
Future Vol, veh/h	30	10	400	10	40	290
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	11	421	11	42	305

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	816	427	0	0	432	0
Stage 1	427	-	-	-	-	-
Stage 2	389	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	347	628	-	-	1128	-
Stage 1	658	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	331	628	-	-	1128	-
Mov Cap-2 Maneuver	331	-	-	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	685	-	-	-	-	-

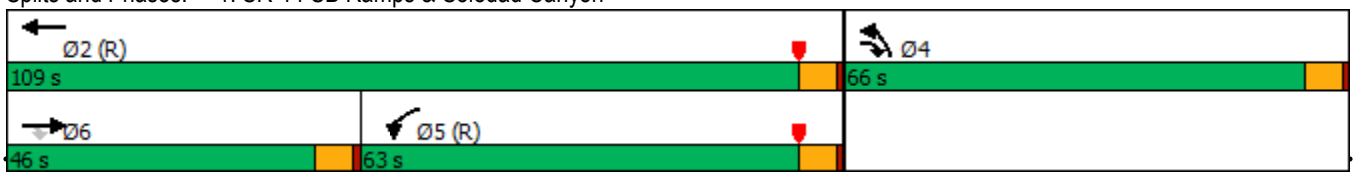
Approach	WB	NB	SB
HCM Control Delay, s	15.8	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	375	1128	-
HCM Lane V/C Ratio	-	-	0.112	0.037	-
HCM Control Delay (s)	-	-	15.8	8.3	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	532	851	560	1245	479	40
Future Volume (vph)	532	851	560	1245	479	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	185		0	0
Storage Lanes		1	1		2	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	3539	1583	1770	3539	3417	0
Flt Permitted			0.950		0.956	
Satd. Flow (perm)	3539	1583	1770	3539	3417	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		86			5	
Link Speed (mph)	50			50	50	
Link Distance (ft)	286			1136	293	
Travel Time (s)	3.9			15.5	4.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	591	946	622	1383	576	0
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6		2		
Total Split (s)	46.0	66.0	63.0	109.0	66.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	34.8	100.8	62.2	103.0	60.0	
Actuated g/C Ratio	0.20	0.58	0.36	0.59	0.34	
v/c Ratio	0.84	1.00	0.99	0.66	0.49	
Control Delay	56.3	44.5	88.1	26.3	46.7	
Queue Delay	48.6	36.5	0.0	1.1	0.4	
Total Delay	104.9	81.0	88.1	27.4	47.1	
LOS	F	F	F	C	D	
Approach Delay	90.2			46.2	47.1	
Approach LOS	F			D	D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 175			
Actuated Cycle Length: 175			
Offset: 4.3 (2%), Referenced to phase 2:WBT and 5:WBL, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay: 62.8		Intersection LOS: E	
Intersection Capacity Utilization 93.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: SR-14 SB Ramps & Soledad Canyon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	0	345	0	0	0	0	819	164	200	668	0
Future Volume (vph)	330	0	345	0	0	0	0	819	164	200	668	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		65	300		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted	0.950	0.950								0.157		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	3539	1583	292	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			177						69			
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		476			387			434			850	
Travel Time (s)		6.5			5.3			5.9			11.6	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	187	188	392	0	0	0	0	931	186	227	759	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4	4						6		5	2	
Permitted Phases			4						6	2		
Total Split (s)	45.0	45.0	45.0					45.0	45.0	23.0	68.0	
Total Lost Time (s)	5.4	5.4	5.4					6.2	6.2	4.7	6.2	
Act Effct Green (s)	20.0	20.0	20.0					31.2	31.2	52.4	50.8	
Actuated g/C Ratio	0.24	0.24	0.24					0.38	0.38	0.63	0.61	
v/c Ratio	0.46	0.47	0.76					0.70	0.29	0.51	0.35	
Control Delay	32.1	32.2	26.7					26.7	14.6	13.4	9.3	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	32.1	32.2	26.7					26.7	14.6	13.4	9.3	
LOS	C	C	C					C	B	B	A	
Approach Delay		29.4						24.7			10.3	
Approach LOS		C						C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 113			
Actuated Cycle Length: 83.1			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 21.0		Intersection LOS: C	
Intersection Capacity Utilization 56.4%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Sand Canyon & SR-14 NB Ramps

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	650	329	394	1040	190	274	232	413	520	190	250
Future Volume (vph)	110	650	329	394	1040	190	274	232	413	520	190	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		190	0		138	150		200	160		190
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3238	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3238	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			224			94			94		159	
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		555			286			850			957	
Travel Time (s)		7.6			3.9			11.6			13.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	117	691	350	419	1106	202	291	247	439	553	468	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			
Total Split (s)	29.0	48.0	48.0	62.0	81.0	81.0	35.0	35.0	62.0	30.0	30.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	16.9	44.4	44.4	56.0	83.5	83.5	26.6	26.6	82.6	24.0	24.0	
Actuated g/C Ratio	0.10	0.25	0.25	0.32	0.48	0.48	0.15	0.15	0.47	0.14	0.14	
v/c Ratio	0.69	0.77	0.62	0.74	0.66	0.25	0.56	0.87	0.32	1.18	0.81	
Control Delay	96.1	67.9	25.6	57.7	34.0	11.8	72.7	100.8	12.0	161.5	59.5	
Queue Delay	0.0	31.4	0.0	55.6	6.9	1.3	0.0	0.0	0.1	1.6	0.0	
Total Delay	96.1	99.3	25.6	113.3	40.9	13.1	72.7	100.8	12.2	163.2	59.5	
LOS	F	F	C	F	D	B	E	F	B	F	E	
Approach Delay		76.7			55.2			52.6			115.6	
Approach LOS		E			E			D			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 175			
Actuated Cycle Length: 175			
Offset: 0 (0%), Referenced to phase 1:WBL and 6:WBT, Start of Yellow, Master Intersection			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.18			
Intersection Signal Delay: 72.4		Intersection LOS: E	
Intersection Capacity Utilization 86.8%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Sand Canyon & Soledad Canyon

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	44	180	13	117	430
Future Vol, veh/h	41	44	180	13	117	430
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	48	196	14	127	467

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	924	203	0	0	210	0
Stage 1	203	-	-	-	-	-
Stage 2	721	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	299	838	-	-	1361	-
Stage 1	831	-	-	-	-	-
Stage 2	482	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	261	838	-	-	1361	-
Mov Cap-2 Maneuver	261	-	-	-	-	-
Stage 1	726	-	-	-	-	-
Stage 2	482	-	-	-	-	-

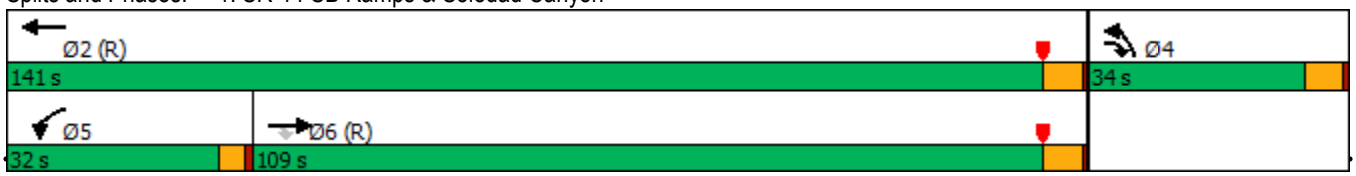
Approach	WB	NB	SB
HCM Control Delay, s	16.5	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	406	1361	-
HCM Lane V/C Ratio	-	-	0.228	0.093	-
HCM Control Delay (s)	-	-	16.5	7.9	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.3	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1355	715	140	654	267	50
Future Volume (vph)	1355	715	140	654	267	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	185		0	0
Storage Lanes		1	1		2	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	3539	1583	1770	3539	3386	0
Flt Permitted			0.950		0.960	
Satd. Flow (perm)	3539	1583	1770	3539	3386	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		324			11	
Link Speed (mph)	50			50	50	
Link Distance (ft)	286			1136	293	
Travel Time (s)	3.9			15.5	4.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1426	753	147	688	334	0
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6		2		
Total Split (s)	109.0	34.0	32.0	141.0	34.0	
Total Lost Time (s)	6.0	6.0	4.5	6.0	6.0	
Act Effct Green (s)	115.1	144.7	19.8	139.4	23.6	
Actuated g/C Ratio	0.66	0.83	0.11	0.80	0.13	
v/c Ratio	0.61	0.55	0.73	0.24	0.72	
Control Delay	21.6	3.0	95.6	5.0	78.7	
Queue Delay	27.8	1.4	0.0	0.0	2.8	
Total Delay	49.4	4.4	95.6	5.0	81.5	
LOS	D	A	F	A	F	
Approach Delay	33.8			20.9	81.5	
Approach LOS	C			C	F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 175			
Actuated Cycle Length: 175			
Offset: 4.3 (2%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 35.4		Intersection LOS: D	
Intersection Capacity Utilization 68.1%		ICU Level of Service C	
Analysis Period (min) 15			

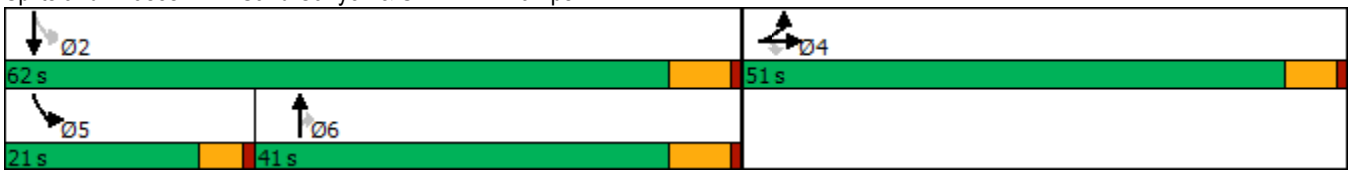
Splits and Phases: 1: SR-14 SB Ramps & Soledad Canyon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	790	0	563	0	0	0	0	974	419	230	602	0
Future Volume (vph)	790	0	563	0	0	0	0	974	419	230	602	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		65	300		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted	0.950	0.950								0.102		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	3539	1583	190	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			203						136			
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		476			387			434			850	
Travel Time (s)		6.5			5.3			5.9			11.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	416	416	593	0	0	0	0	1025	441	242	634	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4	4						6		5	2	
Permitted Phases			4						6	2		
Total Split (s)	51.0	51.0	51.0					41.0	41.0	21.0	62.0	
Total Lost Time (s)	5.4	5.4	5.4					6.2	6.2	4.7	6.2	
Act Effct Green (s)	35.7	35.7	35.7					34.4	34.4	55.9	54.4	
Actuated g/C Ratio	0.35	0.35	0.35					0.34	0.34	0.55	0.53	
v/c Ratio	0.71	0.71	0.87					0.86	0.71	0.71	0.34	
Control Delay	35.5	35.5	33.8					41.8	28.9	34.7	15.4	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	35.5	35.5	33.8					41.8	28.9	34.7	15.4	
LOS	D	D	C					D	C	C	B	
Approach Delay		34.8						37.9			20.7	
Approach LOS		C						D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 113			
Actuated Cycle Length: 101.9			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 32.7		Intersection LOS: C	
Intersection Capacity Utilization 75.1%		ICU Level of Service D	
Analysis Period (min) 15			

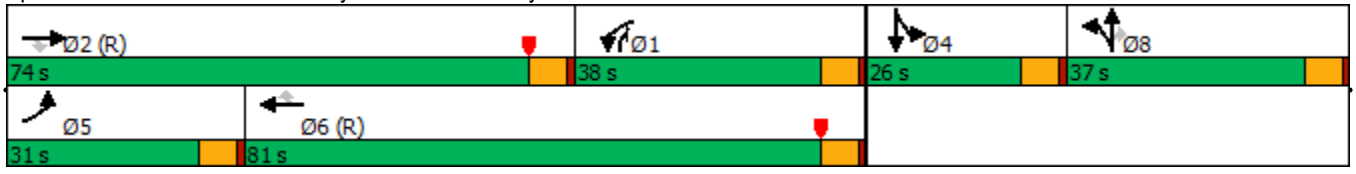
Splits and Phases: 2: Sand Canyon & SR-14 NB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	940	377	261	480	120	379	655	750	380	124	100
Future Volume (vph)	210	940	377	261	480	120	379	655	750	380	124	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		190	0		138	150		200	160		190
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3302	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3302	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			221			112			94		97	
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		555			286			850			957	
Travel Time (s)		7.6			3.9			11.6			13.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	219	979	393	272	500	125	395	682	781	396	233	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			
Total Split (s)	31.0	74.0	74.0	38.0	81.0	81.0	37.0	37.0	38.0	26.0	26.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	24.0	68.0	68.0	32.0	76.0	76.0	31.0	31.0	63.0	20.0	20.0	
Actuated g/C Ratio	0.14	0.39	0.39	0.18	0.43	0.43	0.18	0.18	0.36	0.11	0.11	
v/c Ratio	0.90	0.71	0.52	0.84	0.33	0.17	0.65	2.07	0.73	1.01	0.50	
Control Delay	110.6	48.8	19.6	80.5	24.3	1.8	72.6	522.2	30.5	122.6	46.1	
Queue Delay	0.0	21.1	1.1	56.7	2.5	1.0	0.0	0.0	4.6	32.2	0.0	
Total Delay	110.6	69.9	20.6	137.2	26.8	2.8	72.6	522.2	35.1	154.8	46.1	
LOS	F	E	C	F	C	A	E	F	D	F	D	
Approach Delay		63.3			56.9			221.9			114.6	
Approach LOS		E			E			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 175			
Actuated Cycle Length: 175			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.07			
Intersection Signal Delay: 127.9		Intersection LOS: F	
Intersection Capacity Utilization 105.8%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 3: Sand Canyon & Soledad Canyon



Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	97	400	12	109	290
Future Vol, veh/h	33	97	400	12	109	290
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	102	421	13	115	305

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	963	428	0	0	434	0
Stage 1	428	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	284	627	-	-	1126	-
Stage 1	657	-	-	-	-	-
Stage 2	587	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	249	627	-	-	1126	-
Mov Cap-2 Maneuver	249	-	-	-	-	-
Stage 1	576	-	-	-	-	-
Stage 2	587	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.4	0	2.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	453	1126	-
HCM Lane V/C Ratio	-	-	0.302	0.102	-
HCM Control Delay (s)	-	-	16.4	8.6	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.3	0.3	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	550	840	680	1310	480	40
Future Volume (vph)	550	840	680	1310	480	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	185		0	0
Storage Lanes		1	1		2	0
Taper Length (ft)			25		25	
Lane Util. Factor	0.95	1.00	1.00	0.95	0.97	0.95
Frt		0.850			0.989	
Flt Protected			0.950		0.956	
Satd. Flow (prot)	3539	1583	1770	3539	3417	0
Flt Permitted			0.950		0.956	
Satd. Flow (perm)	3539	1583	1770	3539	3417	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		48			5	
Link Speed (mph)	50			50	50	
Link Distance (ft)	286			1136	293	
Travel Time (s)	3.9			15.5	4.0	
Lane Group Flow (vph)	611	933	756	1456	577	0
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6		2		
Total Split (s)	46.0	66.0	63.0	109.0	66.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	35.6	101.6	61.4	103.0	60.0	
Actuated g/C Ratio	0.20	0.58	0.35	0.59	0.34	
v/c Ratio	0.85	0.99	1.22	0.70	0.49	
Control Delay	55.8	43.4	158.8	27.5	46.8	
Queue Delay	52.1	37.2	0.0	1.9	0.9	
Total Delay	107.9	80.7	158.8	29.3	47.7	
LOS	F	F	F	C	D	
Approach Delay	91.5			73.6	47.7	
Approach LOS	F			E	D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 175			
Actuated Cycle Length: 175			
Offset: 4.3 (2%), Referenced to phase 2:WBT and 5:WBL, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.22			
Intersection Signal Delay: 76.5		Intersection LOS: E	
Intersection Capacity Utilization 99.7%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: SR-14 SB Ramps & Soledad Canyon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	0	350	0	0	0	0	820	170	200	660	0
Future Volume (vph)	330	0	350	0	0	0	0	820	170	200	660	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		65	300		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850						0.850			
Flt Protected	0.950	0.950								0.950		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted	0.950	0.950								0.157		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	3539	1583	292	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			180						69			
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		476			387			434			850	
Travel Time (s)		6.5			5.3			5.9			11.6	
Lane Group Flow (vph)	187	188	398	0	0	0	0	932	193	227	750	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4	4						6		5	2	
Permitted Phases			4						6	2		
Total Split (s)	45.0	45.0	45.0					45.0	45.0	23.0	68.0	
Total Lost Time (s)	5.4	5.4	5.4					6.2	6.2	4.7	6.2	
Act Effct Green (s)	20.4	20.4	20.4					31.3	31.3	52.7	51.1	
Actuated g/C Ratio	0.24	0.24	0.24					0.37	0.37	0.63	0.61	
v/c Ratio	0.46	0.46	0.76					0.70	0.30	0.51	0.35	
Control Delay	31.9	32.0	26.7					27.1	15.1	13.6	9.5	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	31.9	32.0	26.7					27.1	15.1	13.6	9.5	
LOS	C	C	C					C	B	B	A	
Approach Delay		29.2						25.0			10.4	
Approach LOS		C						C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 113			
Actuated Cycle Length: 83.8			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 21.2		Intersection LOS: C	
Intersection Capacity Utilization 56.5%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Sand Canyon & SR-14 NB Ramps

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	660	320	390	1150	190	280	240	400	530	200	260
Future Volume (vph)	120	660	320	390	1150	190	280	240	400	530	200	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		190	0		138	150		200	160		190
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	0.97	1.00	0.88	0.97	0.95	0.95
Frt			0.850			0.850			0.850		0.915	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3238	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3238	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			214			94			94		157	
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		555			286			850			957	
Travel Time (s)		7.6			3.9			11.6			13.1	
Lane Group Flow (vph)	128	702	340	415	1223	202	298	255	426	564	490	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			
Total Split (s)	29.0	48.0	48.0	62.0	81.0	81.0	35.0	35.0	62.0	30.0	30.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	17.6	44.0	44.0	56.0	82.4	82.4	27.0	27.0	83.0	24.0	24.0	
Actuated g/C Ratio	0.10	0.25	0.25	0.32	0.47	0.47	0.15	0.15	0.47	0.14	0.14	
v/c Ratio	0.72	0.79	0.61	0.73	0.73	0.25	0.56	0.89	0.31	1.20	0.85	
Control Delay	97.7	69.0	26.1	55.6	36.4	11.3	72.7	102.9	11.8	169.4	63.8	
Queue Delay	0.0	41.5	0.0	55.9	22.6	1.4	0.0	0.0	0.1	2.8	0.0	
Total Delay	97.7	110.5	26.1	111.5	58.9	12.7	72.7	102.9	11.9	172.2	63.8	
LOS	F	F	C	F	E	B	E	F	B	F	E	
Approach Delay		84.6			65.7			54.1			121.8	
Approach LOS		F			E			D			F	

Intersection Summary

Area Type: Other
Cycle Length: 175
Actuated Cycle Length: 175
Offset: 0 (0%), Referenced to phase 1:WBL and 6:WBT, Start of Yellow, Master Intersection
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.20
Intersection Signal Delay: 79.6 Intersection LOS: E
Intersection Capacity Utilization 87.6% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 3: Sand Canyon & Soledad Canyon

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	10	220	10	30	440
Future Vol, veh/h	40	10	220	10	30	440
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	11	239	11	33	478

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	789	245	0	0	250	0
Stage 1	245	-	-	-	-	-
Stage 2	544	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	359	794	-	-	1316	-
Stage 1	796	-	-	-	-	-
Stage 2	582	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	347	794	-	-	1316	-
Mov Cap-2 Maneuver	347	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	582	-	-	-	-	-

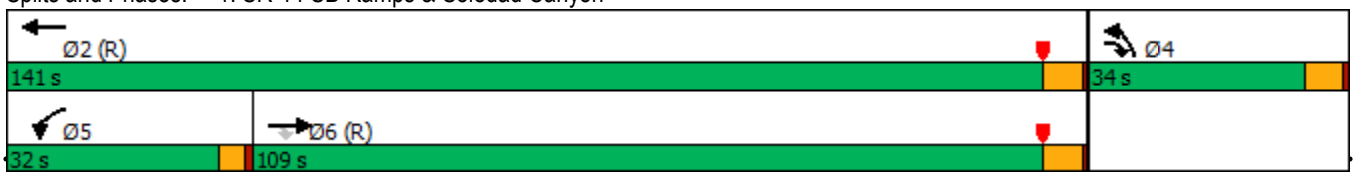
Approach	WB	NB	SB
HCM Control Delay, s	15.7	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	391	1316	-
HCM Lane V/C Ratio	-	-	0.139	0.025	-
HCM Control Delay (s)	-	-	15.7	7.8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1460	670	170	620	260	50
Future Volume (vph)	1460	670	170	620	260	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	185		0	0
Storage Lanes		1	1		2	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	3539	1583	1770	3539	3386	0
Flt Permitted			0.950		0.960	
Satd. Flow (perm)	3539	1583	1770	3539	3386	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		247			11	
Link Speed (mph)	50			50	50	
Link Distance (ft)	286			1136	293	
Travel Time (s)	3.9			15.5	4.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1537	705	179	653	327	0
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6		2		
Total Split (s)	109.0	34.0	32.0	141.0	34.0	
Total Lost Time (s)	6.0	6.0	4.5	6.0	6.0	
Act Effct Green (s)	112.8	141.6	22.9	140.2	22.8	
Actuated g/C Ratio	0.64	0.81	0.13	0.80	0.13	
v/c Ratio	0.67	0.53	0.77	0.23	0.73	
Control Delay	24.2	4.0	94.9	4.7	79.8	
Queue Delay	30.3	1.4	0.0	0.0	2.6	
Total Delay	54.5	5.4	94.9	4.7	82.4	
LOS	D	A	F	A	F	
Approach Delay	39.0			24.1	82.4	
Approach LOS	D			C	F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 175			
Actuated Cycle Length: 175			
Offset: 4.3 (2%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 39.6		Intersection LOS: D	
Intersection Capacity Utilization 72.5%		ICU Level of Service C	
Analysis Period (min) 15			

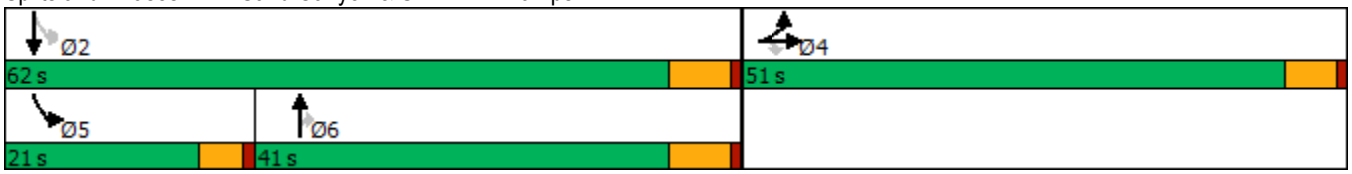
Splits and Phases: 1: SR-14 SB Ramps & Soledad Canyon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	790	0	520	0	0	0	0	1040	450	240	580	0
Future Volume (vph)	790	0	520	0	0	0	0	1040	450	240	580	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		65	300		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted	0.950	0.950								0.100		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	3539	1583	186	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			216						136			
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		476			387			434			850	
Travel Time (s)		6.5			5.3			5.9			11.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	416	416	547	0	0	0	0	1095	474	253	611	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4	4						6		5	2	
Permitted Phases			4						6	2		
Total Split (s)	51.0	51.0	51.0					41.0	41.0	21.0	62.0	
Total Lost Time (s)	5.4	5.4	5.4					6.2	6.2	4.7	6.2	
Act Effct Green (s)	33.3	33.3	33.3					35.2	35.2	57.0	55.5	
Actuated g/C Ratio	0.33	0.33	0.33					0.35	0.35	0.57	0.55	
v/c Ratio	0.75	0.75	0.82					0.88	0.74	0.72	0.31	
Control Delay	38.4	38.4	28.7					42.4	30.1	35.3	14.1	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	38.4	38.4	28.7					42.4	30.1	35.3	14.1	
LOS	D	D	C					D	C	D	B	
Approach Delay		34.6						38.7			20.3	
Approach LOS		C						D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 113			
Actuated Cycle Length: 100.5			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 33.0		Intersection LOS: C	
Intersection Capacity Utilization 77.5%		ICU Level of Service D	
Analysis Period (min) 15			

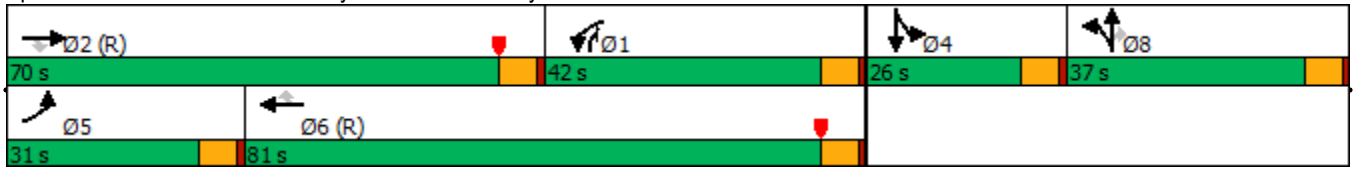
Splits and Phases: 2: Sand Canyon & SR-14 NB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	950	380	280	490	130	440	660	710	390	120	130
Future Volume (vph)	220	950	380	280	490	130	440	660	710	390	120	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		190	0		138	150		200	160		190
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3263	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3263	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			212			118			94		125	
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		555			286			850			957	
Travel Time (s)		7.6			3.9			11.6			13.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	990	396	292	510	135	458	688	740	406	260	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			
Total Split (s)	31.0	70.0	70.0	42.0	81.0	81.0	37.0	37.0	42.0	26.0	26.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	24.4	64.0	64.0	36.0	75.6	75.6	31.0	31.0	67.0	20.0	20.0	
Actuated g/C Ratio	0.14	0.37	0.37	0.21	0.43	0.43	0.18	0.18	0.38	0.11	0.11	
v/c Ratio	0.93	0.77	0.56	0.80	0.33	0.18	0.75	2.08	0.66	1.04	0.54	
Control Delay	115.1	53.6	22.6	74.3	26.4	4.1	77.2	530.0	25.6	127.6	41.9	
Queue Delay	0.0	33.1	1.1	58.1	2.6	1.1	0.0	0.0	3.4	25.1	0.0	
Total Delay	115.1	86.7	23.7	132.4	29.0	5.2	77.2	530.0	29.0	152.6	41.9	
LOS	F	F	C	F	C	A	E	F	C	F	D	
Approach Delay		75.3			57.8			223.5			109.4	
Approach LOS		E			E			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 175			
Actuated Cycle Length: 175			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.08			
Intersection Signal Delay: 131.3		Intersection LOS: F	
Intersection Capacity Utilization 107.6%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 3: Sand Canyon & Soledad Canyon



Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	10	440	10	40	300
Future Vol, veh/h	30	10	440	10	40	300
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	32	11	463	11	42	316

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	869	469	0	0	474	0
Stage 1	469	-	-	-	-	-
Stage 2	400	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	322	594	-	-	1088	-
Stage 1	630	-	-	-	-	-
Stage 2	677	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	307	594	-	-	1088	-
Mov Cap-2 Maneuver	307	-	-	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	677	-	-	-	-	-

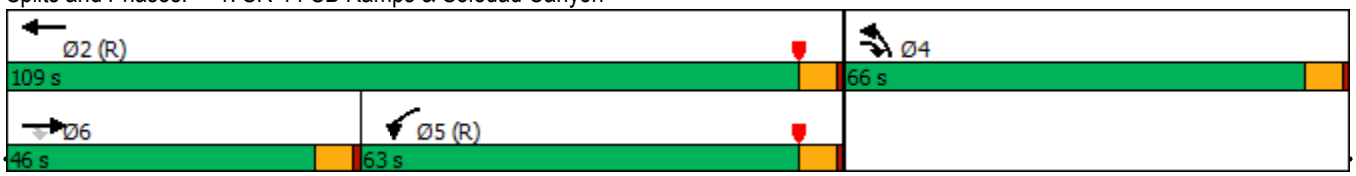
Approach	WB	NB	SB
HCM Control Delay, s	16.7	0	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	349	1088	-
HCM Lane V/C Ratio	-	-	0.121	0.039	-
HCM Control Delay (s)	-	-	16.7	8.4	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	552	861	680	1315	489	40
Future Volume (vph)	552	861	680	1315	489	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	185		0	0
Storage Lanes		1	1		2	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	3539	1583	1770	3539	3417	0
Flt Permitted			0.950		0.956	
Satd. Flow (perm)	3539	1583	1770	3539	3417	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		48			5	
Link Speed (mph)	50			50	50	
Link Distance (ft)	286			1136	293	
Travel Time (s)	3.9			15.5	4.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	613	957	756	1461	587	0
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6		2		
Total Split (s)	46.0	66.0	63.0	109.0	66.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	35.6	101.6	61.4	103.0	60.0	
Actuated g/C Ratio	0.20	0.58	0.35	0.59	0.34	
v/c Ratio	0.85	1.02	1.22	0.70	0.50	
Control Delay	56.5	50.2	159.2	27.5	47.0	
Queue Delay	52.1	30.9	0.0	1.9	1.0	
Total Delay	108.6	81.1	159.2	29.5	48.0	
LOS	F	F	F	C	D	
Approach Delay	91.9			73.7	48.0	
Approach LOS	F			E	D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 175			
Actuated Cycle Length: 175			
Offset: 4.3 (2%), Referenced to phase 2:WBT and 5:WBL, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.22			
Intersection Signal Delay: 76.8		Intersection LOS: E	
Intersection Capacity Utilization 101.0%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 1: SR-14 SB Ramps & Soledad Canyon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	330	0	405	0	0	0	0	849	174	200	688	0
Future Volume (vph)	330	0	405	0	0	0	0	849	174	200	688	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		65	300		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted	0.950	0.950								0.136		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	3539	1583	253	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			167						69			
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		476			387			434			850	
Travel Time (s)		6.5			5.3			5.9			11.6	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	187	188	460	0	0	0	0	965	198	227	782	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4	4						6		5	2	
Permitted Phases			4						6	2		
Total Split (s)	45.0	45.0	45.0					45.0	45.0	23.0	68.0	
Total Lost Time (s)	5.4	5.4	5.4					6.2	6.2	4.7	6.2	
Act Effct Green (s)	25.1	25.1	25.1					33.1	33.1	54.6	53.1	
Actuated g/C Ratio	0.28	0.28	0.28					0.37	0.37	0.60	0.59	
v/c Ratio	0.40	0.40	0.82					0.75	0.32	0.56	0.38	
Control Delay	30.1	30.1	32.7					30.8	16.9	18.5	11.6	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	30.1	30.1	32.7					30.8	16.9	18.5	11.6	
LOS	C	C	C					C	B	B	B	
Approach Delay		31.5						28.5			13.1	
Approach LOS		C						C			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 113			
Actuated Cycle Length: 90.4			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 24.2		Intersection LOS: C	
Intersection Capacity Utilization 57.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Sand Canyon & SR-14 NB Ramps

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	120	660	329	404	1150	190	284	242	423	530	205	260
Future Volume (vph)	120	660	329	404	1150	190	284	242	423	530	205	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		190	0		138	150		200	160		190
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3242	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3242	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			221			94			94		154	
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		555			286			850			957	
Travel Time (s)		7.6			3.9			11.6			13.1	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	702	350	430	1223	202	302	257	450	564	495	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			
Total Split (s)	29.0	48.0	48.0	62.0	81.0	81.0	35.0	35.0	62.0	30.0	30.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	17.6	43.9	43.9	56.0	82.3	82.3	27.1	27.1	83.1	24.0	24.0	
Actuated g/C Ratio	0.10	0.25	0.25	0.32	0.47	0.47	0.15	0.15	0.47	0.14	0.14	
v/c Ratio	0.72	0.79	0.62	0.76	0.73	0.25	0.57	0.90	0.33	1.20	0.86	
Control Delay	97.7	69.1	26.3	57.2	36.5	11.4	72.8	103.5	12.1	169.4	65.6	
Queue Delay	0.0	42.1	0.0	55.4	24.4	1.4	0.0	0.0	0.2	2.8	0.0	
Total Delay	97.7	111.2	26.3	112.6	60.9	12.8	72.8	103.5	12.3	172.2	65.6	
LOS	F	F	C	F	E	B	E	F	B	F	E	
Approach Delay		84.6			67.7			53.6			122.4	
Approach LOS		F			E			D			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 175			
Actuated Cycle Length: 175			
Offset: 0 (0%), Referenced to phase 1:WBL and 6:WBT, Start of Yellow, Master Intersection			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay: 80.1		Intersection LOS: F	
Intersection Capacity Utilization 88.5%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 3: Sand Canyon & Soledad Canyon

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	44	220	13	117	440
Future Vol, veh/h	41	44	220	13	117	440
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	48	239	14	127	478

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	978	246	0	0	253	0
Stage 1	246	-	-	-	-	-
Stage 2	732	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	278	793	-	-	1312	-
Stage 1	795	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	241	793	-	-	1312	-
Mov Cap-2 Maneuver	241	-	-	-	-	-
Stage 1	690	-	-	-	-	-
Stage 2	476	-	-	-	-	-

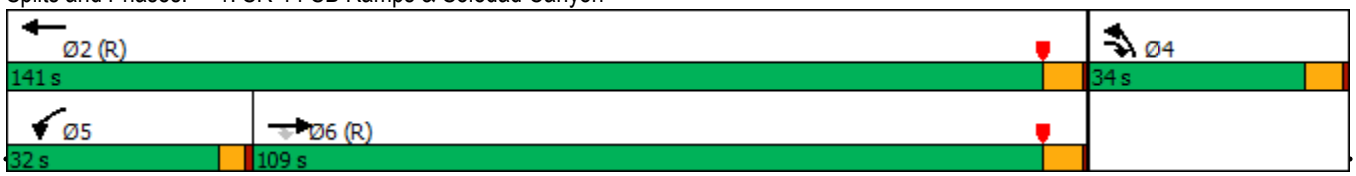
Approach	WB	NB	SB
HCM Control Delay, s	17.6	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	377	1312	-
HCM Lane V/C Ratio	-	-	0.245	0.097	-
HCM Control Delay (s)	-	-	17.6	8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.3	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1465	725	170	624	267	50
Future Volume (vph)	1465	725	170	624	267	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	185		0	0
Storage Lanes		1	1		2	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	3539	1583	1770	3539	3386	0
Flt Permitted			0.950		0.960	
Satd. Flow (perm)	3539	1583	1770	3539	3386	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		247			11	
Link Speed (mph)	50			50	50	
Link Distance (ft)	286			1136	293	
Travel Time (s)	3.9			15.5	4.0	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1542	763	179	657	334	0
Turn Type	NA	pm+ov	Prot	NA	Prot	
Protected Phases	6	4	5	2	4	
Permitted Phases		6		2		
Total Split (s)	109.0	34.0	32.0	141.0	34.0	
Total Lost Time (s)	6.0	6.0	4.5	6.0	6.0	
Act Effct Green (s)	113.0	142.2	22.3	139.8	23.2	
Actuated g/C Ratio	0.65	0.81	0.13	0.80	0.13	
v/c Ratio	0.67	0.57	0.80	0.23	0.73	
Control Delay	23.8	4.4	98.2	4.8	79.8	
Queue Delay	37.8	1.7	0.0	0.0	1.9	
Total Delay	61.6	6.1	98.2	4.8	81.7	
LOS	E	A	F	A	F	
Approach Delay	43.2			24.8	81.7	
Approach LOS	D			C	F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 175			
Actuated Cycle Length: 175			
Offset: 4.3 (2%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 42.5		Intersection LOS: D	
Intersection Capacity Utilization 72.9%		ICU Level of Service C	
Analysis Period (min) 15			

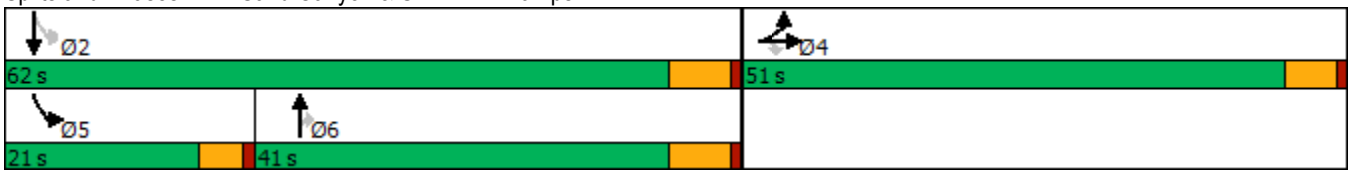
Splits and Phases: 1: SR-14 SB Ramps & Soledad Canyon



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	790	0	563	0	0	0	0	1114	459	240	602	0
Future Volume (vph)	790	0	563	0	0	0	0	1114	459	240	602	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		65	300		0
Storage Lanes	1		1	0		0	0		1	1		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1681	1681	1583	0	0	0	0	3539	1583	1770	3539	0
Flt Permitted	0.950	0.950								0.100		
Satd. Flow (perm)	1681	1681	1583	0	0	0	0	3539	1583	186	3539	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			203						130			
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		476			387			434			850	
Travel Time (s)		6.5			5.3			5.9			11.6	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Shared Lane Traffic (%)	50%											
Lane Group Flow (vph)	416	416	593	0	0	0	0	1173	483	253	634	0
Turn Type	Split	NA	Perm					NA	Perm	pm+pt	NA	
Protected Phases	4	4						6		5	2	
Permitted Phases			4						6	2		
Total Split (s)	51.0	51.0	51.0					41.0	41.0	21.0	62.0	
Total Lost Time (s)	5.4	5.4	5.4					6.2	6.2	4.7	6.2	
Act Effct Green (s)	35.8	35.8	35.8					35.2	35.2	57.0	55.5	
Actuated g/C Ratio	0.35	0.35	0.35					0.34	0.34	0.55	0.54	
v/c Ratio	0.71	0.71	0.87					0.97	0.77	0.74	0.33	
Control Delay	36.1	36.1	34.4					55.1	33.4	37.7	15.3	
Queue Delay	0.0	0.0	0.0					0.0	0.0	0.0	0.0	
Total Delay	36.1	36.1	34.4					55.1	33.4	37.7	15.3	
LOS	D	D	C					E	C	D	B	
Approach Delay		35.4						48.8			21.7	
Approach LOS		D						D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 113			
Actuated Cycle Length: 103			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 37.9		Intersection LOS: D	
Intersection Capacity Utilization 79.6%		ICU Level of Service D	
Analysis Period (min) 15			

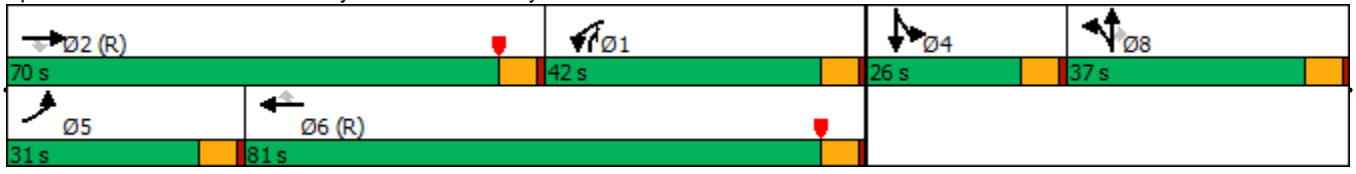
Splits and Phases: 2: Sand Canyon & SR-14 NB Ramps



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	950	387	291	490	130	449	665	770	390	124	130
Future Volume (vph)	220	950	387	291	490	130	449	665	770	390	124	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	170		190	0		138	150		200	160		190
Storage Lanes	1		1	1		1	2		1	2		1
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3267	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	3539	1583	1770	3539	1583	3433	1863	2787	3433	3267	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			216			118			94		125	
Link Speed (mph)		50			50			50			50	
Link Distance (ft)		555			286			850			957	
Travel Time (s)		7.6			3.9			11.6			13.1	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	229	990	403	303	510	135	468	693	802	406	264	0
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Split	NA	pm+ov	Split	NA	
Protected Phases	5	2		1	6		8	8	1	4	4	
Permitted Phases			2			6			8			
Total Split (s)	31.0	70.0	70.0	42.0	81.0	81.0	37.0	37.0	42.0	26.0	26.0	
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Act Effct Green (s)	24.4	64.0	64.0	36.0	75.6	75.6	31.0	31.0	67.0	20.0	20.0	
Actuated g/C Ratio	0.14	0.37	0.37	0.21	0.43	0.43	0.18	0.18	0.38	0.11	0.11	
v/c Ratio	0.93	0.77	0.56	0.83	0.33	0.18	0.77	2.10	0.71	1.04	0.55	
Control Delay	115.1	53.6	22.8	78.4	27.6	6.1	78.1	536.5	27.5	127.6	42.6	
Queue Delay	0.0	33.1	1.1	56.0	2.2	1.0	0.0	0.0	10.6	25.1	0.0	
Total Delay	115.1	86.7	23.9	134.4	29.8	7.1	78.1	536.5	38.1	152.6	42.6	
LOS	F	F	C	F	C	A	E	F	D	F	D	
Approach Delay		75.1			60.0			223.6			109.3	
Approach LOS		E			E			F			F	

Intersection Summary			
Area Type:	Other		
Cycle Length: 175			
Actuated Cycle Length: 175			
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.10			
Intersection Signal Delay: 132.8		Intersection LOS: F	
Intersection Capacity Utilization 108.5%		ICU Level of Service G	
Analysis Period (min) 15			

Splits and Phases: 3: Sand Canyon & Soledad Canyon



Intersection	
Int Delay, s/veh	3.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	97	440	12	109	300
Future Vol, veh/h	33	97	440	12	109	300
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	102	463	13	115	316

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1016	470	0	0	476	0
Stage 1	470	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	264	594	-	-	1086	-
Stage 1	629	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	230	594	-	-	1086	-
Mov Cap-2 Maneuver	230	-	-	-	-	-
Stage 1	548	-	-	-	-	-
Stage 2	580	-	-	-	-	-

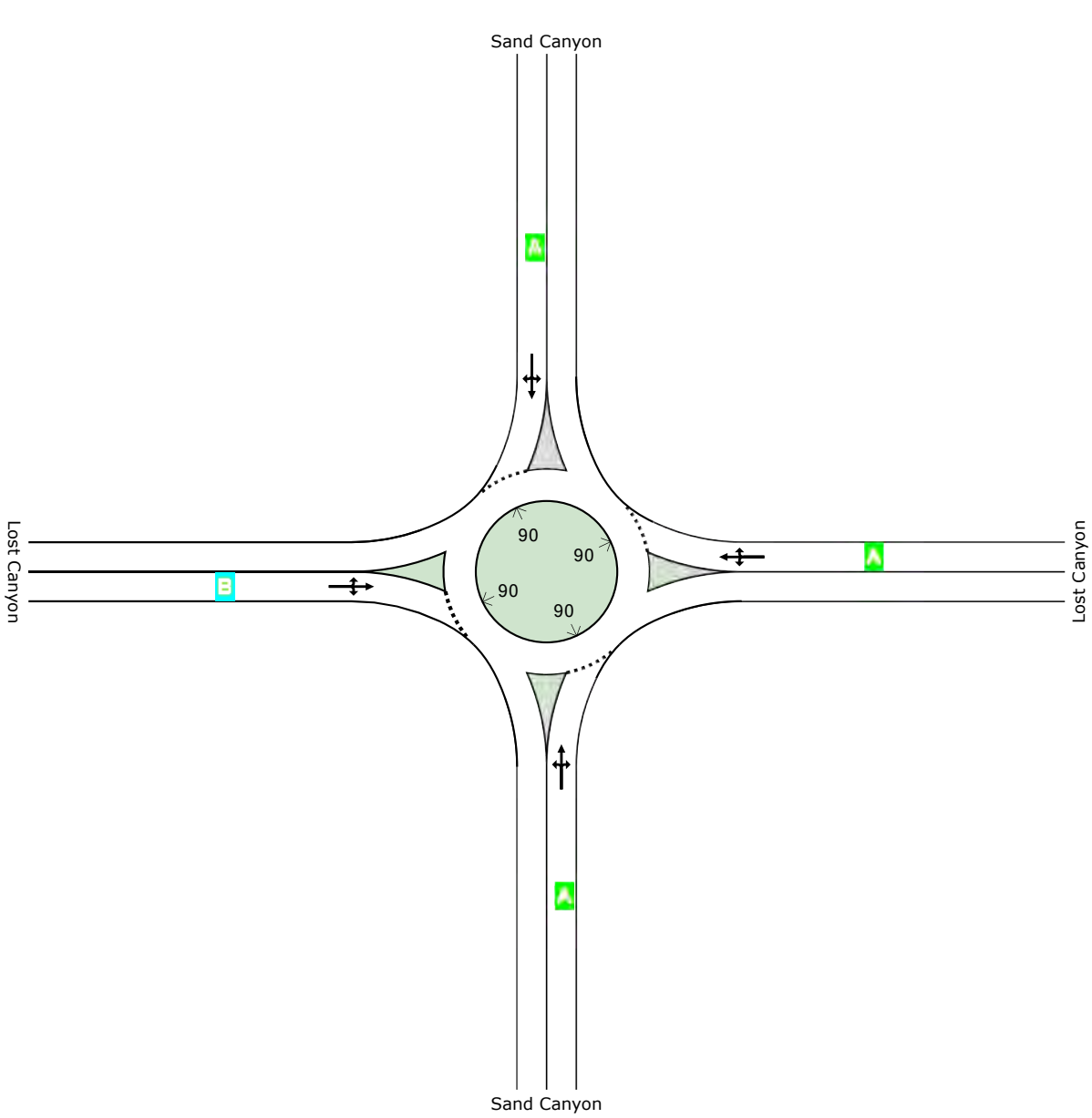
Approach	WB	NB	SB
HCM Control Delay, s	17.5	0	2.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	424	1086	-
HCM Lane V/C Ratio	-	-	0.323	0.106	-
HCM Control Delay (s)	-	-	17.5	8.7	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.4	0.4	-

LEVEL OF SERVICE

Site: Sand Canyon & Lost Canyon-2023np_AM

Opening Year (2023) No Project - AM Peak Hour
Roundabout



	South	East	North	West	Intersection
LOS	A	A	A	B	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

INTERSECTION SUMMARY

Site: Sand Canyon & Lost Canyon-2023np_AM

Opening Year (2023) No Project - AM Peak Hour
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1368	veh/h	1642	pers/h
Percent Heavy Vehicles (Demand)	2.0	%		
Degree of Saturation	0.494			
Practical Spare Capacity	72.0	%		
Effective Intersection Capacity	2769	veh/h		
Control Delay (Total)	2.18	veh-h/h	2.61	pers-h/h
Control Delay (Average)	5.7	sec	5.7	sec
Control Delay (Worst Lane)	10.2	sec		
Control Delay (Worst Movement)	12.4	sec	12.4	sec
Geometric Delay (Average)	4.2	sec		
Stop-Line Delay (Average)	1.5	sec		
Idling Time (Average)	0.0	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	3.9	veh		
95% Back of Queue - Distance (Worst Lane)	98.5	ft		
Queue Storage Ratio (Worst Lane)	0.30			
Total Effective Stops	700	veh/h	841	pers/h
Effective Stop Rate	0.51	per veh	0.51	per pers
Proportion Queued	0.44		0.44	
Performance Index	37.1		37.1	
Travel Distance (Total)	288.1	veh-mi/h	345.7	pers-mi/h
Travel Distance (Average)	1111	ft	1111	ft
Travel Time (Total)	12.2	veh-h/h	14.6	pers-h/h
Travel Time (Average)	32.0	sec	32.0	sec
Travel Speed	23.7	mph	23.7	mph
Cost (Total)	195.10	$/h	195.10	$/h
Fuel Consumption (Total)	7.1	gal/h		
Carbon Dioxide (Total)	63.8	kg/h		
Hydrocarbons (Total)	0.030	kg/h		
Carbon Monoxide (Total)	0.220	kg/h		
NOx (Total)	0.089	kg/h		

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	656,842	veh/y	788,210	pers/y
Delay	1,045	veh-h/y	1,254	pers-h/y
Effective Stops	336,234	veh/y	403,480	pers/y
Travel Distance	138,268	veh-mi/y	165,922	pers-mi/y
Travel Time	5,837	veh-h/y	7,005	pers-h/y
Cost	93,649	$/y	93,649	$/y
Fuel Consumption	3,432	gal/y		
Carbon Dioxide	30,601	kg/y		
Hydrocarbons	15	kg/y		
Carbon Monoxide	106	kg/y		
NOx	43	kg/y		

MOVEMENT SUMMARY

Site: Sand Canyon & Lost Canyon-2023np_AM

Opening Year (2023) No Project - AM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sand Canyon											
3	L2	45	2.0	0.418	11.0	LOS B	2.6	65.0	0.60	1.16	23.9
8	T1	308	2.0	0.418	4.6	LOS A	2.6	65.0	0.60	1.16	23.9
18	R2	2	2.0	0.418	6.0	LOS A	2.6	65.0	0.60	1.16	23.9
Approach		356	2.0	0.418	5.4	LOS A	2.6	65.0	0.60	0.58	23.9
East: Lost Canyon											
1	L2	2	2.0	0.044	12.4	LOS B	0.2	5.4	0.63	1.26	22.3
6	T1	7	2.0	0.044	6.1	LOS A	0.2	5.4	0.63	1.26	22.3
16	R2	19	2.0	0.044	7.5	LOS A	0.2	5.4	0.63	1.26	22.3
Approach		28	2.0	0.044	7.5	LOS A	0.2	5.4	0.63	0.63	22.3
North: Sand Canyon											
7	L2	20	2.0	0.494	8.9	LOS A	3.9	98.5	0.28	0.72	26.0
4	T1	285	2.0	0.494	2.5	LOS A	3.9	98.5	0.28	0.72	26.0
14	R2	339	2.0	0.494	3.9	LOS A	3.9	98.5	0.28	0.72	26.0
Approach		644	2.0	0.494	3.5	LOS A	3.9	98.5	0.28	0.36	26.0
West: Lost Canyon											
5	L2	300	2.0	0.386	10.8	LOS B	2.2	56.1	0.55	1.44	17.3
2	T1	3	2.0	0.386	4.5	LOS A	2.2	56.1	0.55	1.44	17.3
12	R2	37	2.0	0.386	5.8	LOS A	2.2	56.1	0.55	1.44	17.3
Approach		340	2.0	0.386	10.2	LOS B	2.2	56.1	0.55	0.72	17.3
All Vehicles		1368	2.0	0.494	5.7	LOS A	3.9	98.5	0.44	0.51	23.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 6

DELAY (AVERAGE)

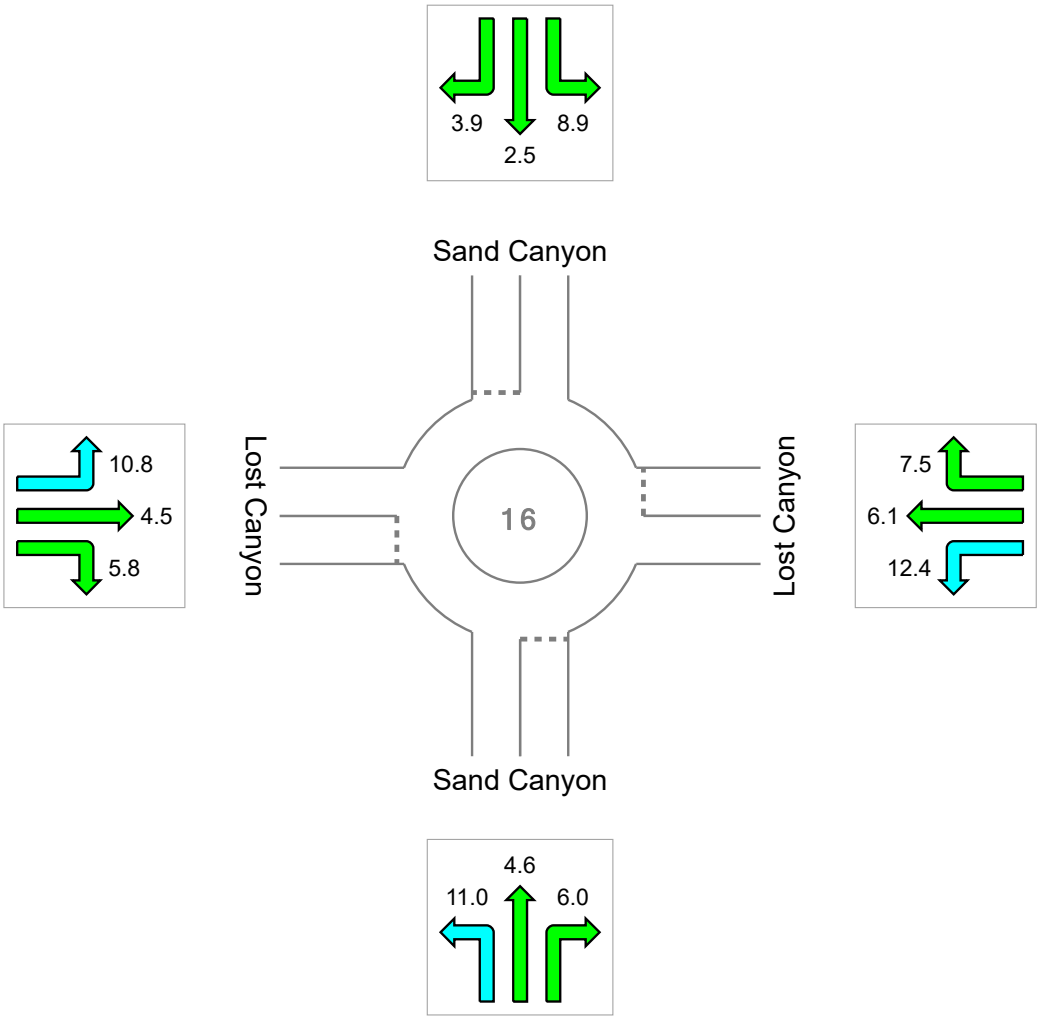
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: Sand Canyon & Lost Canyon-2023np_AM

Opening Year (2023) No Project - AM Peak Hour
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Delay (Average)	5.4	7.5	3.5	10.2	5.7
LOS	A	A	A	B	A



Colour code based on Level of Service

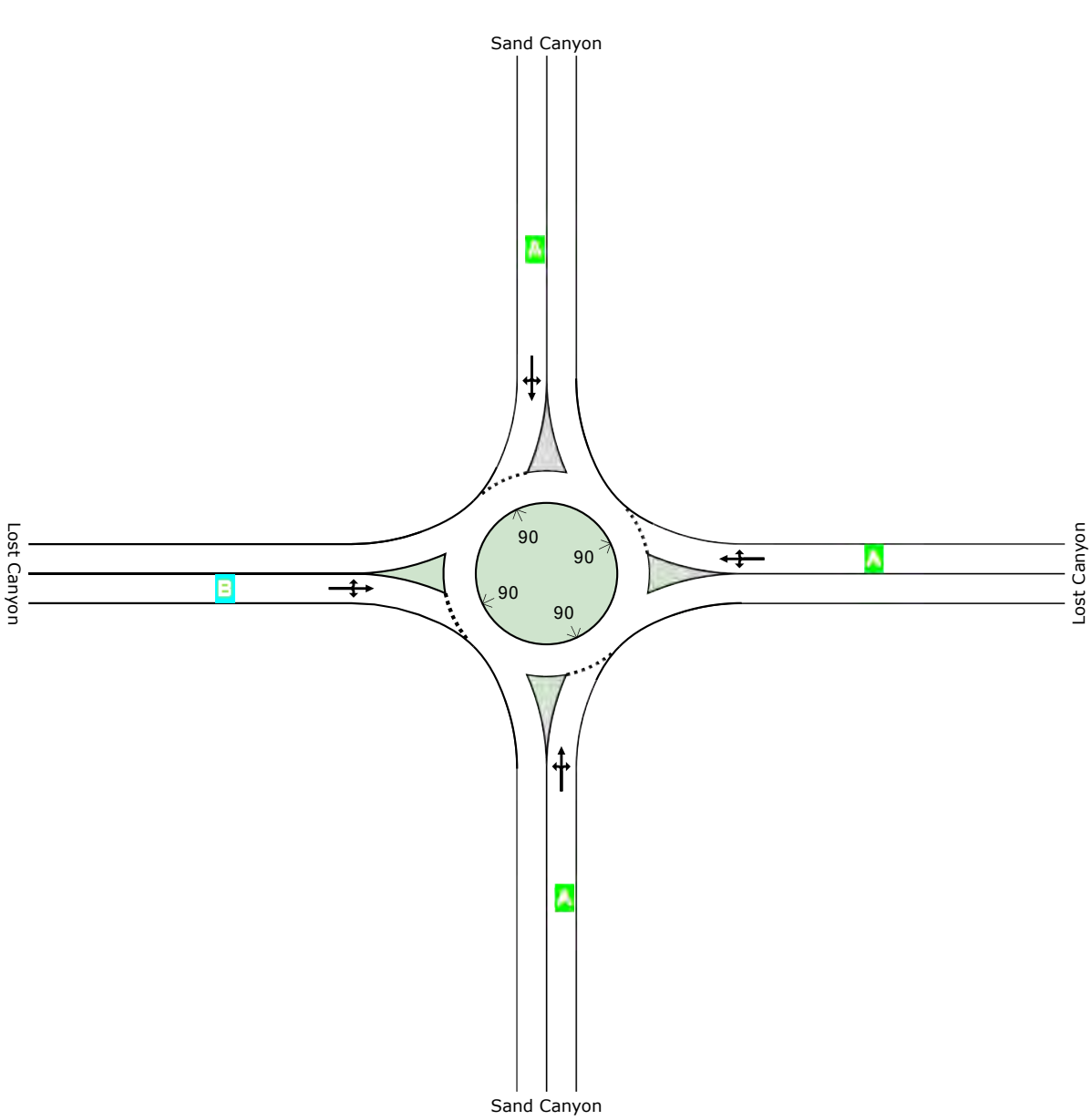
LOS A | LOS B | LOS C | LOS D | LOS E | LOS F | Continuous

Level of Service Method: Delay & v/c (HCM 2010)
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Roundabout Level of Service Method: Same as Signalised Intersections
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

LEVEL OF SERVICE

Site: Sand Canyon & Lost Canyon-2023np_PM

Opening Year (2023) No Project - PM Peak Hour
Roundabout



	South	East	North	West	Intersection
LOS	A	A	A	B	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

INTERSECTION SUMMARY

Site: Sand Canyon & Lost Canyon-2023np_PM

Opening Year (2023) No Project - PM Peak Hour
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	931	veh/h	1117	pers/h
Percent Heavy Vehicles (Demand)	2.0	%		
Degree of Saturation	0.376			
Practical Spare Capacity	125.8	%		
Effective Intersection Capacity	2472	veh/h		
Control Delay (Total)	0.77	veh-h/h	0.93	pers-h/h
Control Delay (Average)	3.0	sec	3.0	sec
Control Delay (Worst Lane)	10.2	sec		
Control Delay (Worst Movement)	11.2	sec	11.2	sec
Geometric Delay (Average)	2.7	sec		
Stop-Line Delay (Average)	0.3	sec		
Idling Time (Average)	0.0	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	2.3	veh		
95% Back of Queue - Distance (Worst Lane)	58.7	ft		
Queue Storage Ratio (Worst Lane)	0.09			
Total Effective Stops	286	veh/h	343	pers/h
Effective Stop Rate	0.31	per veh	0.31	per pers
Proportion Queued	0.17		0.17	
Performance Index	19.3		19.3	
Travel Distance (Total)	213.0	veh-mi/h	255.6	pers-mi/h
Travel Distance (Average)	1209	ft	1209	ft
Travel Time (Total)	8.1	veh-h/h	9.7	pers-h/h
Travel Time (Average)	31.2	sec	31.2	sec
Travel Speed	26.4	mph	26.4	mph
Cost (Total)	130.50	$/h	130.50	$/h
Fuel Consumption (Total)	4.9	gal/h		
Carbon Dioxide (Total)	43.9	kg/h		
Hydrocarbons (Total)	0.020	kg/h		
Carbon Monoxide (Total)	0.152	kg/h		
NOx (Total)	0.061	kg/h		

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	446,653	veh/y	535,983	pers/y
Delay	372	veh-h/y	446	pers-h/y
Effective Stops	137,155	veh/y	164,586	pers/y
Travel Distance	102,235	veh-mi/y	122,682	pers-mi/y
Travel Time	3,870	veh-h/y	4,644	pers-h/y
Cost	62,639	$/y	62,639	$/y
Fuel Consumption	2,365	gal/y		
Carbon Dioxide	21,091	kg/y		
Hydrocarbons	10	kg/y		
Carbon Monoxide	73	kg/y		
NOx	29	kg/y		

MOVEMENT SUMMARY

Site: Sand Canyon & Lost Canyon-2023np_PM

Opening Year (2023) No Project - PM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sand Canyon											
3	L2	2	2.0	0.376	8.9	LOS A	2.3	58.7	0.24	0.58	26.2
8	T1	459	2.0	0.376	2.5	LOS A	2.3	58.7	0.24	0.58	26.2
18	R2	14	2.0	0.376	3.9	LOS A	2.3	58.7	0.24	0.58	26.2
Approach		475	2.0	0.376	2.6	LOS A	2.3	58.7	0.24	0.29	26.2
East: Lost Canyon											
1	L2	1	2.0	0.028	11.2	LOS B	0.1	3.2	0.53	1.10	22.9
6	T1	2	2.0	0.028	4.8	LOS A	0.1	3.2	0.53	1.10	22.9
16	R2	18	2.0	0.028	6.2	LOS A	0.1	3.2	0.53	1.10	22.9
Approach		21	2.0	0.028	6.3	LOS A	0.1	3.2	0.53	0.55	22.9
North: Sand Canyon											
7	L2	26	2.0	0.260	8.5	LOS A	1.5	37.1	0.05	0.57	27.4
4	T1	359	2.0	0.260	2.2	LOS A	1.5	37.1	0.05	0.57	27.4
14	R2	14	2.0	0.260	3.5	LOS A	1.5	37.1	0.05	0.57	27.4
Approach		399	2.0	0.260	2.6	LOS A	1.5	37.1	0.05	0.28	27.4
West: Lost Canyon											
5	L2	34	2.0	0.042	10.5	LOS B	0.2	4.6	0.45	1.30	17.5
2	T1	1	2.0	0.042	4.2	LOS A	0.2	4.6	0.45	1.30	17.5
12	R2	1	2.0	0.042	5.6	LOS A	0.2	4.6	0.45	1.30	17.5
Approach		36	2.0	0.042	10.2	LOS B	0.2	4.6	0.45	0.65	17.5
All Vehicles		931	2.0	0.376	3.0	LOS A	2.3	58.7	0.17	0.31	26.4

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 6

DELAY (AVERAGE)

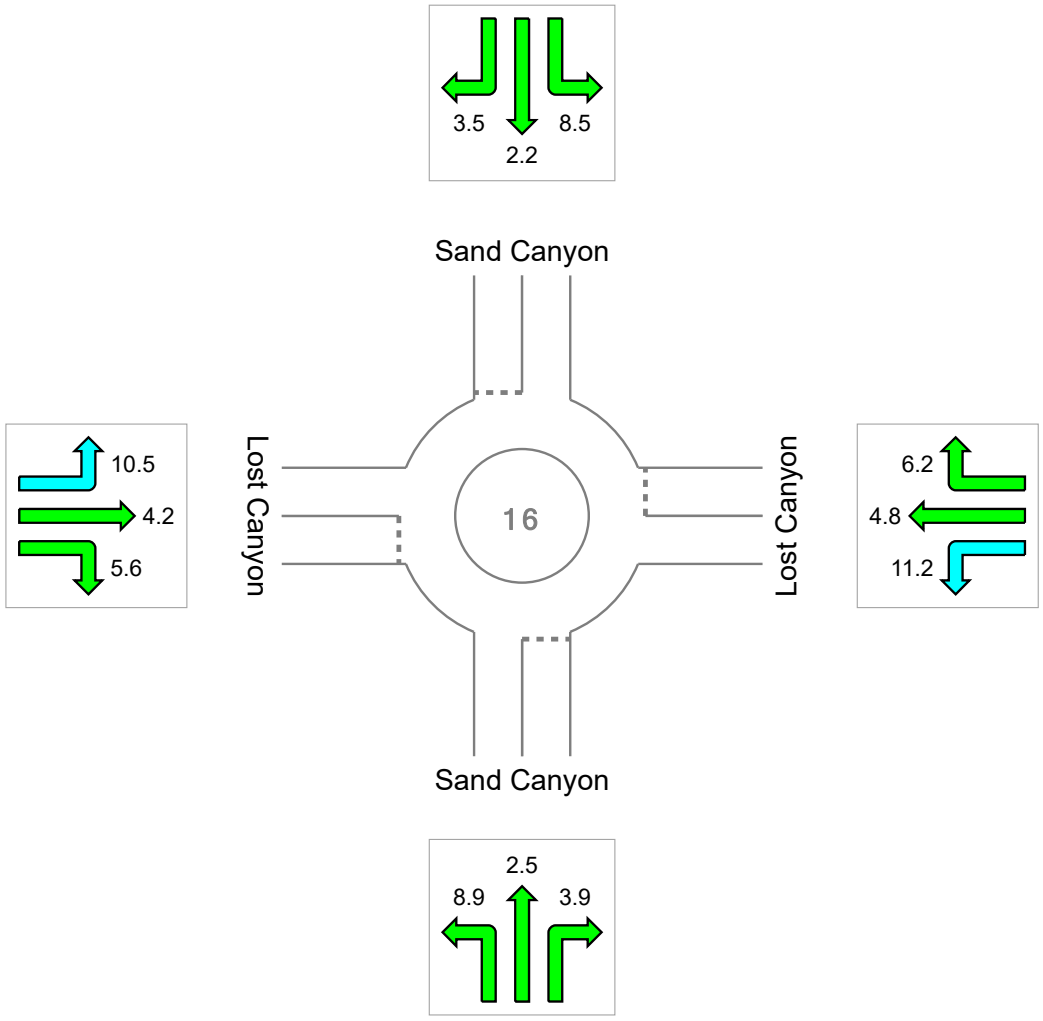
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: Sand Canyon & Lost Canyon-2023np_PM

Opening Year (2023) No Project - PM Peak Hour
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Delay (Average)	2.6	6.3	2.6	10.2	3.0
LOS	A	A	A	B	A



Colour code based on Level of Service

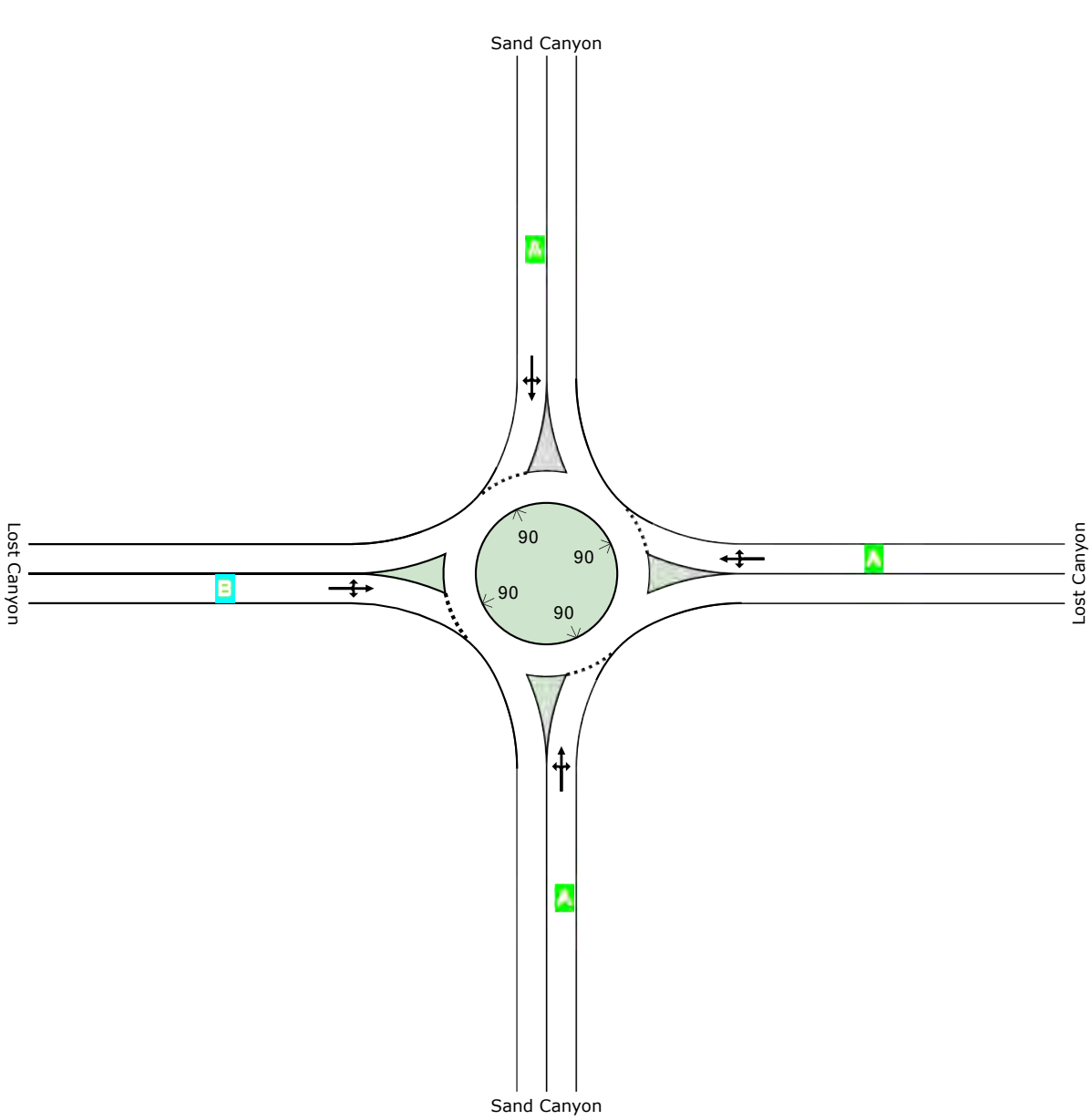
LOS A | LOS B | LOS C | LOS D | LOS E | LOS F | Continuous

Level of Service Method: Delay & v/c (HCM 2010)
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Roundabout Level of Service Method: Same as Signalised Intersections
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

LEVEL OF SERVICE

Site: Sand Canyon & Lost Canyon-2023wp_AM

Opening Year (2023) With Project - AM Peak Hour
Roundabout



	South	East	North	West	Intersection
LOS	A	A	A	B	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

INTERSECTION SUMMARY

Site: Sand Canyon & Lost Canyon-2023wp_AM

Opening Year (2023) With Project - AM Peak Hour
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1555	veh/h	1866	pers/h
Percent Heavy Vehicles (Demand)	2.0	%		
Degree of Saturation	0.575			
Practical Spare Capacity	47.9	%		
Effective Intersection Capacity	2706	veh/h		
Control Delay (Total)	2.53	veh-h/h	3.04	pers-h/h
Control Delay (Average)	5.9	sec	5.9	sec
Control Delay (Worst Lane)	11.0	sec		
Control Delay (Worst Movement)	13.2	sec	13.2	sec
Geometric Delay (Average)	4.0	sec		
Stop-Line Delay (Average)	1.8	sec		
Idling Time (Average)	0.1	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	5.2	veh		
95% Back of Queue - Distance (Worst Lane)	132.6	ft		
Queue Storage Ratio (Worst Lane)	0.34			
Total Effective Stops	836	veh/h	1003	pers/h
Effective Stop Rate	0.54	per veh	0.54	per pers
Proportion Queued	0.50		0.50	
Performance Index	46.2		46.2	
Travel Distance (Total)	331.8	veh-mi/h	398.2	pers-mi/h
Travel Distance (Average)	1127	ft	1127	ft
Travel Time (Total)	14.1	veh-h/h	16.9	pers-h/h
Travel Time (Average)	32.6	sec	32.6	sec
Travel Speed	23.6	mph	23.6	mph
Cost (Total)	225.61	$/h	225.61	$/h
Fuel Consumption (Total)	8.2	gal/h		
Carbon Dioxide (Total)	73.6	kg/h		
Hydrocarbons (Total)	0.035	kg/h		
Carbon Monoxide (Total)	0.255	kg/h		
NOx (Total)	0.102	kg/h		

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	746,274	veh/y	895,528	pers/y
Delay	1,214	veh-h/y	1,457	pers-h/y
Effective Stops	401,283	veh/y	481,540	pers/y
Travel Distance	159,273	veh-mi/y	191,128	pers-mi/y
Travel Time	6,756	veh-h/y	8,107	pers-h/y
Cost	108,294	$/y	108,294	$/y
Fuel Consumption	3,960	gal/y		
Carbon Dioxide	35,308	kg/y		
Hydrocarbons	17	kg/y		
Carbon Monoxide	122	kg/y		
NOx	49	kg/y		

MOVEMENT SUMMARY

Site: Sand Canyon & Lost Canyon-2023wp_AM

Opening Year (2023) With Project - AM Peak Hour
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sand Canyon											
3	L2	49	2.0	0.506	11.4	LOS B	3.5	90.0	0.66	1.26	23.7
8	T1	380	2.0	0.506	5.1	LOS A	3.5	90.0	0.66	1.26	23.7
18	R2	2	2.0	0.506	6.4	LOS A	3.5	90.0	0.66	1.26	23.7
Approach		432	2.0	0.506	5.8	LOS A	3.5	90.0	0.66	0.63	23.7
East: Lost Canyon											
1	L2	2	2.0	0.048	13.2	LOS B	0.2	6.2	0.67	1.33	21.8
6	T1	7	2.0	0.048	6.8	LOS A	0.2	6.2	0.67	1.33	21.8
16	R2	19	2.0	0.048	8.2	LOS A	0.2	6.2	0.67	1.33	21.8
Approach		28	2.0	0.048	8.2	LOS A	0.2	6.2	0.67	0.67	21.8
North: Sand Canyon											
7	L2	20	2.0	0.575	9.0	LOS A	5.2	132.6	0.34	0.73	25.8
4	T1	391	2.0	0.575	2.6	LOS A	5.2	132.6	0.34	0.73	25.8
14	R2	339	2.0	0.575	4.0	LOS A	5.2	132.6	0.34	0.73	25.8
Approach		749	2.0	0.575	3.4	LOS A	5.2	132.6	0.34	0.36	25.8
West: Lost Canyon											
5	L2	300	2.0	0.431	11.7	LOS B	2.6	65.2	0.65	1.58	16.8
2	T1	3	2.0	0.431	5.4	LOS A	2.6	65.2	0.65	1.58	16.8
12	R2	42	2.0	0.431	6.7	LOS A	2.6	65.2	0.65	1.58	16.8
Approach		345	2.0	0.431	11.0	LOS B	2.6	65.2	0.65	0.79	16.8
All Vehicles		1555	2.0	0.575	5.9	LOS A	5.2	132.6	0.50	0.54	23.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 6

DELAY (AVERAGE)

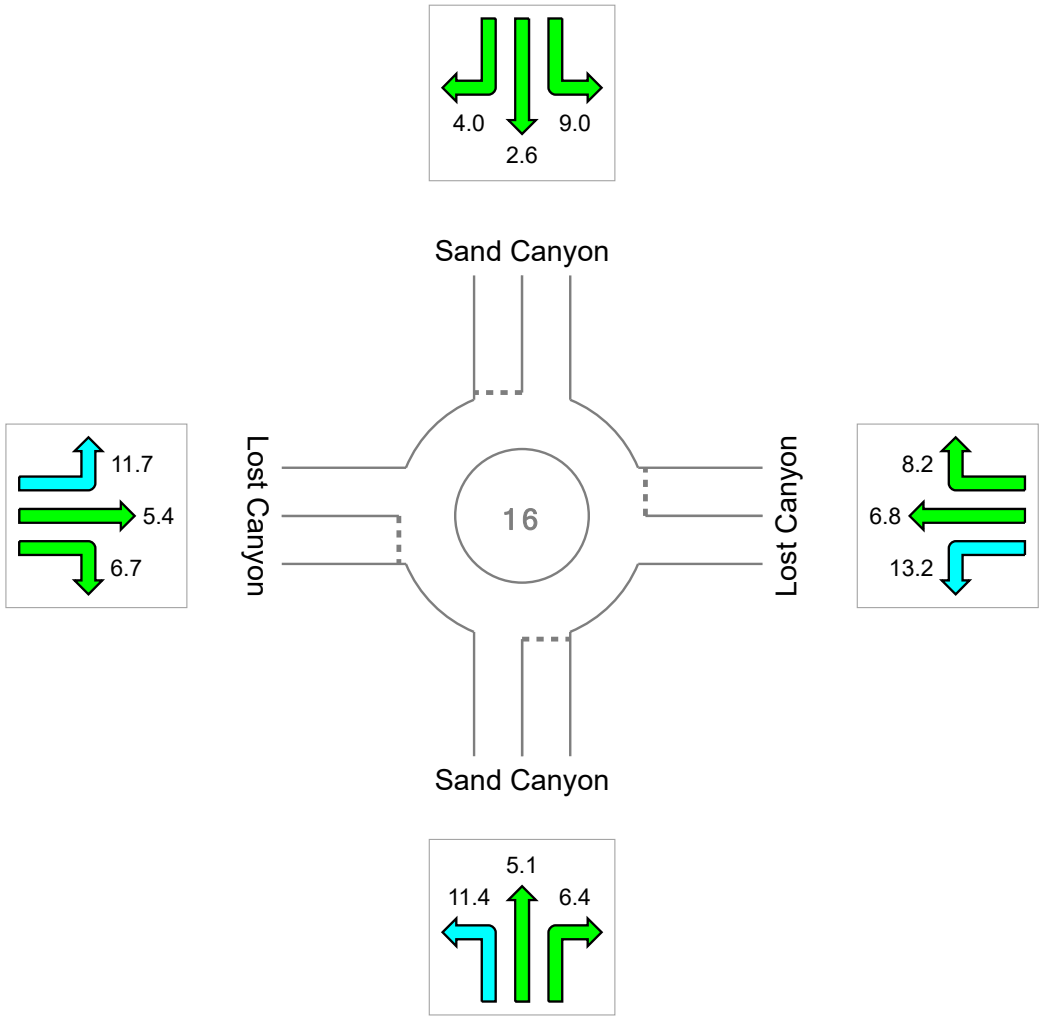
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: Sand Canyon & Lost Canyon-2023wp_AM

Opening Year (2023) With Project - AM Peak Hour
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Delay (Average)	5.8	8.2	3.4	11.0	5.9
LOS	A	A	A	B	A



Colour code based on Level of Service

LOS A | LOS B | LOS C | LOS D | LOS E | LOS F | Continuous

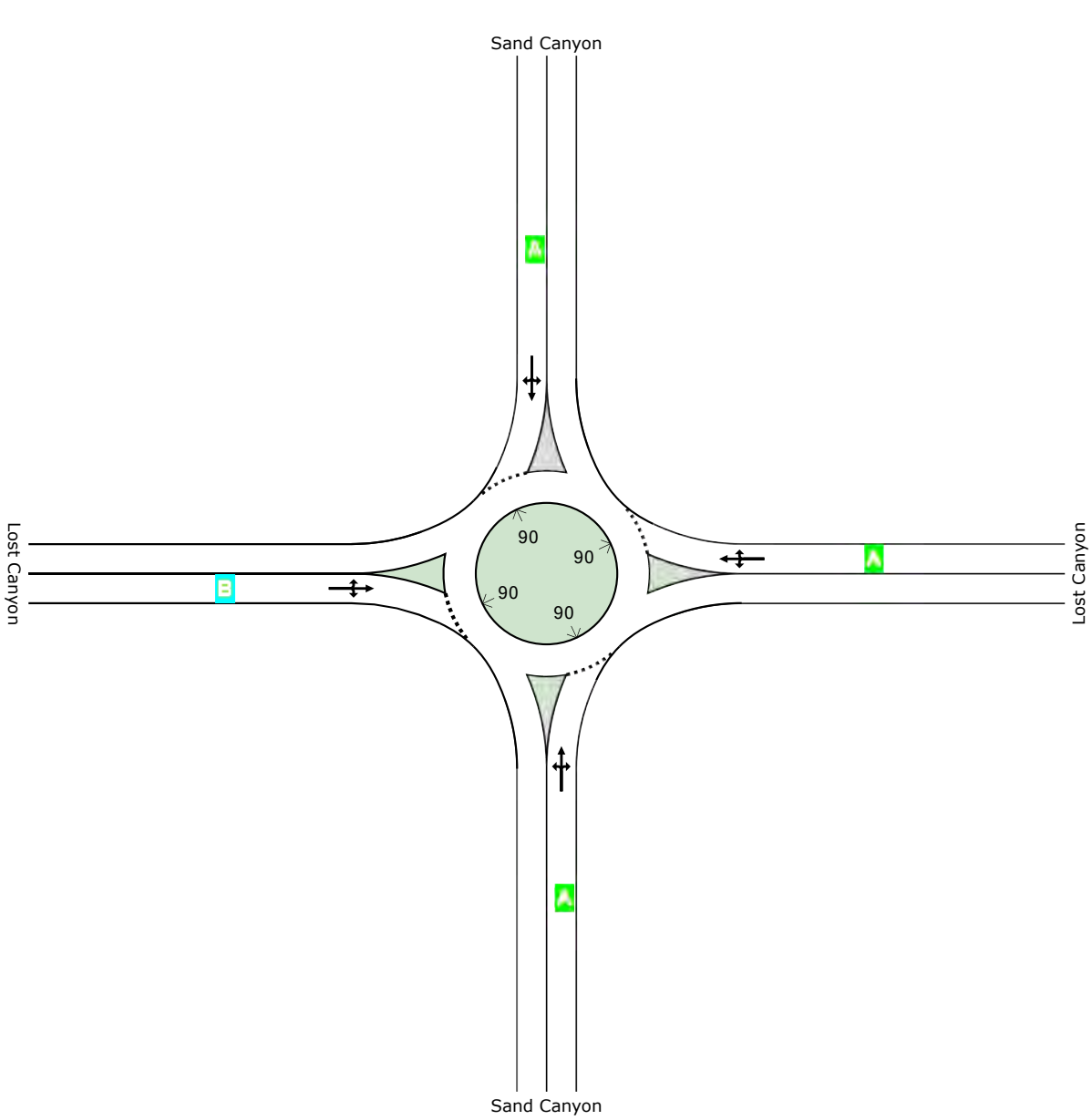
Level of Service Method: Delay & v/c (HCM 2010)
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Roundabout Level of Service Method: Same as Signalised Intersections
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

SIDRA INTERSECTION 6

LEVEL OF SERVICE

Site: Sand Canyon & Lost Canyon-2023wp_PM

Opening Year (2023) With Project - PM Peak Hour
Roundabout



	South	East	North	West	Intersection
LOS	A	A	A	B	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

INTERSECTION SUMMARY

Site: Sand Canyon & Lost Canyon-2023wp_PM

Opening Year (2023) With Project - PM Peak Hour
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1169	veh/h	1403	pers/h
Percent Heavy Vehicles (Demand)	2.0	%		
Degree of Saturation	0.461			
Practical Spare Capacity	84.4	%		
Effective Intersection Capacity	2538	veh/h		
Control Delay (Total)	0.97	veh-h/h	1.17	pers-h/h
Control Delay (Average)	3.0	sec	3.0	sec
Control Delay (Worst Lane)	10.3	sec		
Control Delay (Worst Movement)	12.0	sec	12.0	sec
Geometric Delay (Average)	2.6	sec		
Stop-Line Delay (Average)	0.4	sec		
Idling Time (Average)	0.0	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	3.2	veh		
95% Back of Queue - Distance (Worst Lane)	81.8	ft		
Queue Storage Ratio (Worst Lane)	0.12			
Total Effective Stops	360	veh/h	432	pers/h
Effective Stop Rate	0.31	per veh	0.31	per pers
Proportion Queued	0.20		0.20	
Performance Index	25.6		25.6	
Travel Distance (Total)	268.5	veh-mi/h	322.2	pers-mi/h
Travel Distance (Average)	1212	ft	1212	ft
Travel Time (Total)	10.2	veh-h/h	12.2	pers-h/h
Travel Time (Average)	31.4	sec	31.4	sec
Travel Speed	26.3	mph	26.3	mph
Cost (Total)	165.13	$/h	165.13	$/h
Fuel Consumption (Total)	6.2	gal/h		
Carbon Dioxide (Total)	55.5	kg/h		
Hydrocarbons (Total)	0.025	kg/h		
Carbon Monoxide (Total)	0.192	kg/h		
NOx (Total)	0.077	kg/h		

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	561,347	veh/y	673,617	pers/y
Delay	467	veh-h/y	561	pers-h/y
Effective Stops	172,794	veh/y	207,353	pers/y
Travel Distance	128,881	veh-mi/y	154,657	pers-mi/y
Travel Time	4,899	veh-h/y	5,879	pers-h/y
Cost	79,261	$/y	79,261	$/y
Fuel Consumption	2,988	gal/y		
Carbon Dioxide	26,647	kg/y		
Hydrocarbons	12	kg/y		
Carbon Monoxide	92	kg/y		
NOx	37	kg/y		

MOVEMENT SUMMARY

Site: Sand Canyon & Lost Canyon-2023wp_PM

Opening Year (2023) With Project - PM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sand Canyon											
3	L2	8	2.0	0.461	8.9	LOS A	3.2	81.8	0.27	0.60	26.0
8	T1	568	2.0	0.461	2.6	LOS A	3.2	81.8	0.27	0.60	26.0
18	R2	14	2.0	0.461	3.9	LOS A	3.2	81.8	0.27	0.60	26.0
Approach		591	2.0	0.461	2.7	LOS A	3.2	81.8	0.27	0.30	26.0
East: Lost Canyon											
1	L2	1	2.0	0.031	12.0	LOS B	0.1	3.7	0.59	1.19	22.5
6	T1	2	2.0	0.031	5.7	LOS A	0.1	3.7	0.59	1.19	22.5
16	R2	18	2.0	0.031	7.1	LOS A	0.1	3.7	0.59	1.19	22.5
Approach		21	2.0	0.031	7.2	LOS A	0.1	3.7	0.59	0.59	22.5
North: Sand Canyon											
7	L2	26	2.0	0.346	8.5	LOS A	2.1	52.2	0.08	0.55	27.3
4	T1	476	2.0	0.346	2.2	LOS A	2.1	52.2	0.08	0.55	27.3
14	R2	14	2.0	0.346	3.6	LOS A	2.1	52.2	0.08	0.55	27.3
Approach		516	2.0	0.346	2.6	LOS A	2.1	52.2	0.08	0.27	27.3
West: Lost Canyon											
5	L2	34	2.0	0.055	11.3	LOS B	0.2	6.2	0.52	1.36	17.2
2	T1	1	2.0	0.055	5.0	LOS A	0.2	6.2	0.52	1.36	17.2
12	R2	7	2.0	0.055	6.4	LOS A	0.2	6.2	0.52	1.36	17.2
Approach		42	2.0	0.055	10.3	LOS B	0.2	6.2	0.52	0.68	17.2
All Vehicles		1169	2.0	0.461	3.0	LOS A	3.2	81.8	0.20	0.31	26.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 6

DELAY (AVERAGE)

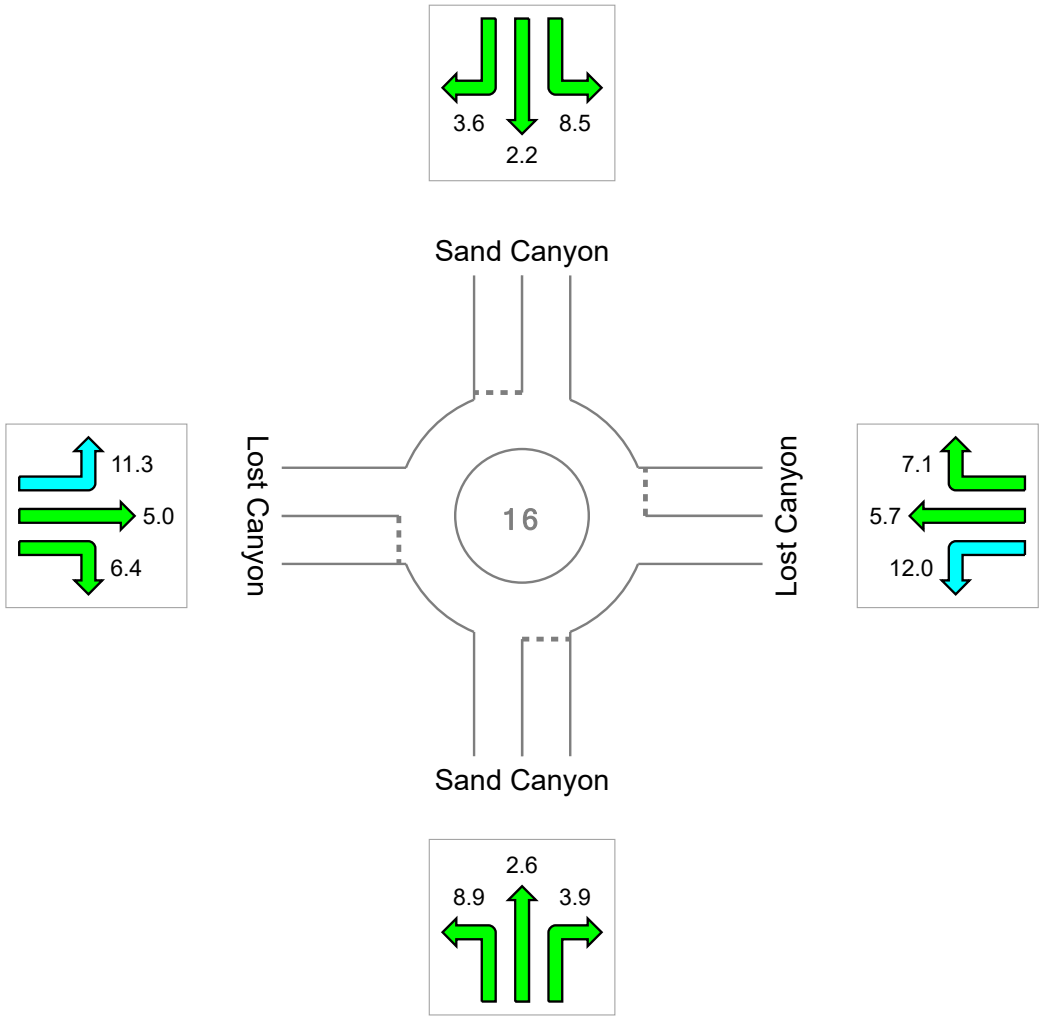
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: Sand Canyon & Lost Canyon-2023wp_PM

Opening Year (2023) With Project - PM Peak Hour
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Delay (Average)	2.7	7.2	2.6	10.3	3.0
LOS	A	A	A	B	A



Colour code based on Level of Service

LOS A | LOS B | LOS C | LOS D | LOS E | LOS F | Continuous

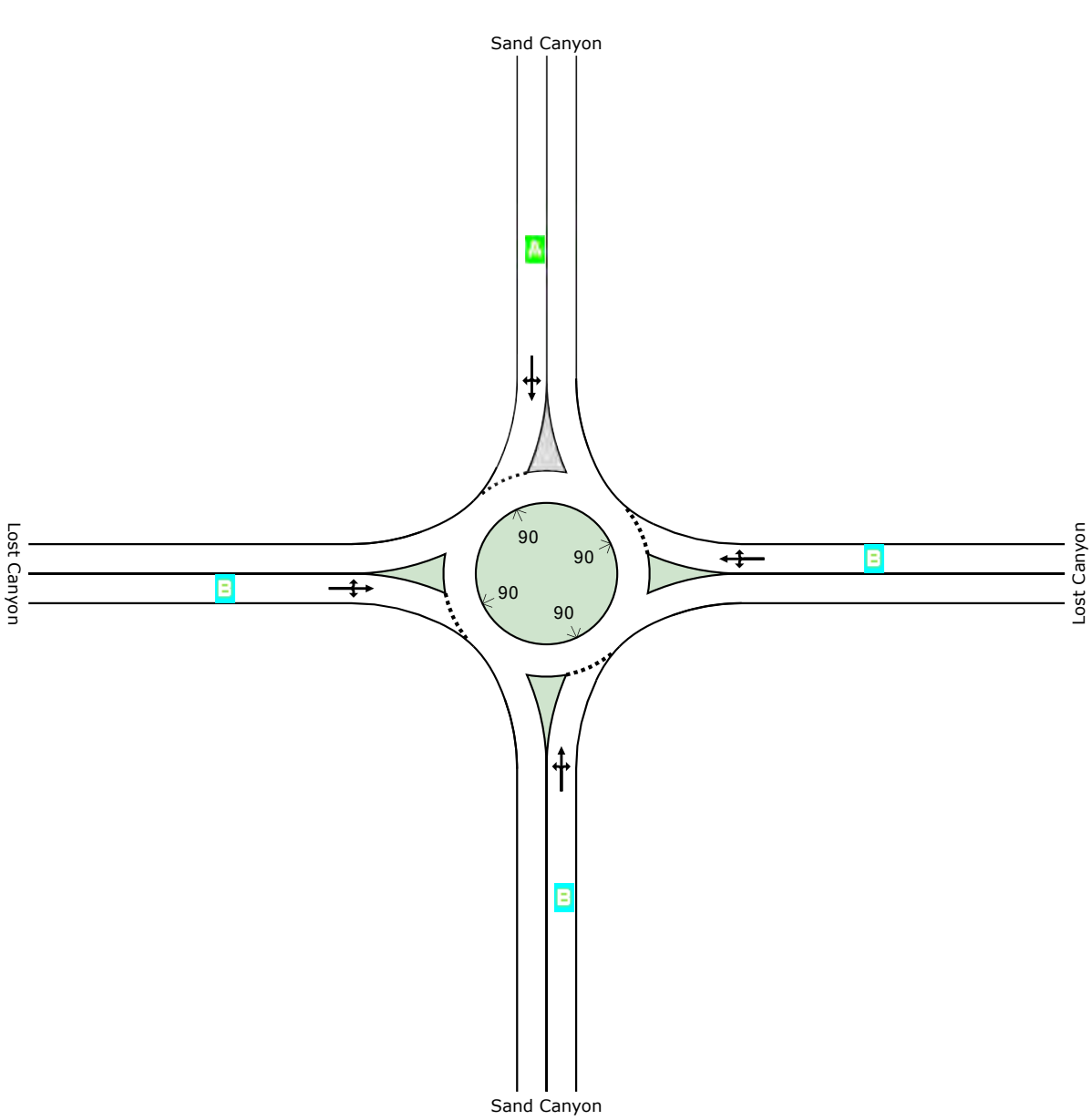
Level of Service Method: Delay & v/c (HCM 2010)
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Roundabout Level of Service Method: Same as Signalised Intersections
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

SIDRA INTERSECTION 6

LEVEL OF SERVICE

Site: Sand Canyon & Lost Canyon-2028np_AM

Interim Year (2028) No Project - AM Peak Hour
Roundabout



	South	East	North	West	Intersection
LOS	B	B	A	B	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

INTERSECTION SUMMARY

Site: Sand Canyon & Lost Canyon-2028np_AM

Interim Year (2028) No Project - AM Peak Hour
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	2000	veh/h	2400	pers/h
Percent Heavy Vehicles (Demand)	2.0	%		
Degree of Saturation	0.789			
Practical Spare Capacity	7.7	%		
Effective Intersection Capacity	2534	veh/h		
Control Delay (Total)	5.36	veh-h/h	6.44	pers-h/h
Control Delay (Average)	9.7	sec	9.7	sec
Control Delay (Worst Lane)	12.0	sec		
Control Delay (Worst Movement)	16.7	sec	16.7	sec
Geometric Delay (Average)	4.4	sec		
Stop-Line Delay (Average)	5.3	sec		
Idling Time (Average)	0.7	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	11.1	veh		
95% Back of Queue - Distance (Worst Lane)	282.7	ft		
Queue Storage Ratio (Worst Lane)	0.72			
Total Effective Stops	1692	veh/h	2030	pers/h
Effective Stop Rate	0.85	per veh	0.85	per pers
Proportion Queued	0.84		0.84	
Performance Index	92.5		92.5	
Travel Distance (Total)	416.0	veh-mi/h	499.2	pers-mi/h
Travel Distance (Average)	1098	ft	1098	ft
Travel Time (Total)	19.6	veh-h/h	23.5	pers-h/h
Travel Time (Average)	35.2	sec	35.2	sec
Travel Speed	21.3	mph	21.3	mph
Cost (Total)	311.19	$/h	311.19	$/h
Fuel Consumption (Total)	11.0	gal/h		
Carbon Dioxide (Total)	98.5	kg/h		
Hydrocarbons (Total)	0.049	kg/h		
Carbon Monoxide (Total)	0.341	kg/h		
NOx (Total)	0.135	kg/h		

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	960,000	veh/y	1,152,000	pers/y
Delay	2,575	veh-h/y	3,090	pers-h/y
Effective Stops	812,085	veh/y	974,502	pers/y
Travel Distance	199,696	veh-mi/y	239,635	pers-mi/y
Travel Time	9,388	veh-h/y	11,265	pers-h/y
Cost	149,370	$/y	149,370	$/y
Fuel Consumption	5,301	gal/y		
Carbon Dioxide	47,273	kg/y		
Hydrocarbons	24	kg/y		
Carbon Monoxide	164	kg/y		
NOx	65	kg/y		

MOVEMENT SUMMARY

Site: Sand Canyon & Lost Canyon-2028np_AM

Interim Year (2028) No Project - AM Peak Hour
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sand Canyon											
3	L2	147	2.0	0.756	16.7	LOS B	9.1	231.0	0.92	2.10	20.7
8	T1	432	2.0	0.756	10.4	LOS B	9.1	231.0	0.92	2.10	20.7
18	R2	11	2.0	0.756	11.8	LOS B	9.1	231.0	0.92	2.10	20.7
Approach		589	2.0	0.756	12.0	LOS B	9.1	231.0	0.92	1.05	20.7
East: Lost Canyon											
1	L2	11	2.0	0.149	16.6	LOS B	0.9	22.1	0.83	1.71	19.4
6	T1	21	2.0	0.149	10.3	LOS B	0.9	22.1	0.83	1.71	19.4
16	R2	32	2.0	0.149	11.6	LOS B	0.9	22.1	0.83	1.71	19.4
Approach		63	2.0	0.149	12.0	LOS B	0.9	22.1	0.83	0.86	19.4
North: Sand Canyon											
7	L2	21	2.0	0.789	12.2	LOS B	11.1	282.7	0.83	1.40	23.7
4	T1	305	2.0	0.789	5.8	LOS A	11.1	282.7	0.83	1.40	23.7
14	R2	516	2.0	0.789	7.2	LOS A	11.1	282.7	0.83	1.40	23.7
Approach		842	2.0	0.789	6.8	LOS A	11.1	282.7	0.83	0.70	23.7
West: Lost Canyon											
5	L2	379	2.0	0.606	12.6	LOS B	5.4	135.9	0.76	1.70	16.4
2	T1	11	2.0	0.606	6.3	LOS A	5.4	135.9	0.76	1.70	16.4
12	R2	116	2.0	0.606	7.6	LOS A	5.4	135.9	0.76	1.70	16.4
Approach		505	2.0	0.606	11.3	LOS B	5.4	135.9	0.76	0.85	16.4
All Vehicles		2000	2.0	0.789	9.7	LOS A	11.1	282.7	0.84	0.85	21.3

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 6

DELAY (AVERAGE)

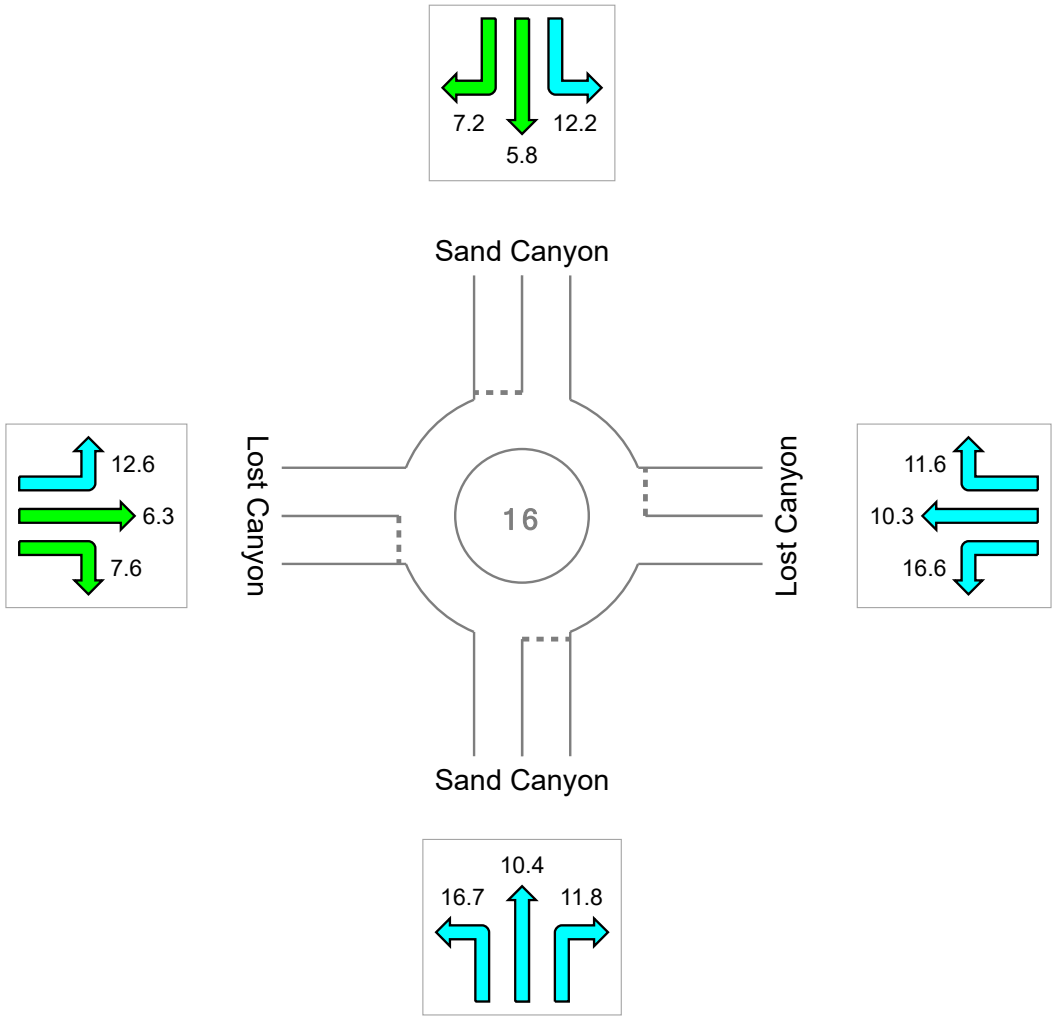
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: Sand Canyon & Lost Canyon-2028np_AM

Interim Year (2028) No Project - AM Peak Hour
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Delay (Average)	12.0	12.0	6.8	11.3	9.7
LOS	B	B	A	B	A



Colour code based on Level of Service

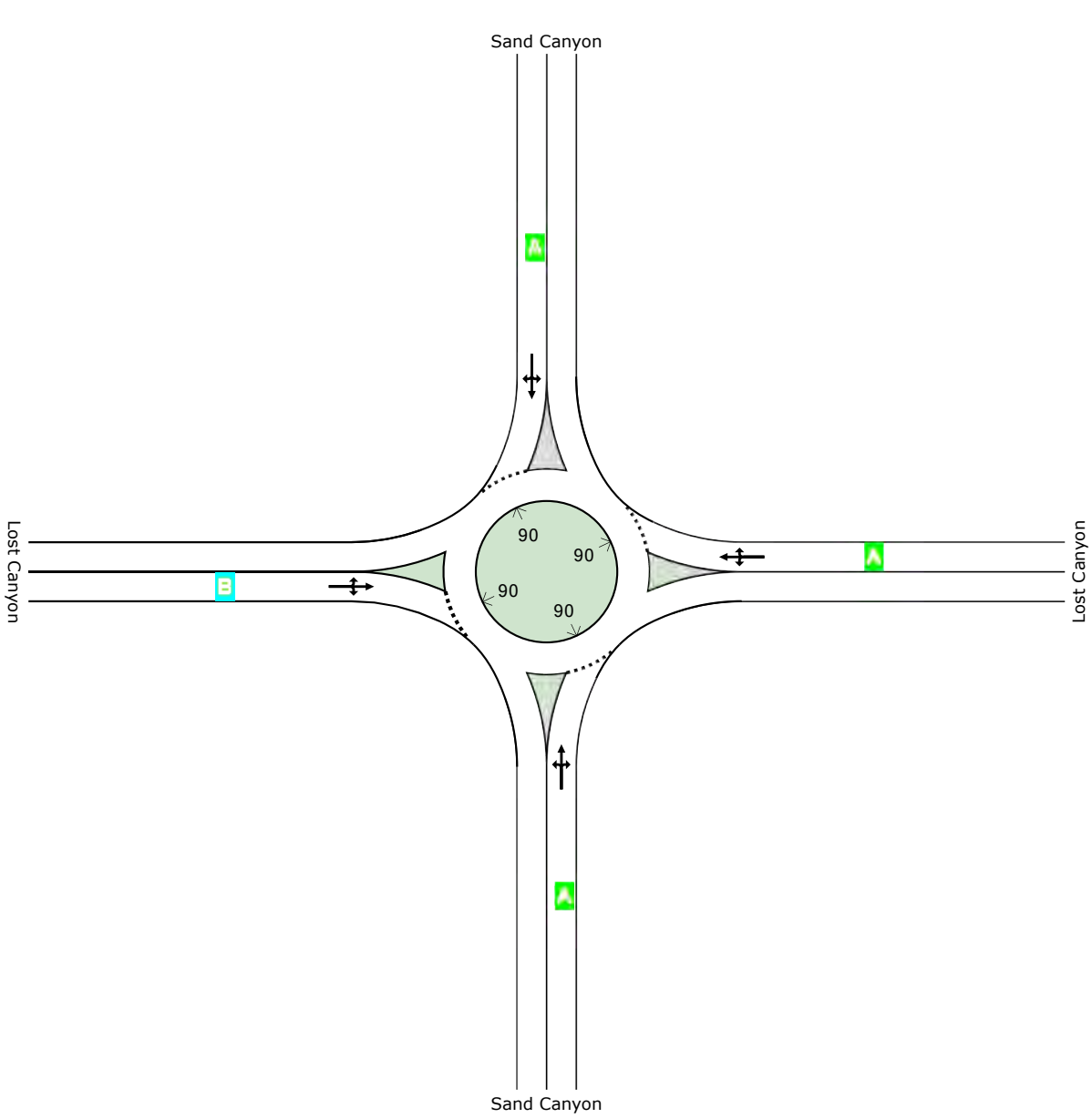
LOS A | LOS B | LOS C | LOS D | LOS E | LOS F | Continuous

Level of Service Method: Delay & v/c (HCM 2010)
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Roundabout Level of Service Method: Same as Signalised Intersections
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

LEVEL OF SERVICE

Site: Sand Canyon & Lost Canyon-2028np_PM

Interim Year (2028) No Project - PM Peak Hour
Roundabout



	South	East	North	West	Intersection
LOS	A	A	A	B	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

INTERSECTION SUMMARY

Site: Sand Canyon & Lost Canyon-2028np_PM

Interim Year (2028) No Project - PM Peak Hour
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1526	veh/h	1832	pers/h
Percent Heavy Vehicles (Demand)	2.0	%		
Degree of Saturation	0.618			
Practical Spare Capacity	37.6	%		
Effective Intersection Capacity	2472	veh/h		
Control Delay (Total)	2.45	veh-h/h	2.94	pers-h/h
Control Delay (Average)	5.8	sec	5.8	sec
Control Delay (Worst Lane)	10.2	sec		
Control Delay (Worst Movement)	13.8	sec	13.8	sec
Geometric Delay (Average)	3.6	sec		
Stop-Line Delay (Average)	2.2	sec		
Idling Time (Average)	0.2	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	5.4	veh		
95% Back of Queue - Distance (Worst Lane)	136.9	ft		
Queue Storage Ratio (Worst Lane)	0.29			
Total Effective Stops	862	veh/h	1035	pers/h
Effective Stop Rate	0.57	per veh	0.57	per pers
Proportion Queued	0.54		0.54	
Performance Index	45.8		45.8	
Travel Distance (Total)	321.6	veh-mi/h	385.9	pers-mi/h
Travel Distance (Average)	1112	ft	1112	ft
Travel Time (Total)	13.6	veh-h/h	16.4	pers-h/h
Travel Time (Average)	32.1	sec	32.1	sec
Travel Speed	23.6	mph	23.6	mph
Cost (Total)	218.73	$/h	218.73	$/h
Fuel Consumption (Total)	8.0	gal/h		
Carbon Dioxide (Total)	71.4	kg/h		
Hydrocarbons (Total)	0.034	kg/h		
Carbon Monoxide (Total)	0.247	kg/h		
NOx (Total)	0.100	kg/h		

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	732,632	veh/y	879,158	pers/y
Delay	1,175	veh-h/y	1,410	pers-h/y
Effective Stops	413,947	veh/y	496,737	pers/y
Travel Distance	154,354	veh-mi/y	185,224	pers-mi/y
Travel Time	6,541	veh-h/y	7,850	pers-h/y
Cost	104,989	$/y	104,989	$/y
Fuel Consumption	3,843	gal/y		
Carbon Dioxide	34,273	kg/y		
Hydrocarbons	16	kg/y		
Carbon Monoxide	119	kg/y		
NOx	48	kg/y		

MOVEMENT SUMMARY

Site: Sand Canyon & Lost Canyon-2028np_PM

Interim Year (2028) No Project - PM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sand Canyon											
3	L2	42	2.0	0.618	11.4	LOS B	5.4	136.9	0.68	1.27	23.7
8	T1	526	2.0	0.618	5.1	LOS A	5.4	136.9	0.68	1.27	23.7
18	R2	21	2.0	0.618	6.4	LOS A	5.4	136.9	0.68	1.27	23.7
Approach		589	2.0	0.618	5.6	LOS A	5.4	136.9	0.68	0.64	23.7
East: Lost Canyon											
1	L2	11	2.0	0.115	13.8	LOS B	0.6	15.9	0.73	1.52	21.1
6	T1	21	2.0	0.115	7.5	LOS A	0.6	15.9	0.73	1.52	21.1
16	R2	32	2.0	0.115	8.9	LOS A	0.6	15.9	0.73	1.52	21.1
Approach		63	2.0	0.115	9.2	LOS A	0.6	15.9	0.73	0.76	21.1
North: Sand Canyon											
7	L2	32	2.0	0.465	9.0	LOS A	3.3	84.6	0.31	0.72	26.0
4	T1	421	2.0	0.465	2.7	LOS A	3.3	84.6	0.31	0.72	26.0
14	R2	126	2.0	0.465	4.0	LOS A	3.3	84.6	0.31	0.72	26.0
Approach		579	2.0	0.465	3.3	LOS A	3.3	84.6	0.31	0.36	26.0
West: Lost Canyon											
5	L2	200	2.0	0.382	11.9	LOS B	2.2	55.2	0.65	1.57	17.0
2	T1	21	2.0	0.382	5.6	LOS A	2.2	55.2	0.65	1.57	17.0
12	R2	74	2.0	0.382	7.0	LOS A	2.2	55.2	0.65	1.57	17.0
Approach		295	2.0	0.382	10.2	LOS B	2.2	55.2	0.65	0.78	17.0
All Vehicles		1526	2.0	0.618	5.8	LOS A	5.4	136.9	0.54	0.57	23.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

DELAY (AVERAGE)

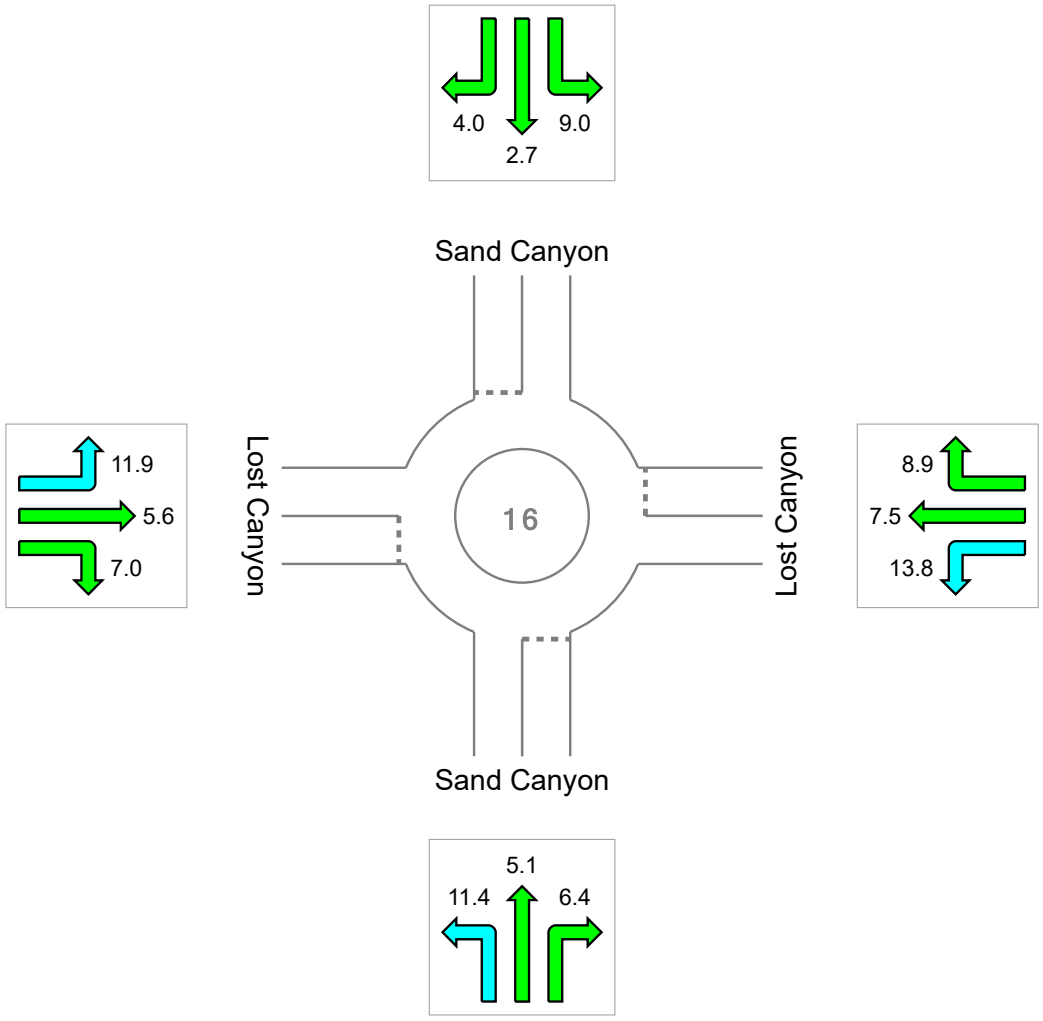
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: Sand Canyon & Lost Canyon-2028np_PM

Interim Year (2028) No Project - PM Peak Hour
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Delay (Average)	5.6	9.2	3.3	10.2	5.8
LOS	A	A	A	B	A



Colour code based on Level of Service

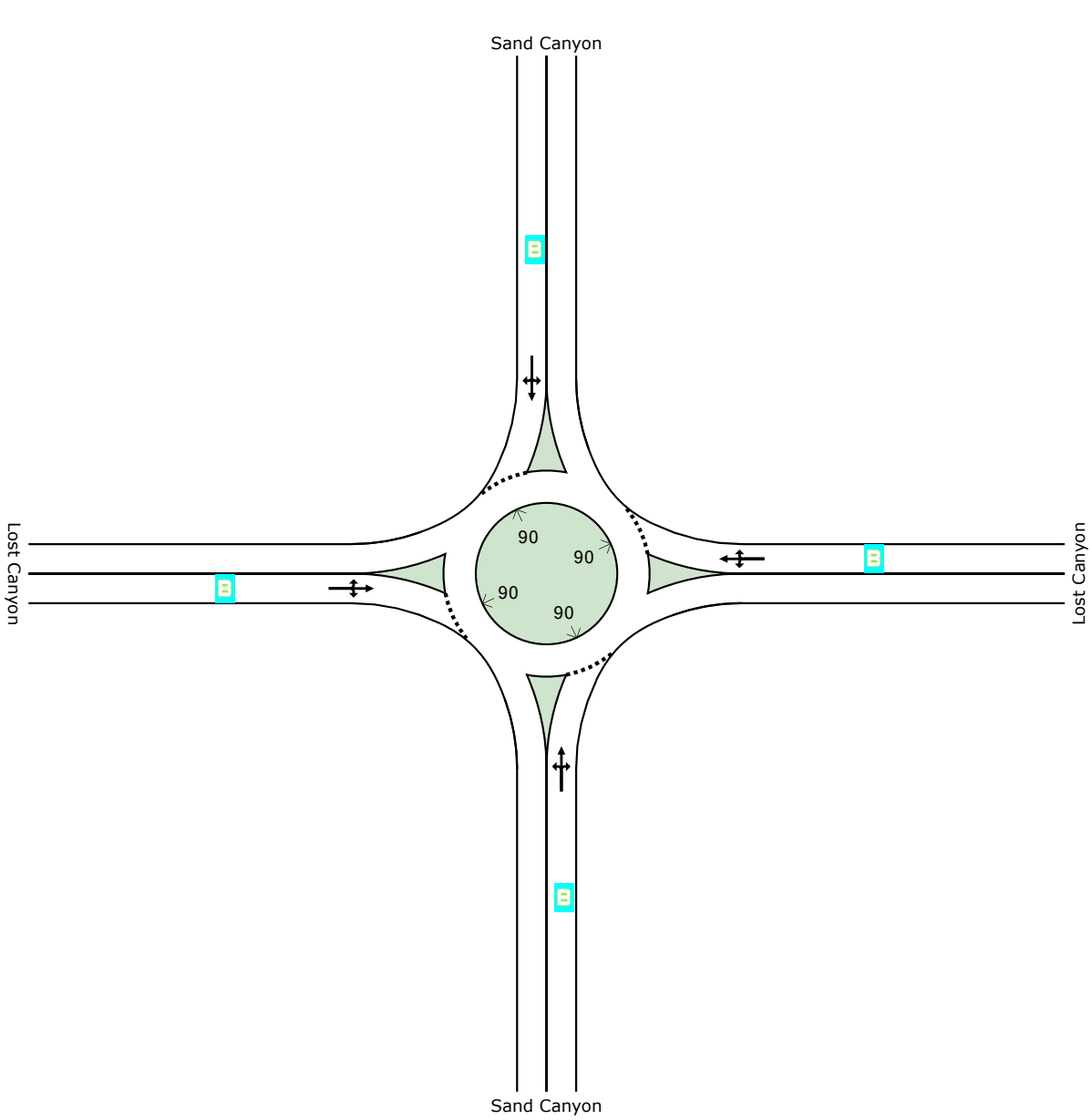
LOS A | LOS B | LOS C | LOS D | LOS E | LOS F | Continuous

Level of Service Method: Delay & v/c (HCM 2010)
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Roundabout Level of Service Method: Same as Signalised Intersections
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

LEVEL OF SERVICE

Site: Sand Canyon & Lost Canyon-2028wp_AM

Interim Year (2028) With Project - AM Peak Hour
Roundabout



	South	East	North	West	Intersection
LOS	B	B	B	B	B

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

INTERSECTION SUMMARY

Site: Sand Canyon & Lost Canyon-2028wp_AM

Interim Year (2028) With Project - AM Peak Hour
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	2186	veh/h	2624	pers/h
Percent Heavy Vehicles (Demand)	2.0	%		
Degree of Saturation	0.888			
Practical Spare Capacity	-4.3	%		
Effective Intersection Capacity	2461	veh/h		
Control Delay (Total)	7.94	veh-h/h	9.53	pers-h/h
Control Delay (Average)	13.1	sec	13.1	sec
Control Delay (Worst Lane)	16.1	sec		
Control Delay (Worst Movement)	21.0	sec	21.0	sec
Geometric Delay (Average)	4.2	sec		
Stop-Line Delay (Average)	8.9	sec		
Idling Time (Average)	1.8	sec		
Intersection Level of Service (LOS)	LOS B			
95% Back of Queue - Vehicles (Worst Lane)	18.6	veh		
95% Back of Queue - Distance (Worst Lane)	472.6	ft		
Queue Storage Ratio (Worst Lane)	1.02			
Total Effective Stops	2226	veh/h	2671	pers/h
Effective Stop Rate	1.02	per veh	1.02	per pers
Proportion Queued	0.98		0.98	
Performance Index	135.0		135.0	
Travel Distance (Total)	459.8	veh-mi/h	551.8	pers-mi/h
Travel Distance (Average)	1110	ft	1110	ft
Travel Time (Total)	23.3	veh-h/h	27.9	pers-h/h
Travel Time (Average)	38.4	sec	38.4	sec
Travel Speed	19.7	mph	19.7	mph
Cost (Total)	368.95	$/h	368.95	$/h
Fuel Consumption (Total)	12.8	gal/h		
Carbon Dioxide (Total)	114.2	kg/h		
Hydrocarbons (Total)	0.059	kg/h		
Carbon Monoxide (Total)	0.396	kg/h		
NOx (Total)	0.154	kg/h		

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1,049,432	veh/y	1,259,318	pers/y
Delay	3,813	veh-h/y	4,576	pers-h/y
Effective Stops	1,068,524	veh/y	1,282,229	pers/y
Travel Distance	220,701	veh-mi/y	264,841	pers-mi/y
Travel Time	11,179	veh-h/y	13,415	pers-h/y
Cost	177,097	$/y	177,097	$/y
Fuel Consumption	6,148	gal/y		
Carbon Dioxide	54,819	kg/y		
Hydrocarbons	28	kg/y		
Carbon Monoxide	190	kg/y		
NOx	74	kg/y		

MOVEMENT SUMMARY

Site: Sand Canyon & Lost Canyon-2028wp_AM

Interim Year (2028) With Project - AM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sand Canyon											
3	L2	152	2.0	0.859	21.0	LOS C	13.9	352.7	1.00	2.46	18.7
8	T1	503	2.0	0.859	14.7	LOS B	13.9	352.7	1.00	2.46	18.7
18	R2	11	2.0	0.859	16.0	LOS B	13.9	352.7	1.00	2.46	18.7
Approach		665	2.0	0.859	16.1	LOS B	13.9	352.7	1.00	1.23	18.7
East: Lost Canyon											
1	L2	11	2.0	0.174	18.1	LOS B	1.1	26.7	0.88	1.81	18.6
6	T1	21	2.0	0.174	11.8	LOS B	1.1	26.7	0.88	1.81	18.6
16	R2	32	2.0	0.174	13.1	LOS B	1.1	26.7	0.88	1.81	18.6
Approach		63	2.0	0.174	13.5	LOS B	1.1	26.7	0.88	0.90	18.6
North: Sand Canyon											
7	L2	21	2.0	0.888	15.4	LOS B	18.6	472.6	1.00	1.73	22.6
4	T1	411	2.0	0.888	9.1	LOS A	18.6	472.6	1.00	1.73	22.6
14	R2	516	2.0	0.888	10.5	LOS B	18.6	472.6	1.00	1.73	22.6
Approach		947	2.0	0.888	10.0	LOS B	18.6	472.6	1.00	0.86	22.6
West: Lost Canyon											
5	L2	379	2.0	0.708	16.1	LOS B	7.6	193.6	0.91	2.09	14.5
2	T1	11	2.0	0.708	9.7	LOS A	7.6	193.6	0.91	2.09	14.5
12	R2	121	2.0	0.708	11.1	LOS B	7.6	193.6	0.91	2.09	14.5
Approach		511	2.0	0.708	14.8	LOS B	7.6	193.6	0.91	1.05	14.5
All Vehicles		2186	2.0	0.888	13.1	LOS B	18.6	472.6	0.98	1.02	19.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 6

DELAY (AVERAGE)

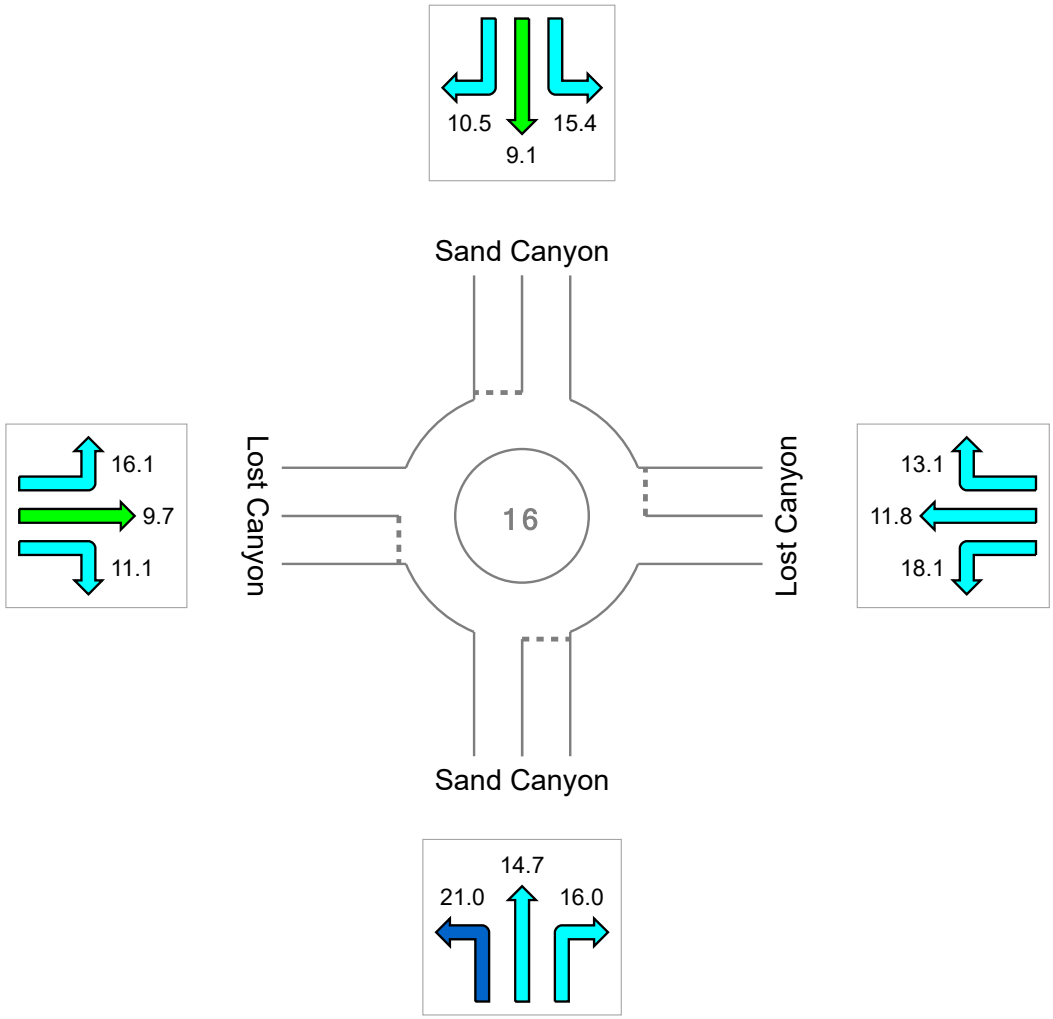
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: Sand Canyon & Lost Canyon-2028wp_AM

Interim Year (2028) With Project - AM Peak Hour
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Delay (Average)	16.1	13.5	10.0	14.8	13.1
LOS	B	B	B	B	B



Colour code based on Level of Service

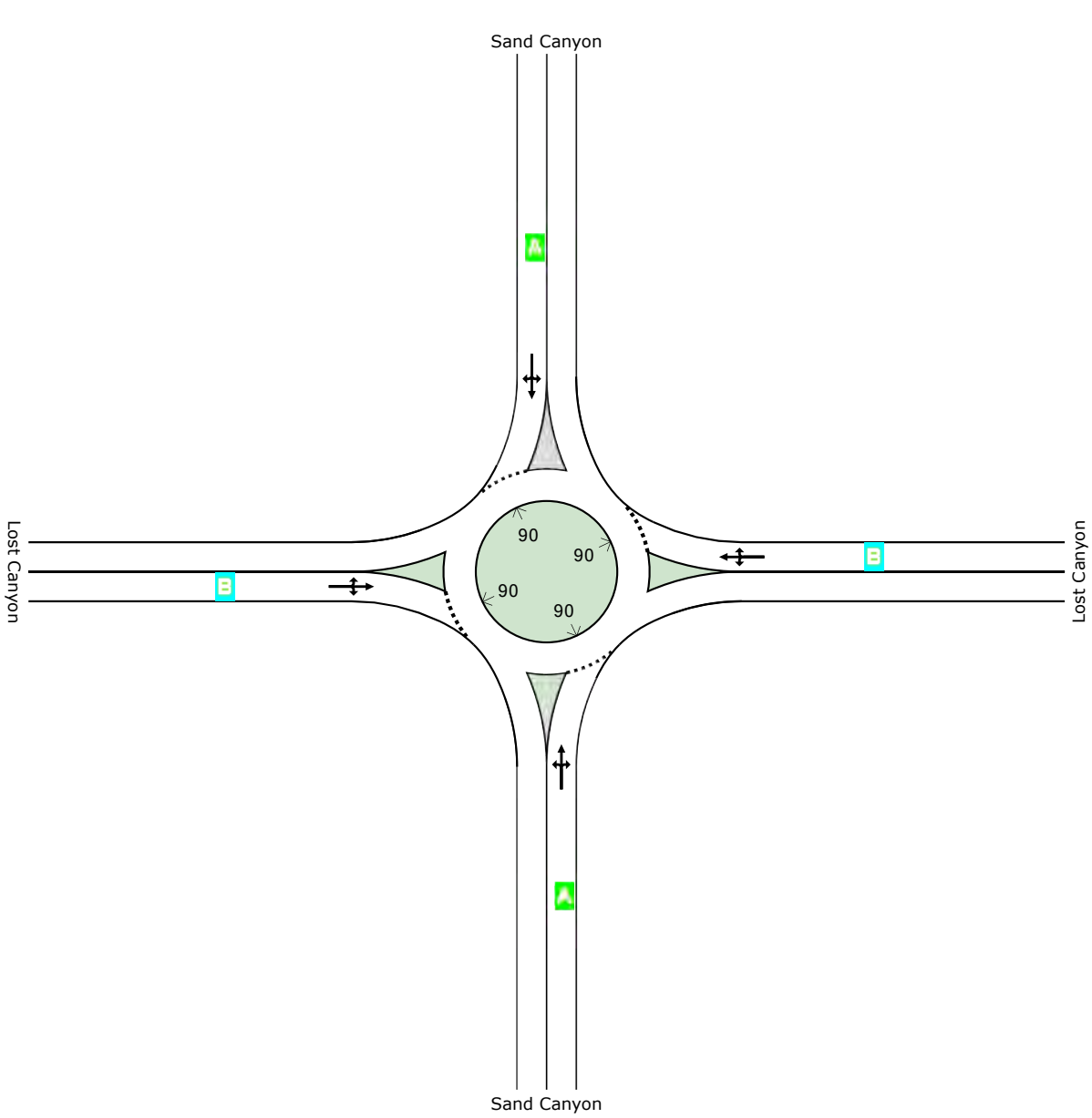
LOS A | LOS B | LOS C | LOS D | LOS E | LOS F | Continuous

Level of Service Method: Delay & v/c (HCM 2010)
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Roundabout Level of Service Method: Same as Signalised Intersections
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

LEVEL OF SERVICE

Site: Sand Canyon & Lost Canyon-2028wp_PM

Interim Year (2028) With Project - PM Peak Hour
Roundabout



	South	East	North	West	Intersection
LOS	A	B	A	B	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

INTERSECTION SUMMARY

Site: Sand Canyon & Lost Canyon-2028wp_PM

Interim Year (2028) With Project - PM Peak Hour
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1765	veh/h	2118	pers/h
Percent Heavy Vehicles (Demand)	2.0	%		
Degree of Saturation	0.733			
Practical Spare Capacity	16.0	%		
Effective Intersection Capacity	2409	veh/h		
Control Delay (Total)	3.23	veh-h/h	3.87	pers-h/h
Control Delay (Average)	6.6	sec	6.6	sec
Control Delay (Worst Lane)	11.9	sec		
Control Delay (Worst Movement)	15.4	sec	15.4	sec
Geometric Delay (Average)	3.4	sec		
Stop-Line Delay (Average)	3.2	sec		
Idling Time (Average)	0.4	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	8.7	veh		
95% Back of Queue - Distance (Worst Lane)	219.9	ft		
Queue Storage Ratio (Worst Lane)	0.38			
Total Effective Stops	1121	veh/h	1345	pers/h
Effective Stop Rate	0.64	per veh	0.64	per pers
Proportion Queued	0.63		0.63	
Performance Index	63.1		63.1	
Travel Distance (Total)	377.1	veh-mi/h	452.5	pers-mi/h
Travel Distance (Average)	1128	ft	1128	ft
Travel Time (Total)	16.3	veh-h/h	19.5	pers-h/h
Travel Time (Average)	33.2	sec	33.2	sec
Travel Speed	23.2	mph	23.2	mph
Cost (Total)	260.40	$/h	260.40	$/h
Fuel Consumption (Total)	9.5	gal/h		
Carbon Dioxide (Total)	84.5	kg/h		
Hydrocarbons (Total)	0.041	kg/h		
Carbon Monoxide (Total)	0.293	kg/h		
NOx (Total)	0.117	kg/h		

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	847,326	veh/y	1,016,792	pers/y
Delay	1,549	veh-h/y	1,859	pers-h/y
Effective Stops	538,148	veh/y	645,777	pers/y
Travel Distance	181,000	veh-mi/y	217,200	pers-mi/y
Travel Time	7,803	veh-h/y	9,364	pers-h/y
Cost	124,994	$/y	124,994	$/y
Fuel Consumption	4,548	gal/y		
Carbon Dioxide	40,555	kg/y		
Hydrocarbons	20	kg/y		
Carbon Monoxide	140	kg/y		
NOx	56	kg/y		

MOVEMENT SUMMARY

Site: Sand Canyon & Lost Canyon-2028wp_PM

Interim Year (2028) With Project - PM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sand Canyon											
3	L2	48	2.0	0.733	13.0	LOS B	8.7	219.9	0.81	1.55	23.1
8	T1	636	2.0	0.733	6.7	LOS A	8.7	219.9	0.81	1.55	23.1
18	R2	21	2.0	0.733	8.0	LOS A	8.7	219.9	0.81	1.55	23.1
Approach		705	2.0	0.733	7.1	LOS A	8.7	219.9	0.81	0.77	23.1
East: Lost Canyon											
1	L2	11	2.0	0.139	15.4	LOS B	0.8	20.5	0.81	1.66	20.1
6	T1	21	2.0	0.139	9.0	LOS A	0.8	20.5	0.81	1.66	20.1
16	R2	32	2.0	0.139	10.4	LOS B	0.8	20.5	0.81	1.66	20.1
Approach		63	2.0	0.139	10.8	LOS B	0.8	20.5	0.81	0.83	20.1
North: Sand Canyon											
7	L2	32	2.0	0.560	9.1	LOS A	4.7	120.3	0.38	0.73	25.8
4	T1	538	2.0	0.560	2.8	LOS A	4.7	120.3	0.38	0.73	25.8
14	R2	126	2.0	0.560	4.2	LOS A	4.7	120.3	0.38	0.73	25.8
Approach		696	2.0	0.560	3.4	LOS A	4.7	120.3	0.38	0.37	25.8
West: Lost Canyon											
5	L2	200	2.0	0.438	13.6	LOS B	2.8	71.3	0.74	1.78	15.9
2	T1	21	2.0	0.438	7.3	LOS A	2.8	71.3	0.74	1.78	15.9
12	R2	80	2.0	0.438	8.6	LOS A	2.8	71.3	0.74	1.78	15.9
Approach		301	2.0	0.438	11.9	LOS B	2.8	71.3	0.74	0.89	15.9
All Vehicles		1765	2.0	0.733	6.6	LOS A	8.7	219.9	0.63	0.64	23.2

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 6

DELAY (AVERAGE)

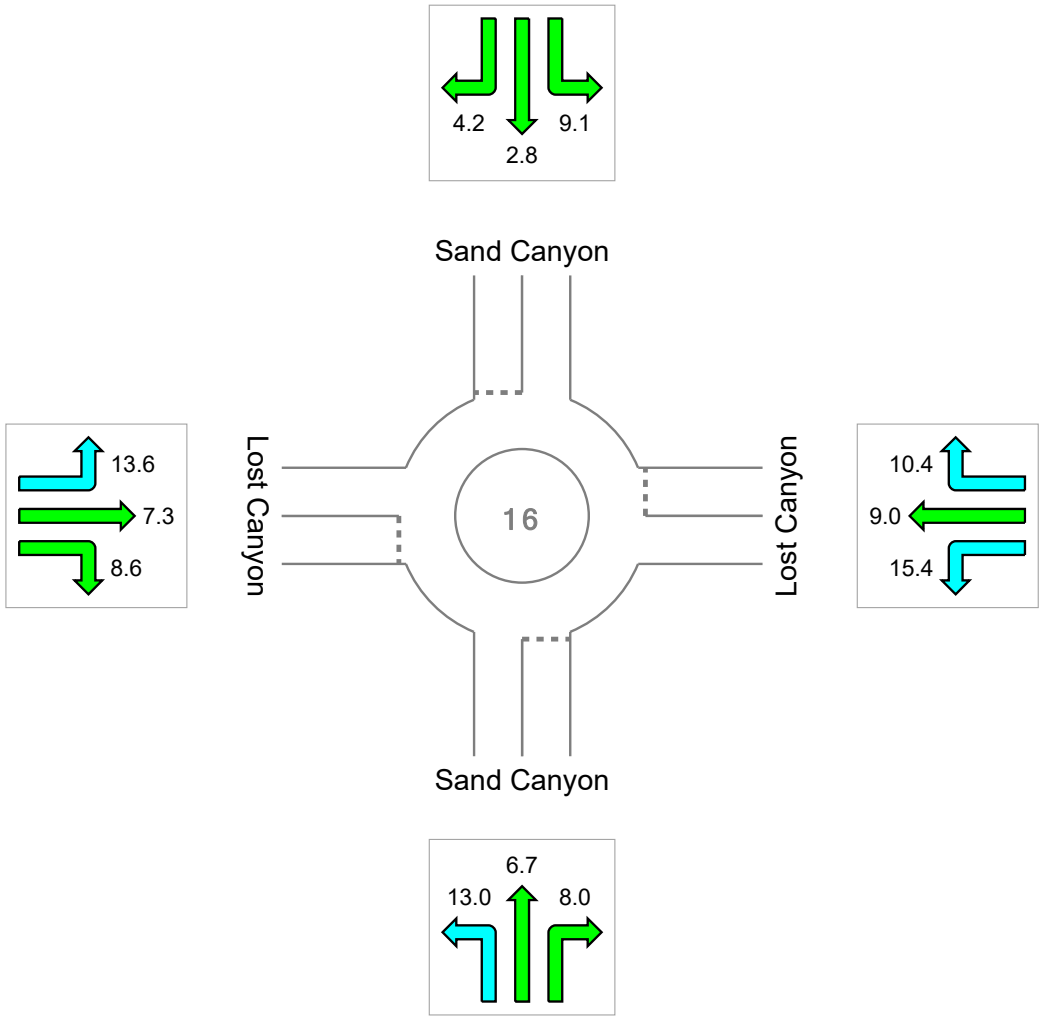
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: Sand Canyon & Lost Canyon-2028wp_PM

Interim Year (2028) With Project - PM Peak Hour
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Delay (Average)	7.1	10.8	3.4	11.9	6.6
LOS	A	B	A	B	A



Colour code based on Level of Service

LOS A | LOS B | LOS C | LOS D | LOS E | LOS F | Continuous

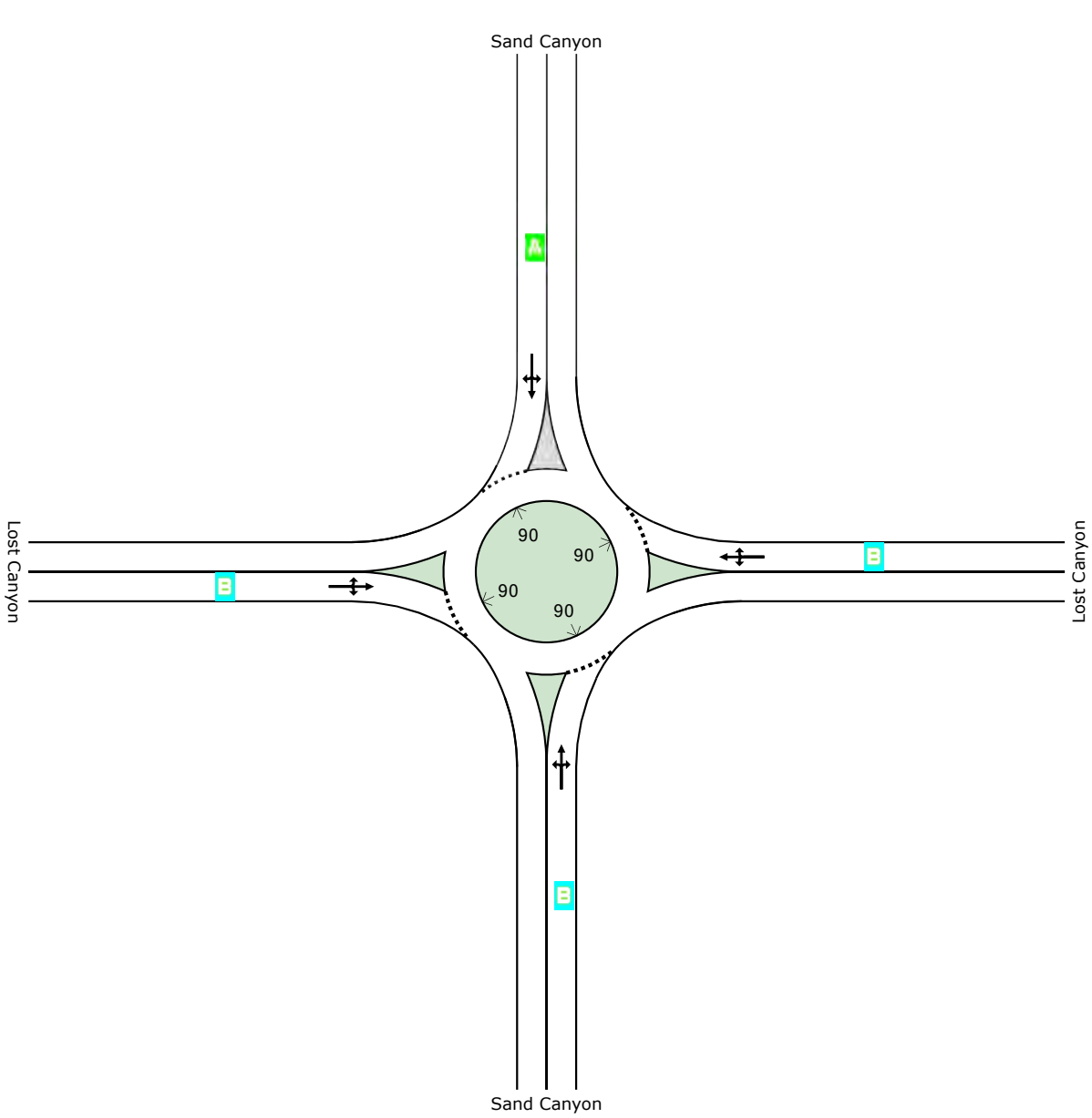
Level of Service Method: Delay & v/c (HCM 2010)
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Roundabout Level of Service Method: Same as Signalised Intersections
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

SIDRA INTERSECTION 6

LEVEL OF SERVICE

Site: Sand Canyon & Lost Canyon-2040np_AM

Long Range (2040) General Plan Buildout No Project - AM Peak Hour
Roundabout



	South	East	North	West	Intersection
LOS	B	B	A	B	B

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

INTERSECTION SUMMARY

Site: Sand Canyon & Lost Canyon-2040np_AM

Long Range (2040) General Plan Buildout No Project - AM Peak Hour
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	2053	veh/h	2463	pers/h
Percent Heavy Vehicles (Demand)	2.0	%		
Degree of Saturation	0.815			
Practical Spare Capacity	4.3	%		
Effective Intersection Capacity	2518	veh/h		
Control Delay (Total)	6.03	veh-h/h	7.24	pers-h/h
Control Delay (Average)	10.6	sec	10.6	sec
Control Delay (Worst Lane)	14.2	sec		
Control Delay (Worst Movement)	19.0	sec	19.0	sec
Geometric Delay (Average)	4.3	sec		
Stop-Line Delay (Average)	6.2	sec		
Idling Time (Average)	1.1	sec		
Intersection Level of Service (LOS)	LOS B			
95% Back of Queue - Vehicles (Worst Lane)	11.8	veh		
95% Back of Queue - Distance (Worst Lane)	299.6	ft		
Queue Storage Ratio (Worst Lane)	0.74			
Total Effective Stops	1840	veh/h	2208	pers/h
Effective Stop Rate	0.90	per veh	0.90	per pers
Proportion Queued	0.88		0.88	
Performance Index	102.4		102.4	
Travel Distance (Total)	428.1	veh-mi/h	513.7	pers-mi/h
Travel Distance (Average)	1101	ft	1101	ft
Travel Time (Total)	20.6	veh-h/h	24.7	pers-h/h
Travel Time (Average)	36.1	sec	36.1	sec
Travel Speed	20.8	mph	20.8	mph
Cost (Total)	327.29	$/h	327.29	$/h
Fuel Consumption (Total)	11.5	gal/h		
Carbon Dioxide (Total)	102.8	kg/h		
Hydrocarbons (Total)	0.052	kg/h		
Carbon Monoxide (Total)	0.357	kg/h		
NOx (Total)	0.140	kg/h		

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	985,263	veh/y	1,182,316	pers/y
Delay	2,896	veh-h/y	3,475	pers-h/y
Effective Stops	883,002	veh/y	1,059,603	pers/y
Travel Distance	205,495	veh-mi/y	246,594	pers-mi/y
Travel Time	9,891	veh-h/y	11,870	pers-h/y
Cost	157,097	$/y	157,097	$/y
Fuel Consumption	5,536	gal/y		
Carbon Dioxide	49,363	kg/y		
Hydrocarbons	25	kg/y		
Carbon Monoxide	171	kg/y		
NOx	67	kg/y		

MOVEMENT SUMMARY

Site: Sand Canyon & Lost Canyon-2040np_AM

Long Range (2040) General Plan Buildout No Project - AM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sand Canyon											
3	L2	147	2.0	0.815	19.0	LOS B	11.4	290.7	0.98	2.32	19.6
8	T1	474	2.0	0.815	12.7	LOS B	11.4	290.7	0.98	2.32	19.6
18	R2	11	2.0	0.815	14.1	LOS B	11.4	290.7	0.98	2.32	19.6
Approach		632	2.0	0.815	14.2	LOS B	11.4	290.7	0.98	1.16	19.6
East: Lost Canyon											
1	L2	11	2.0	0.163	17.4	LOS B	1.0	24.7	0.86	1.77	18.9
6	T1	21	2.0	0.163	11.1	LOS B	1.0	24.7	0.86	1.77	18.9
16	R2	32	2.0	0.163	12.4	LOS B	1.0	24.7	0.86	1.77	18.9
Approach		63	2.0	0.163	12.8	LOS B	1.0	24.7	0.86	0.88	18.9
North: Sand Canyon											
7	L2	32	2.0	0.800	12.4	LOS B	11.8	299.6	0.86	1.44	23.6
4	T1	305	2.0	0.800	6.1	LOS A	11.8	299.6	0.86	1.44	23.6
14	R2	516	2.0	0.800	7.4	LOS A	11.8	299.6	0.86	1.44	23.6
Approach		853	2.0	0.800	7.1	LOS A	11.8	299.6	0.86	0.72	23.6
West: Lost Canyon											
5	L2	379	2.0	0.615	12.9	LOS B	5.5	140.9	0.78	1.73	16.2
2	T1	11	2.0	0.615	6.6	LOS A	5.5	140.9	0.78	1.73	16.2
12	R2	116	2.0	0.615	7.9	LOS A	5.5	140.9	0.78	1.73	16.2
Approach		505	2.0	0.615	11.6	LOS B	5.5	140.9	0.78	0.87	16.2
All Vehicles		2053	2.0	0.815	10.6	LOS B	11.8	299.6	0.88	0.90	20.8

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 6

DELAY (AVERAGE)

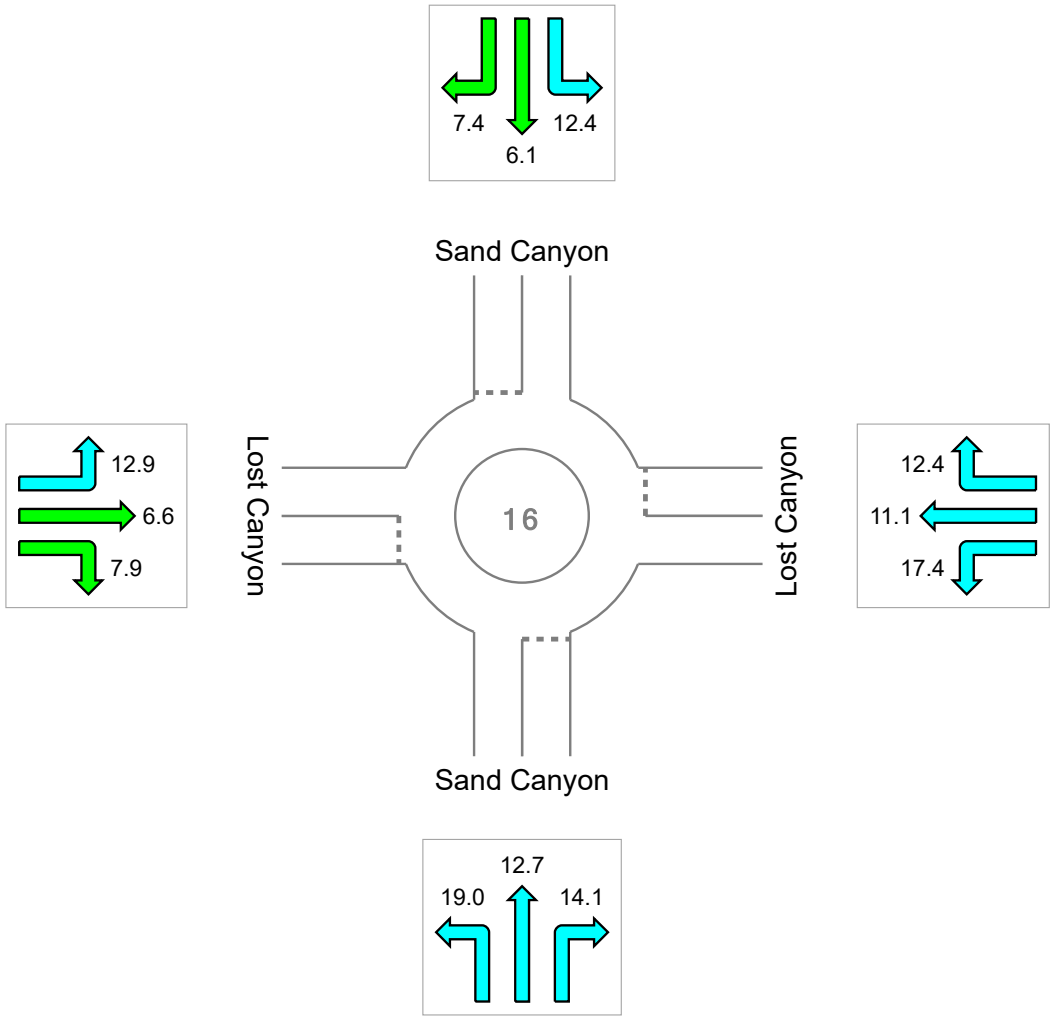
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: Sand Canyon & Lost Canyon-2040np_AM

Long Range (2040) General Plan Buildout No Project - AM Peak Hour
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Delay (Average)	14.2	12.8	7.1	11.6	10.6
LOS	B	B	A	B	B



Colour code based on Level of Service

LOS A | LOS B | LOS C | LOS D | LOS E | LOS F | Continuous

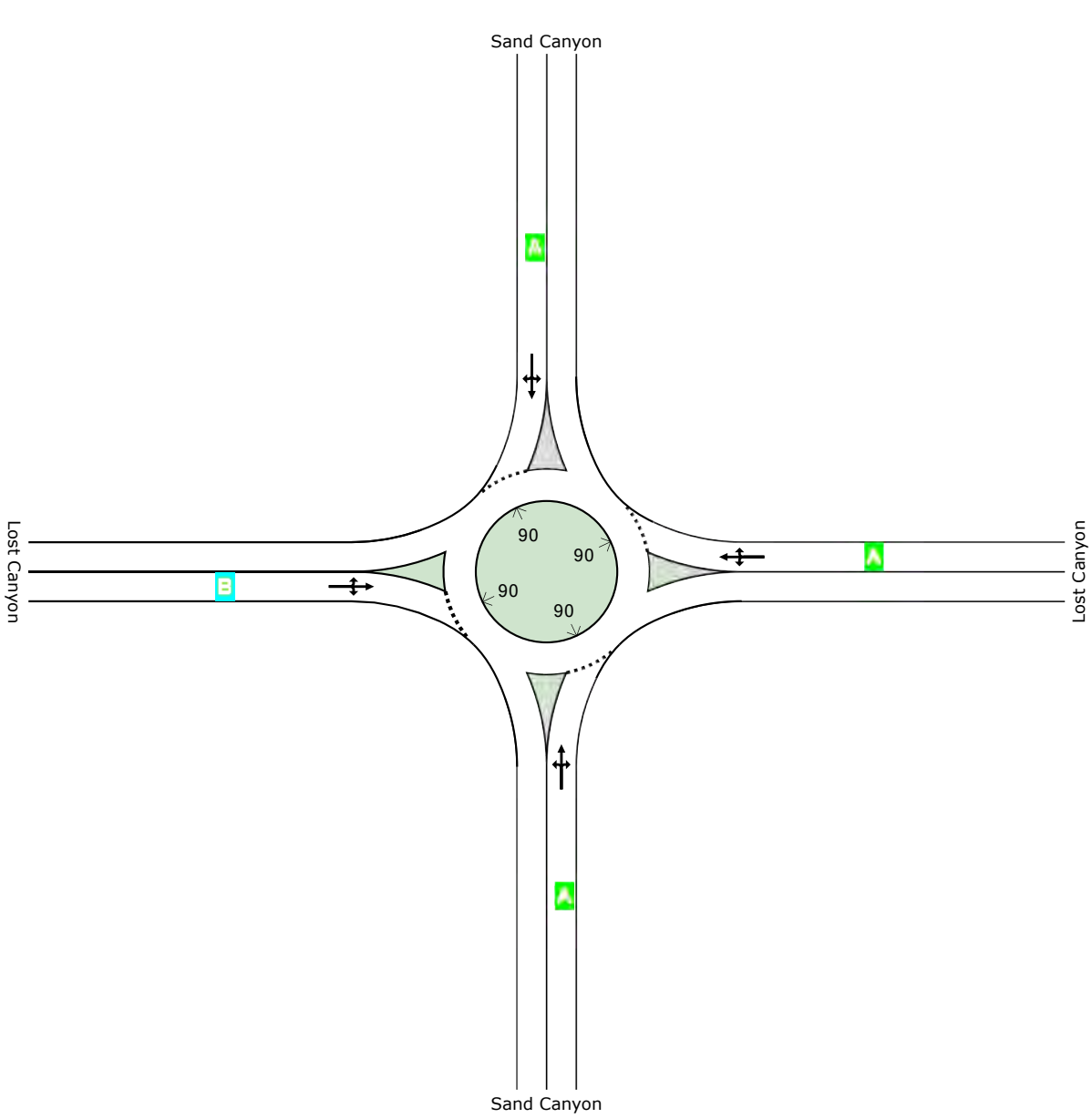
Level of Service Method: Delay & v/c (HCM 2010)
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Roundabout Level of Service Method: Same as Signalised Intersections
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

SIDRA INTERSECTION 6

LEVEL OF SERVICE

Site: Sand Canyon & Lost Canyon-2040np_PM

Long Range (2040) General Plan Buildout No Project - PM Peak Hour
Roundabout



	South	East	North	West	Intersection
LOS	A	A	A	B	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

INTERSECTION SUMMARY

Site: Sand Canyon & Lost Canyon-2040np_PM

Long Range (2040) General Plan Buildout No Project - PM Peak Hour
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1547	veh/h	1857	pers/h
Percent Heavy Vehicles (Demand)	2.0	%		
Degree of Saturation	0.625			
Practical Spare Capacity	36.0	%		
Effective Intersection Capacity	2476	veh/h		
Control Delay (Total)	2.54	veh-h/h	3.05	pers-h/h
Control Delay (Average)	5.9	sec	5.9	sec
Control Delay (Worst Lane)	10.4	sec		
Control Delay (Worst Movement)	13.8	sec	13.8	sec
Geometric Delay (Average)	3.6	sec		
Stop-Line Delay (Average)	2.3	sec		
Idling Time (Average)	0.2	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	5.6	veh		
95% Back of Queue - Distance (Worst Lane)	141.4	ft		
Queue Storage Ratio (Worst Lane)	0.30			
Total Effective Stops	899	veh/h	1079	pers/h
Effective Stop Rate	0.58	per veh	0.58	per pers
Proportion Queued	0.55		0.55	
Performance Index	47.3		47.3	
Travel Distance (Total)	327.2	veh-mi/h	392.7	pers-mi/h
Travel Distance (Average)	1117	ft	1117	ft
Travel Time (Total)	13.9	veh-h/h	16.7	pers-h/h
Travel Time (Average)	32.3	sec	32.3	sec
Travel Speed	23.6	mph	23.6	mph
Cost (Total)	222.90	$/h	222.90	$/h
Fuel Consumption (Total)	8.2	gal/h		
Carbon Dioxide (Total)	72.7	kg/h		
Hydrocarbons (Total)	0.035	kg/h		
Carbon Monoxide (Total)	0.252	kg/h		
NOx (Total)	0.102	kg/h		

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	742,737	veh/y	891,284	pers/y
Delay	1,221	veh-h/y	1,465	pers-h/y
Effective Stops	431,622	veh/y	517,946	pers/y
Travel Distance	157,066	veh-mi/y	188,479	pers-mi/y
Travel Time	6,669	veh-h/y	8,002	pers-h/y
Cost	106,991	$/y	106,991	$/y
Fuel Consumption	3,914	gal/y		
Carbon Dioxide	34,897	kg/y		
Hydrocarbons	17	kg/y		
Carbon Monoxide	121	kg/y		
NOx	49	kg/y		

MOVEMENT SUMMARY

Site: Sand Canyon & Lost Canyon-2040np_PM

Long Range (2040) General Plan Buildout No Project - PM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sand Canyon											
3	L2	42	2.0	0.625	11.7	LOS B	5.6	141.4	0.70	1.34	23.6
8	T1	526	2.0	0.625	5.3	LOS A	5.6	141.4	0.70	1.34	23.6
18	R2	21	2.0	0.625	6.7	LOS A	5.6	141.4	0.70	1.34	23.6
Approach		589	2.0	0.625	5.8	LOS A	5.6	141.4	0.70	0.67	23.6
East: Lost Canyon											
1	L2	11	2.0	0.116	13.8	LOS B	0.6	16.0	0.73	1.52	21.1
6	T1	21	2.0	0.116	7.5	LOS A	0.6	16.0	0.73	1.52	21.1
16	R2	32	2.0	0.116	8.9	LOS A	0.6	16.0	0.73	1.52	21.1
Approach		63	2.0	0.116	9.2	LOS A	0.6	16.0	0.73	0.76	21.1
North: Sand Canyon											
7	L2	42	2.0	0.481	9.0	LOS A	3.5	89.7	0.32	0.73	25.9
4	T1	432	2.0	0.481	2.7	LOS A	3.5	89.7	0.32	0.73	25.9
14	R2	126	2.0	0.481	4.0	LOS A	3.5	89.7	0.32	0.73	25.9
Approach		600	2.0	0.481	3.4	LOS A	3.5	89.7	0.32	0.37	25.9
West: Lost Canyon											
5	L2	200	2.0	0.390	12.1	LOS B	2.2	56.7	0.66	1.59	16.9
2	T1	21	2.0	0.390	5.8	LOS A	2.2	56.7	0.66	1.59	16.9
12	R2	74	2.0	0.390	7.2	LOS A	2.2	56.7	0.66	1.59	16.9
Approach		295	2.0	0.390	10.4	LOS B	2.2	56.7	0.66	0.80	16.9
All Vehicles		1547	2.0	0.625	5.9	LOS A	5.6	141.4	0.55	0.58	23.6

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 6

DELAY (AVERAGE)

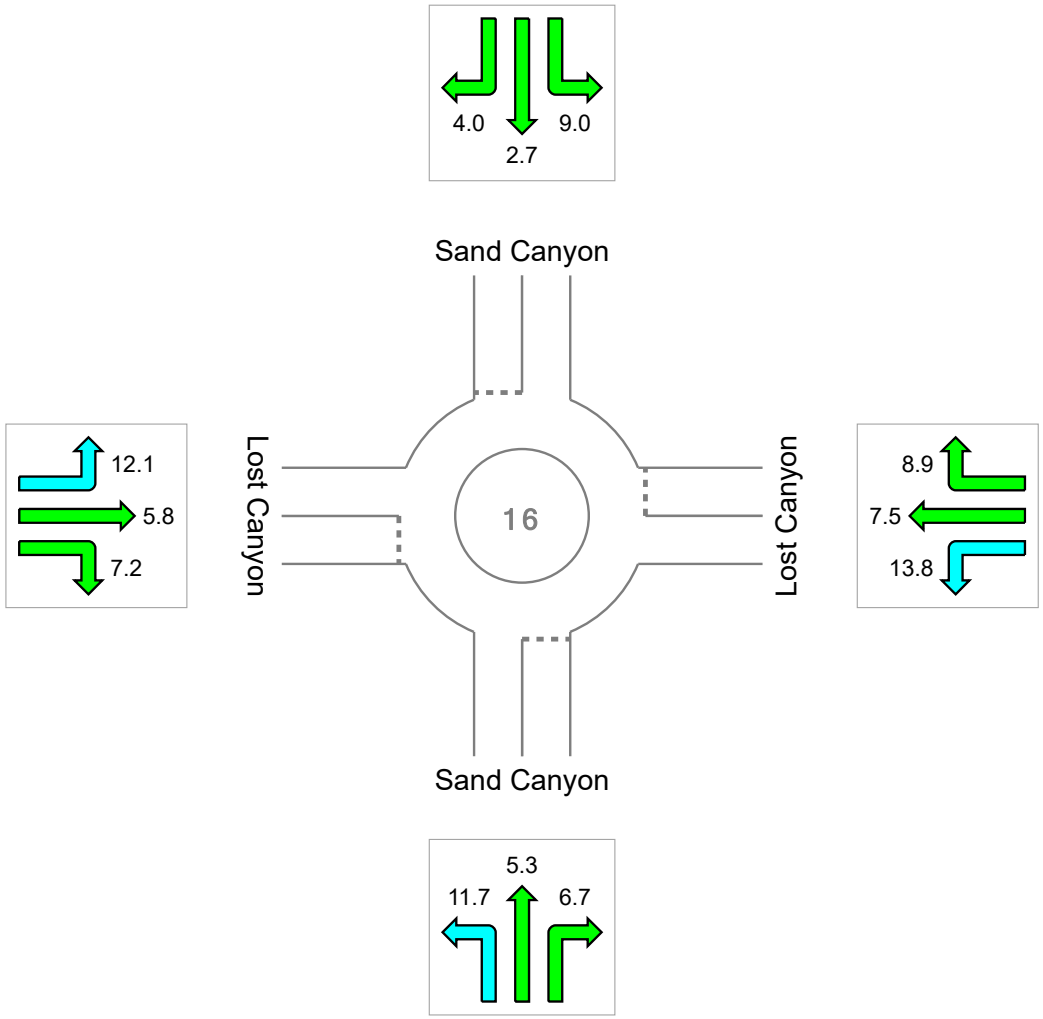
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: Sand Canyon & Lost Canyon-2040np_PM

Long Range (2040) General Plan Buildout No Project - PM Peak Hour
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Delay (Average)	5.8	9.2	3.4	10.4	5.9
LOS	A	A	A	B	A



Colour code based on Level of Service

LOS A | LOS B | LOS C | LOS D | LOS E | LOS F | Continuous

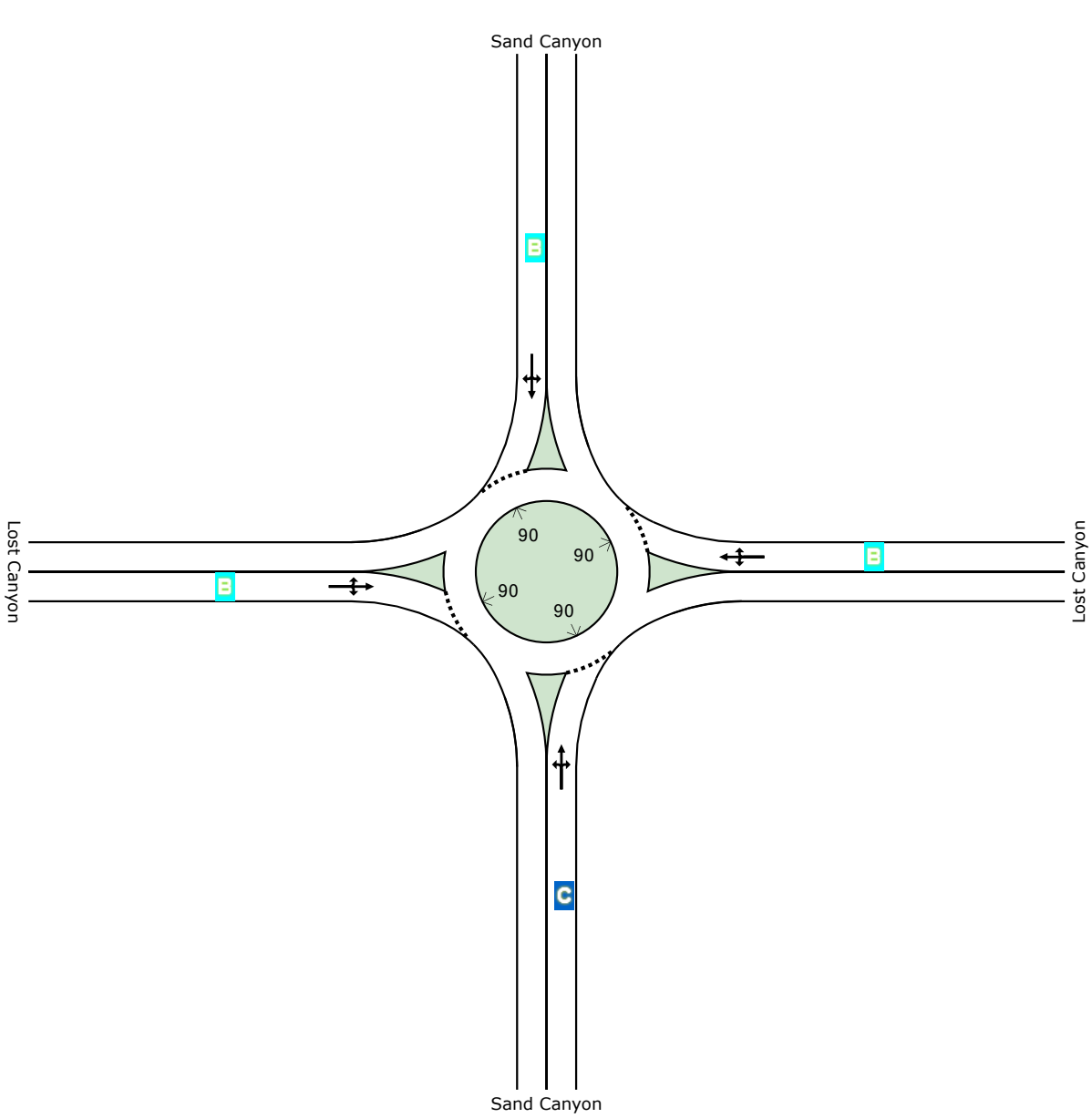
Level of Service Method: Delay & v/c (HCM 2010)
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Roundabout Level of Service Method: Same as Signalised Intersections
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

SIDRA INTERSECTION 6

LEVEL OF SERVICE

Site: Sand Canyon & Lost Canyon-2040wp_AM

Long Range (2040) General Plan Buildout With Project - AM Peak Hour
Roundabout



	South	East	North	West	Intersection
LOS	C	B	B	B	B

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

INTERSECTION SUMMARY

Site: Sand Canyon & Lost Canyon-2040wp_AM

Long Range (2040) General Plan Buildout With Project - AM Peak Hour
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	2239	veh/h	2687	pers/h
Percent Heavy Vehicles (Demand)	2.0	%		
Degree of Saturation	0.920			
Practical Spare Capacity	-7.6	%		
Effective Intersection Capacity	2435	veh/h		
Control Delay (Total)	9.43	veh-h/h	11.31	pers-h/h
Control Delay (Average)	15.2	sec	15.2	sec
Control Delay (Worst Lane)	21.4	sec		
Control Delay (Worst Movement)	26.4	sec	26.4	sec
Geometric Delay (Average)	4.2	sec		
Stop-Line Delay (Average)	11.0	sec		
Idling Time (Average)	3.0	sec		
Intersection Level of Service (LOS)	LOS B			
95% Back of Queue - Vehicles (Worst Lane)	19.6	veh		
95% Back of Queue - Distance (Worst Lane)	498.3	ft		
Queue Storage Ratio (Worst Lane)	1.05			
Total Effective Stops	2426	veh/h	2911	pers/h
Effective Stop Rate	1.08	per veh	1.08	per pers
Proportion Queued	0.98		0.98	
Performance Index	152.4		152.4	
Travel Distance (Total)	471.9	veh-mi/h	566.3	pers-mi/h
Travel Distance (Average)	1113	ft	1113	ft
Travel Time (Total)	25.2	veh-h/h	30.2	pers-h/h
Travel Time (Average)	40.5	sec	40.5	sec
Travel Speed	18.7	mph	18.7	mph
Cost (Total)	397.59	$/h	397.59	$/h
Fuel Consumption (Total)	13.6	gal/h		
Carbon Dioxide (Total)	121.3	kg/h		
Hydrocarbons (Total)	0.063	kg/h		
Carbon Monoxide (Total)	0.421	kg/h		
NOx (Total)	0.161	kg/h		

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: SIDRA Roundabout LOS.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1,074,695	veh/y	1,289,634	pers/y
Delay	4,524	veh-h/y	5,429	pers-h/y
Effective Stops	1,164,264	veh/y	1,397,117	pers/y
Travel Distance	226,500	veh-mi/y	271,800	pers-mi/y
Travel Time	12,084	veh-h/y	14,501	pers-h/y
Cost	190,845	$/y	190,845	$/y
Fuel Consumption	6,529	gal/y		
Carbon Dioxide	58,220	kg/y		
Hydrocarbons	30	kg/y		
Carbon Monoxide	202	kg/y		
NOx	77	kg/y		

MOVEMENT SUMMARY

Site: Sand Canyon & Lost Canyon-2040wp_AM

Long Range (2040) General Plan Buildout With Project - AM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sand Canyon											
3	L2	152	2.0	0.920	26.4	LOS C	18.5	469.9	1.00	2.78	16.6
8	T1	545	2.0	0.920	20.1	LOS C	18.5	469.9	1.00	2.78	16.6
18	R2	11	2.0	0.920	21.4	LOS C	18.5	469.9	1.00	2.78	16.6
Approach		707	2.0	0.920	21.4	LOS C	18.5	469.9	1.00	1.39	16.6
East: Lost Canyon											
1	L2	11	2.0	0.187	19.1	LOS B	1.1	29.2	0.90	1.86	18.1
6	T1	21	2.0	0.187	12.8	LOS B	1.1	29.2	0.90	1.86	18.1
16	R2	32	2.0	0.187	14.1	LOS B	1.1	29.2	0.90	1.86	18.1
Approach		63	2.0	0.187	14.5	LOS B	1.1	29.2	0.90	0.93	18.1
North: Sand Canyon											
7	L2	32	2.0	0.898	15.9	LOS B	19.6	498.3	1.00	1.75	22.3
4	T1	411	2.0	0.898	9.6	LOS A	19.6	498.3	1.00	1.75	22.3
14	R2	516	2.0	0.898	11.0	LOS B	19.6	498.3	1.00	1.75	22.3
Approach		958	2.0	0.898	10.6	LOS B	19.6	498.3	1.00	0.88	22.3
West: Lost Canyon											
5	L2	379	2.0	0.717	16.5	LOS B	7.8	199.2	0.92	2.13	14.2
2	T1	11	2.0	0.717	10.1	LOS B	7.8	199.2	0.92	2.13	14.2
12	R2	121	2.0	0.717	11.5	LOS B	7.8	199.2	0.92	2.13	14.2
Approach		511	2.0	0.717	15.2	LOS B	7.8	199.2	0.92	1.07	14.2
All Vehicles		2239	2.0	0.920	15.2	LOS B	19.6	498.3	0.98	1.08	18.7

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 6

DELAY (AVERAGE)

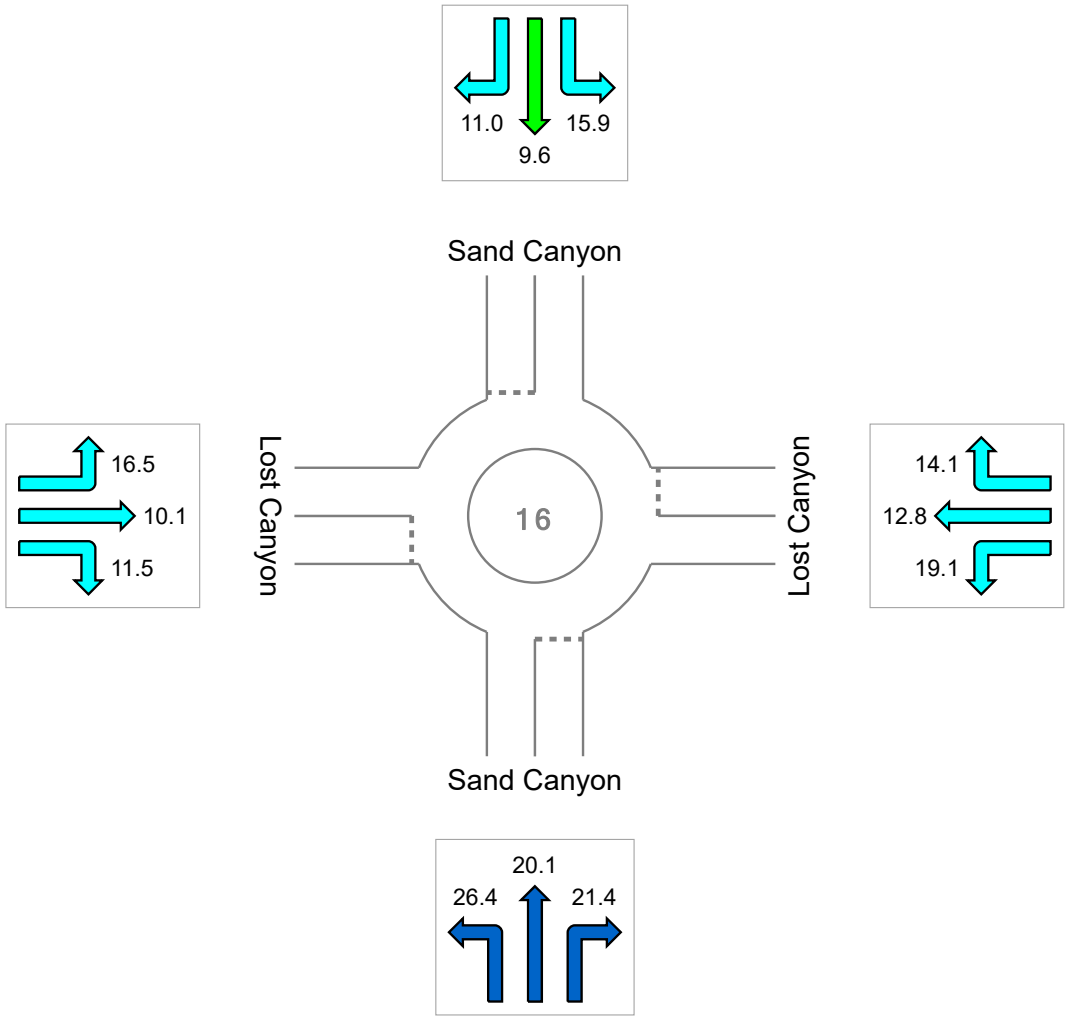
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: Sand Canyon & Lost Canyon-2040wp_AM

Long Range (2040) General Plan Buildout With Project - AM Peak Hour
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Delay (Average)	21.4	14.5	10.6	15.2	15.2
LOS	C	B	B	B	B



Colour code based on Level of Service

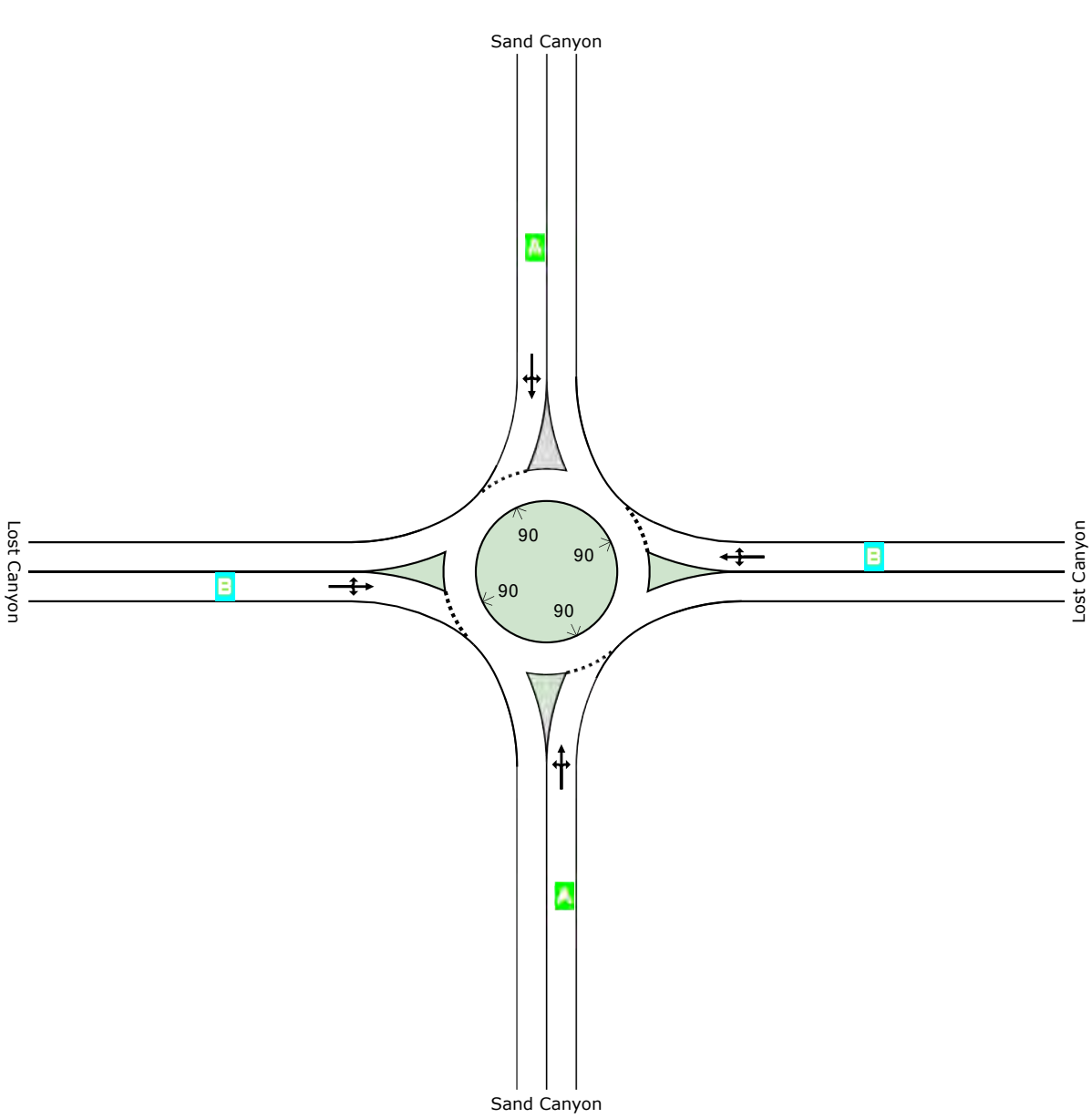
LOS A | LOS B | LOS C | LOS D | LOS E | LOS F | Continuous

Level of Service Method: Delay & v/c (HCM 2010)
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Roundabout Level of Service Method: SIDRA Roundabout LOS
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

LEVEL OF SERVICE

Site: Sand Canyon & Lost Canyon-2040wp_PM

Long Range (2040) General Plan Buildout With Project - PM Peak Hour
Roundabout



	South	East	North	West	Intersection
LOS	A	B	A	B	A

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay and v/c ratio (degree of saturation) per lane.
LOS F will result if v/c > irrespective of lane delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all lanes (v/c not used as specified in HCM 2010).
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

INTERSECTION SUMMARY

Site: Sand Canyon & Lost Canyon-2040wp_PM

Long Range (2040) General Plan Buildout With Project - PM Peak Hour
Roundabout

Intersection Performance - Hourly Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	1786	veh/h	2144	pers/h
Percent Heavy Vehicles (Demand)	2.0	%		
Degree of Saturation	0.742			
Practical Spare Capacity	14.6	%		
Effective Intersection Capacity	2409	veh/h		
Control Delay (Total)	3.37	veh-h/h	4.05	pers-h/h
Control Delay (Average)	6.8	sec	6.8	sec
Control Delay (Worst Lane)	12.2	sec		
Control Delay (Worst Movement)	15.4	sec	15.4	sec
Geometric Delay (Average)	3.4	sec		
Stop-Line Delay (Average)	3.4	sec		
Idling Time (Average)	0.4	sec		
Intersection Level of Service (LOS)	LOS A			
95% Back of Queue - Vehicles (Worst Lane)	9.0	veh		
95% Back of Queue - Distance (Worst Lane)	227.5	ft		
Queue Storage Ratio (Worst Lane)	0.39			
Total Effective Stops	1161	veh/h	1393	pers/h
Effective Stop Rate	0.65	per veh	0.65	per pers
Proportion Queued	0.64		0.64	
Performance Index	65.4		65.4	
Travel Distance (Total)	382.7	veh-mi/h	459.3	pers-mi/h
Travel Distance (Average)	1131	ft	1131	ft
Travel Time (Total)	16.6	veh-h/h	19.9	pers-h/h
Travel Time (Average)	33.4	sec	33.4	sec
Travel Speed	23.1	mph	23.1	mph
Cost (Total)	265.09	$/h	265.09	$/h
Fuel Consumption (Total)	9.6	gal/h		
Carbon Dioxide (Total)	85.9	kg/h		
Hydrocarbons (Total)	0.041	kg/h		
Carbon Monoxide (Total)	0.298	kg/h		
NOx (Total)	0.119	kg/h		

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Intersection LOS value for Vehicles is based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Intersection Performance - Annual Values				
Performance Measure	**Vehicles**		**Persons**	
Demand Flows (Total)	857,432	veh/y	1,028,918	pers/y
Delay	1,620	veh-h/y	1,944	pers-h/y
Effective Stops	557,190	veh/y	668,628	pers/y
Travel Distance	183,712	veh-mi/y	220,455	pers-mi/y
Travel Time	7,947	veh-h/y	9,536	pers-h/y
Cost	127,244	$/y	127,244	$/y
Fuel Consumption	4,624	gal/y		
Carbon Dioxide	41,232	kg/y		
Hydrocarbons	20	kg/y		
Carbon Monoxide	143	kg/y		
NOx	57	kg/y		

MOVEMENT SUMMARY

Site: Sand Canyon & Lost Canyon-2040wp_PM

Long Range (2040) General Plan Buildout With Project - PM Peak Hour
Roundabout

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: Sand Canyon											
3	L2	48	2.0	0.742	13.4	LOS B	9.0	227.5	0.82	1.60	23.0
8	T1	636	2.0	0.742	7.1	LOS A	9.0	227.5	0.82	1.60	23.0
18	R2	21	2.0	0.742	8.4	LOS A	9.0	227.5	0.82	1.60	23.0
Approach		705	2.0	0.742	7.5	LOS A	9.0	227.5	0.82	0.80	23.0
East: Lost Canyon											
1	L2	11	2.0	0.140	15.4	LOS B	0.8	20.7	0.81	1.66	20.1
6	T1	21	2.0	0.140	9.0	LOS A	0.8	20.7	0.81	1.66	20.1
16	R2	32	2.0	0.140	10.4	LOS B	0.8	20.7	0.81	1.66	20.1
Approach		63	2.0	0.140	10.8	LOS B	0.8	20.7	0.81	0.83	20.1
North: Sand Canyon											
7	L2	42	2.0	0.576	9.2	LOS A	5.0	127.4	0.39	0.75	25.7
4	T1	548	2.0	0.576	2.8	LOS A	5.0	127.4	0.39	0.75	25.7
14	R2	126	2.0	0.576	4.2	LOS A	5.0	127.4	0.39	0.75	25.7
Approach		717	2.0	0.576	3.4	LOS A	5.0	127.4	0.39	0.37	25.7
West: Lost Canyon											
5	L2	200	2.0	0.448	14.0	LOS B	2.9	74.6	0.75	1.82	15.7
2	T1	21	2.0	0.448	7.7	LOS A	2.9	74.6	0.75	1.82	15.7
12	R2	80	2.0	0.448	9.0	LOS A	2.9	74.6	0.75	1.82	15.7
Approach		301	2.0	0.448	12.2	LOS B	2.9	74.6	0.75	0.91	15.7
All Vehicles		1786	2.0	0.742	6.8	LOS A	9.0	227.5	0.64	0.65	23.1

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Signalised Intersections.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: SIDRA Standard.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 6

DELAY (AVERAGE)

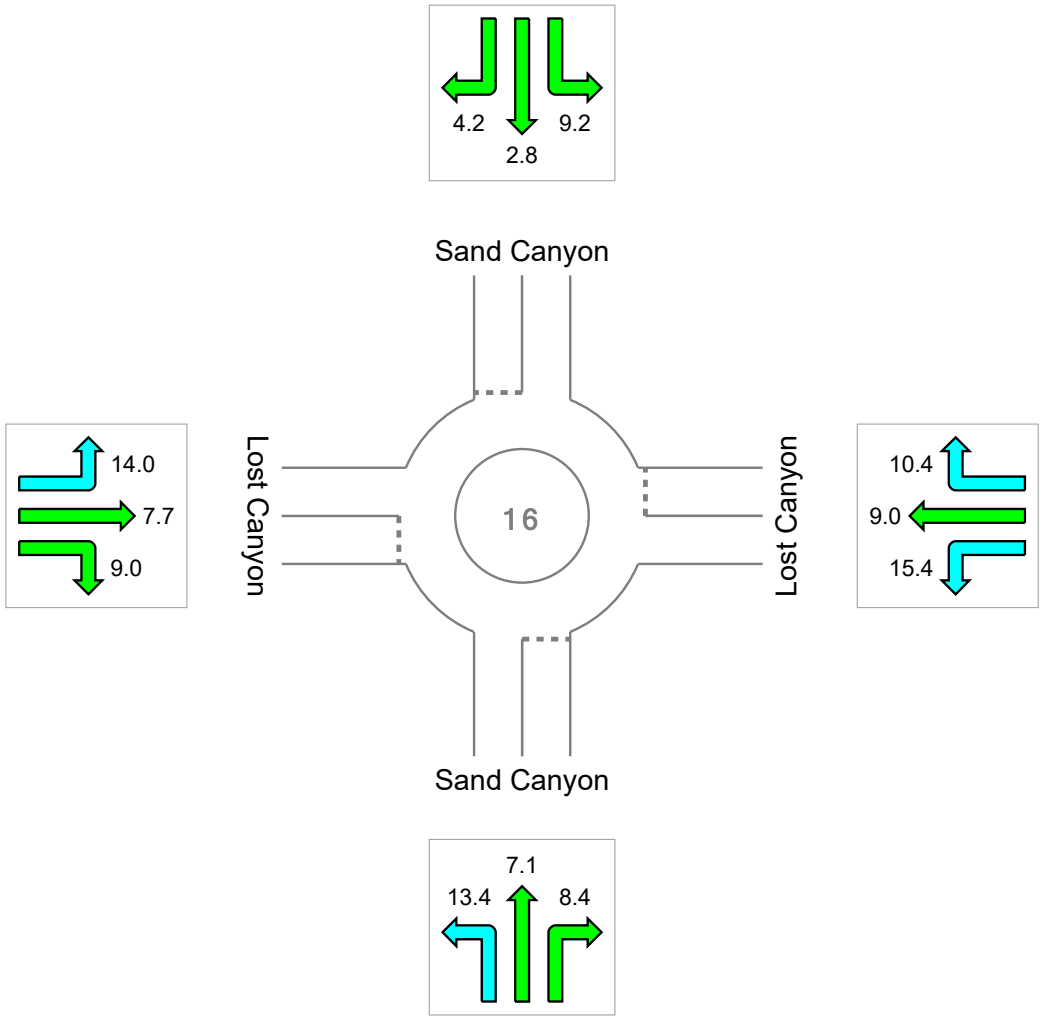
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: Sand Canyon & Lost Canyon-2040wp_PM

Long Range (2040) General Plan Buildout With Project - PM Peak Hour
Roundabout

All Movement Classes

	South	East	North	West	Intersection
Delay (Average)	7.5	10.8	3.4	12.2	6.8
LOS	A	B	A	B	A



Colour code based on Level of Service

LOS A | LOS B | LOS C | LOS D | LOS E | LOS F | Continuous

Level of Service Method: Delay & v/c (HCM 2010)
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Roundabout Level of Service Method: Same as Signalised Intersections
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

SIDRA INTERSECTION 6

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	40	150	10	110	380
Future Vol, veh/h	30	40	150	10	110	380
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	43	163	11	120	413

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	822	169	0	0	174	0
Stage 1	169	-	-	-	-	-
Stage 2	653	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	344	875	-	-	1403	-
Stage 1	861	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	306	875	-	-	1403	-
Mov Cap-2 Maneuver	306	-	-	-	-	-
Stage 1	765	-	-	-	-	-
Stage 2	518	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.8	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	487	1403	-
HCM Lane V/C Ratio	-	-	0.156	0.085	-
HCM Control Delay (s)	-	-	13.8	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.3	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	110	60	5	5	10
Future Vol, veh/h	10	110	60	5	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	120	65	5	5	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	70	0	-	0	210	68
Stage 1	-	-	-	-	68	-
Stage 2	-	-	-	-	142	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1531	-	-	-	778	995
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	885	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1531	-	-	-	772	995
Mov Cap-2 Maneuver	-	-	-	-	772	-
Stage 1	-	-	-	-	947	-
Stage 2	-	-	-	-	885	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1531	-	-	-	908
HCM Lane V/C Ratio	0.007	-	-	-	0.018
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	30	85	60	5	5	5
Future Vol, veh/h	30	85	60	5	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	92	65	5	5	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	70	0	-	0	226	68
Stage 1	-	-	-	-	68	-
Stage 2	-	-	-	-	158	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1531	-	-	-	762	995
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	871	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1531	-	-	-	744	995
Mov Cap-2 Maneuver	-	-	-	-	744	-
Stage 1	-	-	-	-	933	-
Stage 2	-	-	-	-	871	-

Approach	EB	WB	SW
HCM Control Delay, s	1.9	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	1531	-	-	-	851
HCM Lane V/C Ratio	0.021	-	-	-	0.013
HCM Control Delay (s)	7.4	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	60	60	5	5	5
Future Vol, veh/h	30	60	60	5	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	65	65	5	5	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	70	0	-	0	199	68
Stage 1	-	-	-	-	68	-
Stage 2	-	-	-	-	131	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1531	-	-	-	790	995
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	895	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1531	-	-	-	773	995
Mov Cap-2 Maneuver	-	-	-	-	773	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	895	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1531	-	-	-	870
HCM Lane V/C Ratio	0.021	-	-	-	0.012
HCM Control Delay (s)	7.4	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	45	60	5	5	5
Future Vol, veh/h	20	45	60	5	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	49	65	5	5	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	70	0	-	0	161	68
Stage 1	-	-	-	-	68	-
Stage 2	-	-	-	-	93	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1531	-	-	-	830	995
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	931	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1531	-	-	-	818	995
Mov Cap-2 Maneuver	-	-	-	-	818	-
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	931	-

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1531	-	-	-	898
HCM Lane V/C Ratio	0.014	-	-	-	0.012
HCM Control Delay (s)	7.4	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	3.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	100	360	10	100	250
Future Vol, veh/h	30	100	360	10	100	250
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	109	391	11	109	272

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	887	397	0	0	402	0
Stage 1	397	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	315	652	-	-	1157	-
Stage 1	679	-	-	-	-	-
Stage 2	616	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	280	652	-	-	1157	-
Mov Cap-2 Maneuver	280	-	-	-	-	-
Stage 1	604	-	-	-	-	-
Stage 2	616	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15	0	2.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	499	1157	-
HCM Lane V/C Ratio	-	-	0.283	0.094	-
HCM Control Delay (s)	-	-	15	8.4	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0.3	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	100	110	5	10	20
Future Vol, veh/h	10	100	110	5	10	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	109	120	5	11	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	125	0	-	0	254	123
Stage 1	-	-	-	-	123	-
Stage 2	-	-	-	-	131	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1462	-	-	-	735	928
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	895	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1462	-	-	-	729	928
Mov Cap-2 Maneuver	-	-	-	-	729	-
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	895	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1462	-	-	-	851
HCM Lane V/C Ratio	0.007	-	-	-	0.038
HCM Control Delay (s)	7.5	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SWL	SWR
Lane Configurations						
Traffic Vol, veh/h	10	100	105	5	10	10
Future Vol, veh/h	10	100	105	5	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	109	114	5	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	119	0	-	0	248	117
Stage 1	-	-	-	-	117	-
Stage 2	-	-	-	-	131	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1469	-	-	-	740	935
Stage 1	-	-	-	-	908	-
Stage 2	-	-	-	-	895	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1469	-	-	-	734	935
Mov Cap-2 Maneuver	-	-	-	-	734	-
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	895	-

Approach	EB	WB	SW
HCM Control Delay, s	0.7	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SWLn1
Capacity (veh/h)	1469	-	-	-	822
HCM Lane V/C Ratio	0.007	-	-	-	0.026
HCM Control Delay (s)	7.5	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	90	100	5	10	10
Future Vol, veh/h	20	90	100	5	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	98	109	5	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	114	0	-	0	254	112
Stage 1	-	-	-	-	112	-
Stage 2	-	-	-	-	142	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1475	-	-	-	735	941
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	885	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1475	-	-	-	723	941
Mov Cap-2 Maneuver	-	-	-	-	723	-
Stage 1	-	-	-	-	898	-
Stage 2	-	-	-	-	885	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1475	-	-	-	818
HCM Lane V/C Ratio	0.015	-	-	-	0.027
HCM Control Delay (s)	7.5	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	90	95	5	10	10
Future Vol, veh/h	10	90	95	5	10	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	98	103	5	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	108	0	-	0	226	106
Stage 1	-	-	-	-	106	-
Stage 2	-	-	-	-	120	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1483	-	-	-	762	948
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	905	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1483	-	-	-	756	948
Mov Cap-2 Maneuver	-	-	-	-	756	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	905	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1483	-	-	-	841
HCM Lane V/C Ratio	0.007	-	-	-	0.026
HCM Control Delay (s)	7.4	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Appendix C RESORT CASE STUDY

Stantec

Memo

To:	Ian Pari	From:	Sandhya Perumalla, and Daryl Zerfass
	City of Santa Clarita		Stantec
File:	2073014970	Date:	November 8, 2019

Reference: Sand Canyon Country Club - Comparison of ITE Trip Rate to Resort Case Study Trip Data

Stantec Consulting Services Inc. (Stantec) has prepared this trip rate comparison memo for the proposed Sand Canyon Resort Project located in the City of Santa Clarita. The purpose of this memo is to present findings of a case study and a comparison between the trips generated using the ITE hotel trip rate and the case study data.

BACKGROUND

Stantec prepared preliminary traffic studies in September 2018, and October 2019, for the proposed Sand Canyon Resort Project located in the City of Santa Clarita. The Project site is located north of Robinson Ranch Road (a private road), east of Sand Canyon Road, west of the Sand Canyon Country Clubhouse, and south of Oak Springs Canyon Road. The Project includes 392 guest rooms consisting of a hotel and separate villas, a banquet facility that includes ballrooms and meeting rooms for weddings, events and conferences for day use, and will be integrated with the existing a 27-hole golf course. The Project includes amenities like miniature golf, swimming pools, tennis, pickle ball courts, a three-mile long multi-purpose trail, upscale restaurants, spa and sauna, beauty salons, gym, and a kids club.

The Institute of Transportation Engineers (ITE) Trip Generation Manual has multiple land use classifications for a lodging types of uses, including Hotel, Business Hotel, and Resort Hotel. After an evaluation of these trip rates and through consultation with City engineering staff, it was initially determined that the ITE Hotel trip rate would be used for the purpose of the project's traffic impact study to provide a conservative estimate that reflects the Project's use as both a resort type of use and the potential for day use of the banquet and meeting facilities for special events.

Subsequent information provided by the Project applicant indicates that the use of the proposed banquet and meeting facilities for special events by day users would be less frequent than initially thought, and therefore the trip generation estimates presented in the Project's traffic study are not reflective of a typical day. While the traffic study conservatively reflects the potential worst-case traffic scenario, data obtained from other resort style uses has subsequently been evaluated to determine the typical number of daily trips for a golf resort.

CASE STUDY

For this analysis, the Project applicant contacted multiple resorts in California of comparable size and use and was able to obtain data from a total of 17 resorts. Stantec reviewed the data and determined that the data from 13 of the resorts would be suitable for use in this analysis.

Listed in Table 1 are the 13 California resorts that are similar in size (based on the number of rooms) and use (golf course and similar amenities) and were used in the case study. Each of these resorts issue valet tickets to the visitors and guests when they enter the resort and each resort reported having minimal or no self-parking available. The number of valet tickets issued from a typical weekday and from a typical weekend day was provided by the resort's valet services vendor or guest services manager. The provided ticket data was

Reference: **Sand Canyon Country Club - Comparison of ITE Trip Rate to Resort Case Study Trip Data**

doubled for both the weekday and the weekend data to account for trips exiting the resort, which together gives the average daily trips (ADT) for the weekday and weekend. This trip information is also summarized below in Table 1.

Table 1 - Trip Data of Visitor and Guests Only

S.No	Golf Resorts	Room Count	Golf Course	Weekday Visitor/Guest ADT	Weekend Visitor/Guest ADT
1	Temecula Creek Inn	126	27 holes	400	500
2	Cache Creek Resort	200	-	200	400
3	Carmel Valley Ranch	288	18 holes	300	450
4	Aviara Resort	329	-	300	600
5	Ojai Valley Inn	380	18 holes	360	560
6	Silverado Resort	388	36 holes	550	900
7	Monarch Beach Resort	400	18 holes	400	600
8	Omni Ranch	444	27 holes	400	800
9	Westin Mission Hills	512	36 holes	600	1,000
10	Hyatt Monterey Del Monte	550	18 holes	500	900
11	Hyatt Indian Wells	553	18 holes	600	1,600
12	Renaissance Indian Wells	560	18 holes	600	1,800
13	La Costa Resort	600	36 holes	450	920
Average		**410**		**435**	**848**

Sources: Resort's Valet Services and/or Guest Services
ADT - Average Daily Traffic

In general, the number of ADT generated by resort guests and visitors (i.e., excluding workers and deliveries) on a typical weekday is in the range of 200 to 600 ADT on a weekday. Of the surveyed locations, the average resort size is 410 rooms, which is comparable to the proposed Project's size of 392 rooms.

Reference: **Sand Canyon Country Club - Comparison of ITE Trip Rate to Resort Case Study Trip Data**

FINDINGS

To derive a trip generation rate for use in the Project's traffic impact study, the case study information discussed above has been adjusted to reflect total trip generation inclusive of resort workers deliveries. To derive this approximation, the following assumptions were made:

- ratio of employees per day to room count is the same as the proposed Project
- employee trip rate of 2.25 ADT per employee per day
- approximately 10 percent of employee trips reduced by Transportation Demand Management (TDM) measures

Given the above assumptions, there would be approximately 261 employees per day for an average of 410 rooms. With a 10 percent TDM reduction applied to the employee trips, this results in approximately 964 ADT on a weekday and 1,377 ADT on a weekend day as shown in Table 2.

Table 2 - Case Study Trips

	Amount	Units	Weekday ADT	Weekend ADT
Average of the resort case study	410	Room	435	848
Employees	261	emp	588	588
Employee TDM reduction (less 10%)	26	emp	-59	-59
Total Trips			**964**	**1,377**
Trips per Room			**2.35**	**3.36**

ADT - Average Daily Trips
Emp - employees
TDM - Transportation Demand Management
assumed 2.25 trips per employee

For comparison purposes, the ITE Hotel trip rates and the corresponding trip generation estimates for the proposed Project are shown together with the case study estimates in Table 3, below. Note that while ITE has a trip generation category for Resort Hotels, the ITE data does not include an ADT trip rate for that specific category.

Based on the ITE Hotel trip rate, the proposed Project would generate an ADT of approximately 3,277 trips on a weekday, and 3,210 trips on a peak weekend day. Based on the case study trip generation estimates, there would be 922 daily trips on a weekday and 1,317 daily trips on a weekend day, that translates to 2.35 trips per room on a weekday and 3.36 trips per room on a weekend day.

In comparison, the ADT calculated based on the ITE Hotel trip rate is approximately 3.6 times greater than the ADT calculated using the case study rate for a weekday, and 2.4 times greater for a weekend day.

Reference: **Sand Canyon Country Club - Comparison of ITE Trip Rate to Resort Case Study Trip Data**

Table 3 - Trip Rates Comparison

	Amount	Units	Weekday ADT	Weekend ADT
Trip Rates				
Hotel (ITE 310)	-	Room	8.36	8.19[1]
Resort Case Study	-	Room	2.35	3.36
Proposed Project				
Hotel (ITE Rates)	392	Room	3,277	3,210
Hotel (Resort Case Study Rates)	392	Room	922	1,317

Trip Rate Sources:
Institute of Transportation Engineers (ITE), 10th Edition, 2017, with ITE code in parentheses
Resort Case Study
ADT - Average Daily Traffic
[1]highest weekend day (Saturday) trip rate

CONCLUSION

Case study information indicates that the ITE Hotel trip rate may overstate trips for a typical day and that the number of Project trips added to Sand Canyon Road could be up to approximately 72 percent lower (922 ADT vs 3,277 ADT) on a weekday than indicated when utilizing ITE trip rates, and could be up to approximately 59 percent lower (1,317 ADT vs. 3,210 ADT) on a weekend day.

For the purpose of the Project's traffic impact study, we recommend use of the case study information to determine the anticipated volume of ADT generated by the Project. For a conservative analysis of peak hour conditions, the peak hour trip generation rates from the ITE Resort Hotel (330) category would be appropriate for a project of this type.

Additionally, following is a summary of the planned business operations of the Project based on the information provided by the Project owner that would help minimize the impact of the Project generated traffic:

- The resort target guests are typically families, couples on vacation or on business retreats, who would stay for a minimum of two days and who generally prefer to avoid the morning and evening rush hour traffic for travelling.
- The resort guest's check-in/check-out times do not coincide with the typical AM peak hour (7-9 AM) and PM peak hour (4-6 PM) traffic conditions.
- The resort employees would work in two shifts, one from 6 AM-2 PM, and the other from 2 PM-10 PM, therefore, their clock-in and clock-out times do not coincide with the typical AM peak hour and PM peak hour.
- The Project plans to provide shuttle services for guests and the employees to/from the Metrolink station.
- The Project plans to control the delivery truck deliveries times to not affect peak hour traffic.

Reference: **Sand Canyon Country Club - Comparison of ITE Trip Rate to Resort Case Study Trip Data**

Additional Project features include:

- The Project's proposed secondary access on the east side of the property from Robinson Ranch Road to Oak Springs Canyon Road could be used as an emergency evacuation route.
- The Project plans to provide on-site refuge during emergency evacuations if needed.

Please feel free to contact Daryl or Sandhya if you have any questions or if you would like to discuss the above material.

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Sand Canyon Resort
Transportation Demand Management Plan

Santa Clarita, California

March 2, 2018

Prepared for:

Sand Canyon Country Club

Prepared by:

Stantec Consulting Services Inc.

Sign-off Sheet

This document entitled Sand Canyon Resort - Transportation Demand Management Plan was prepared by Stantec Consulting Services Inc. (“Stantec”) for the account of Sand Canyon County Club (the “Client”).

Prepared by _____

(signature)

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Reviewed by _____

(signature)

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SAND CANYON RESORT - TRANSPORTATION DEMAND MANAGEMENT PLAN

March 2018

1.0 INTRODUCTION

Sand Canyon Country Club is planning to develop a resort project in the City of Santa Clarita. Referred to as the Sand Canyon Resort, the project site is located on the north side of Robinson Ranch Road (a private road), east of Sand Canyon Road. Figure 1 shows the project location. The Project includes the redevelopment of nine holes of the currently closed Mountain Course of the Sand Canyon Country Club (formerly Robinson Ranch Golf Club). The project also includes 302 guest rooms consisting of a hotel and separate villas. A 9-hole executive golf course will be constructed to supplement the existing 27-hole golf course. The project includes the construction of 508 surface parking spaces in the resort area in addition to the 238 existing parking spaces at the golf course. An additional 81 spaces will be constructed just east of the existing golf course parking lot. The site plan for the project is shown in Figure 2.

The resort currently has 50 employees on site and is proposed to have approximately 300 employees in the future. Since the project will have more than 50 employees, the City of Santa Clarita has requested the project to create a Transportation Demand Management (TDM) plan to reduce traffic to and from the site. The goal of this TDM plan is to provide the present and future employees of the Sand Canyon Resort with strategies that make alternative modes of transportation more attractive and efficient than driving and thereby reduce vehicle trips and Vehicle-Miles-Traveled (VMT).

2.0 ELEMENTS OF THE TDM PLAN

TDM consists of strategies that efficiently use the existing transportation facilities to reduce traffic congestion and air pollution. The strategies include increasing vehicle occupancy (the number of people riding in a car) during the morning and afternoon peak hour commutes, encouraging drivers to use alternative transportation modes, and reducing vehicle trips during lunchtime. This involves promoting and providing incentives for using the other modes of transportation. The potential staff size of the resort project, 300 total employees (including part-time and full-time employees), lends itself to the TDM elements described below:

2.1 RIDESHARE INFORMATION AREA

The TDM plan success depends largely on educating and informing the resort employees of the availability and advantages of alternative transportation options over driving alone to work. An employee common area space such as a lunch room, coffee area, etc., can be used as an information hub to provide public transit resources like the current bus and train routes and schedules, ride matching services for carpooling, and rideshare supporting policies such as preferential parking and vouchers. A commuter information kiosk can also be installed for employees to access public transit information. This can be an internet terminal with access restricted to a list of public transit agency websites and online public transit trip planners, including but not limited to: City of Santa Clarita Transit (www.santaclaritatransit.com), Los Angeles Metro Transportation Authority (www.metro.net), Metrolink (www.metrolinktrains.com), Amtrak (www.amtrak.com), transportation network companies (TNC), and taxi services.

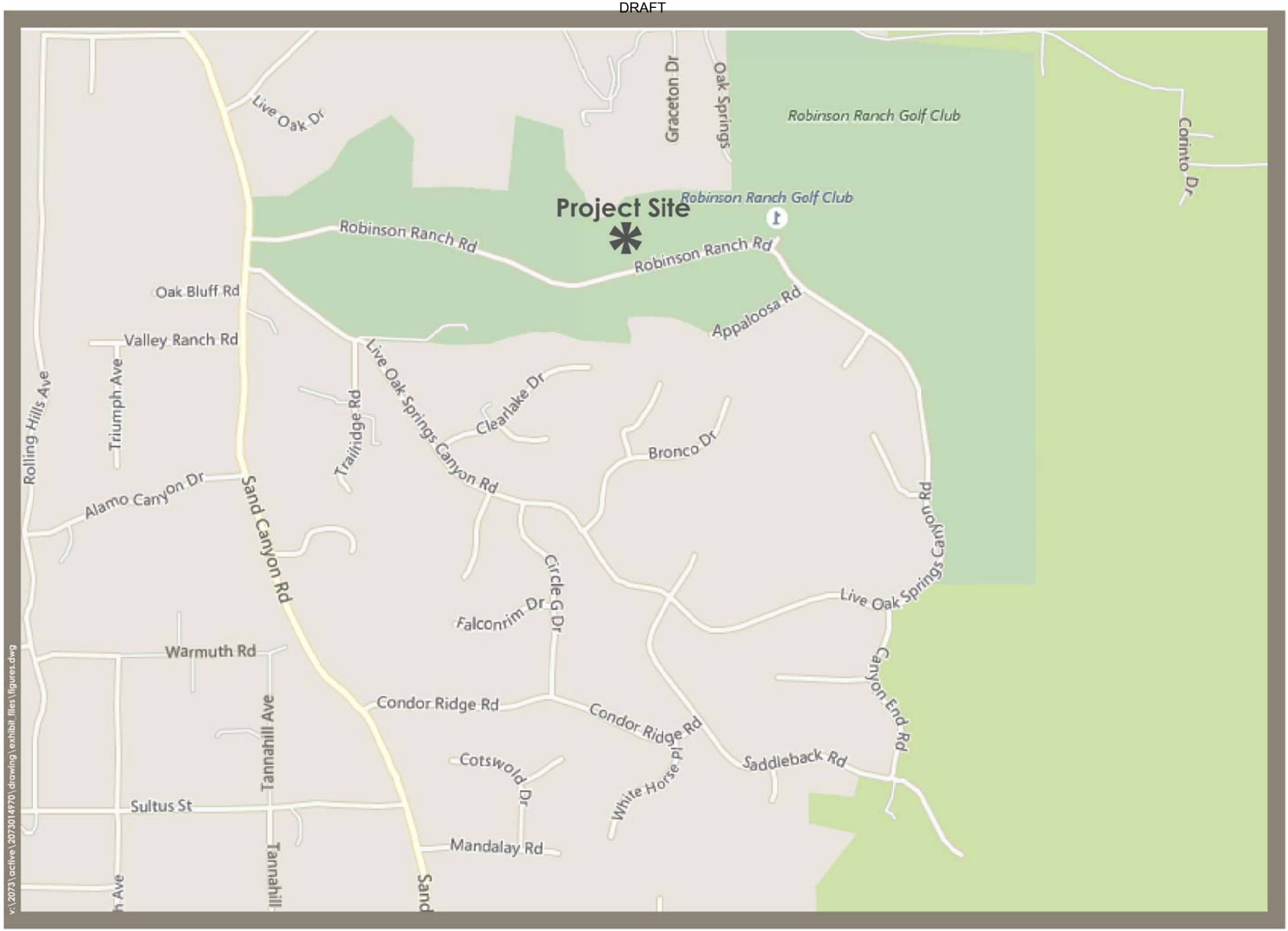

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Figure 1

Project Site

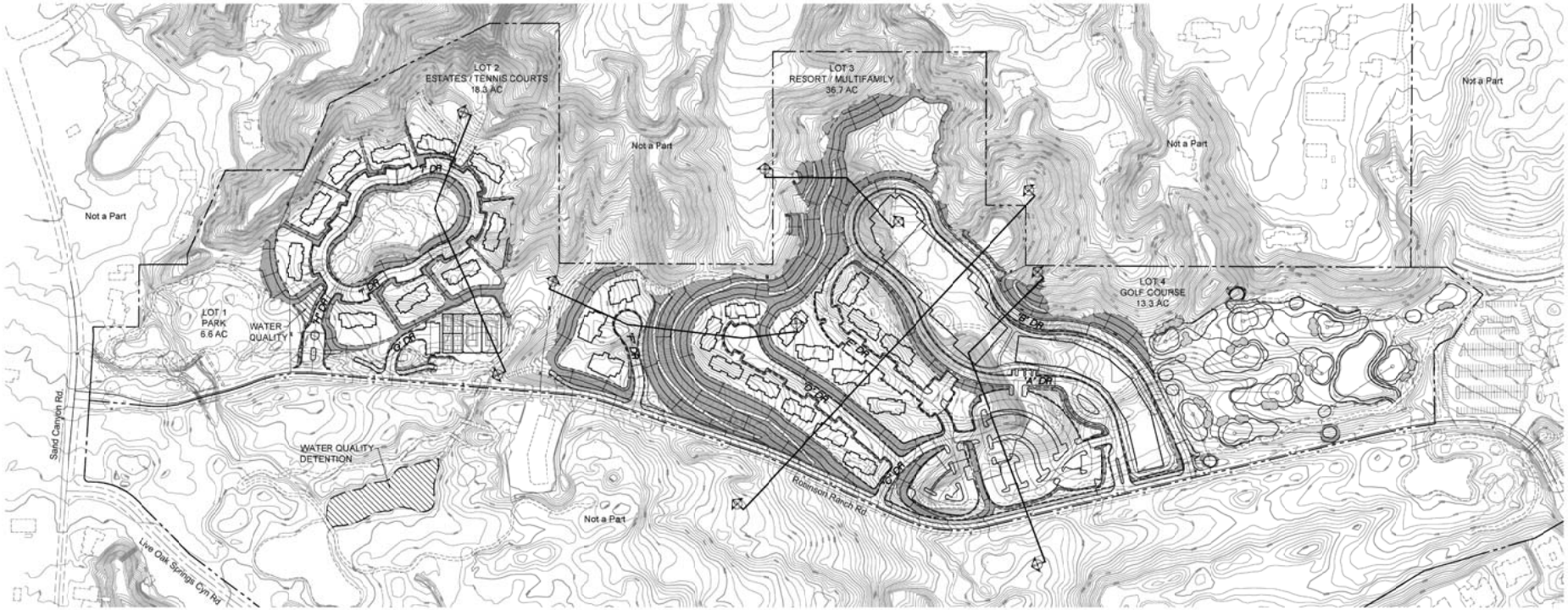

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Figure 2

Site Plan

An Employee Transportation Coordinator (ETC) can be identified by the resort management to promote the TDM strategies. The planned TDM program can be introduced to potential employees during the hiring process and encouraged to use alternative modes of transportation like carpool and public transit from the first day.

2.2 PREFERENTIAL PARKING

The total number of parking spaces proposed within the Sand Canyon Resort is 827 spaces. There is no shortage of parking anticipated for staff, guests and visitors. However, reducing the number of single occupancy vehicles is desirable to reduce the volume of traffic accessing the site. To encourage carpooling, preferential parking can be implemented for carpools by providing carpool spaces near employee entrances to the buildings. They should be located near the handicapped parking and provided in sufficient quantity so that they are located easily. Proximity to buildings and time savings from not having to look for a parking space are major incentives.

The project is expected to have approximately 300 employees, however not all employees will be present at the site at the same time. A minimum of five carpool parking spaces should be provided on site based upon serving five percent of the employees on-site, assuming approximately one-third of the total employees present at any given time. Additional regular parking can be allocated to carpool parking as needed, if and when the number of carpool vehicles increases. Suggested locations of carpool spaces are shown in Figure 3. The carpool spaces should be stenciled with the word “Carpool” on the pavement of each space, and the section should be signed with “Carpool only with permit.”

A carpool permit system needs to be implemented for staff that joins the carpoolers roster. Only carpoolers who carpool at least four-times a week can qualify for a carpool permit. This permit system should be administered by the ETC, described above. The enforcement of the permit’s proper use should be treated the same as handicapped parking by displaying the permit prominently on the front or rear windshield and enforced with the same fines for violation. To restrict other cars from using the carpool spaces, signs should be posted clearly in front of the carpool section of the parking and announce enforcement of the restriction.

People who choose to ride motorcycles to work can utilize smaller than standard parking spaces. Typically, a motorcycle will occupy an entire car parking space which is an inefficient use of space. Separate motorcycle parking should be provided to avoid this inefficiency and to encourage more people to use motorcycles. Implementing an motorcycle parking is easy and less expensive. A full-size car parking space can simply be divided in half with striping to create two motorcycle spaces which will provide twice the vehicle capacity. Approximately two motorcycle spaces near the carpool spaces should be provided at the site based upon serving two percent of the employees, assuming approximately one-third of the total employees present at any given time. Suggested location of motorcycle spaces is shown in Figure 3. Signs should be posted in front of each motorcycle space with the word “Motorcycle Only” stenciled on the pavement.

2.3 RIDESHARE VEHICLE LOADING

Carpool vehicle loading can be accommodated in the designated carpool spaces close to the employee building entrances described above. Large rideshare vehicles such as vans or shuttle buses can also be provided with a loading area adjacent to the curb next to the employee entrance to the building (note that employee entrance

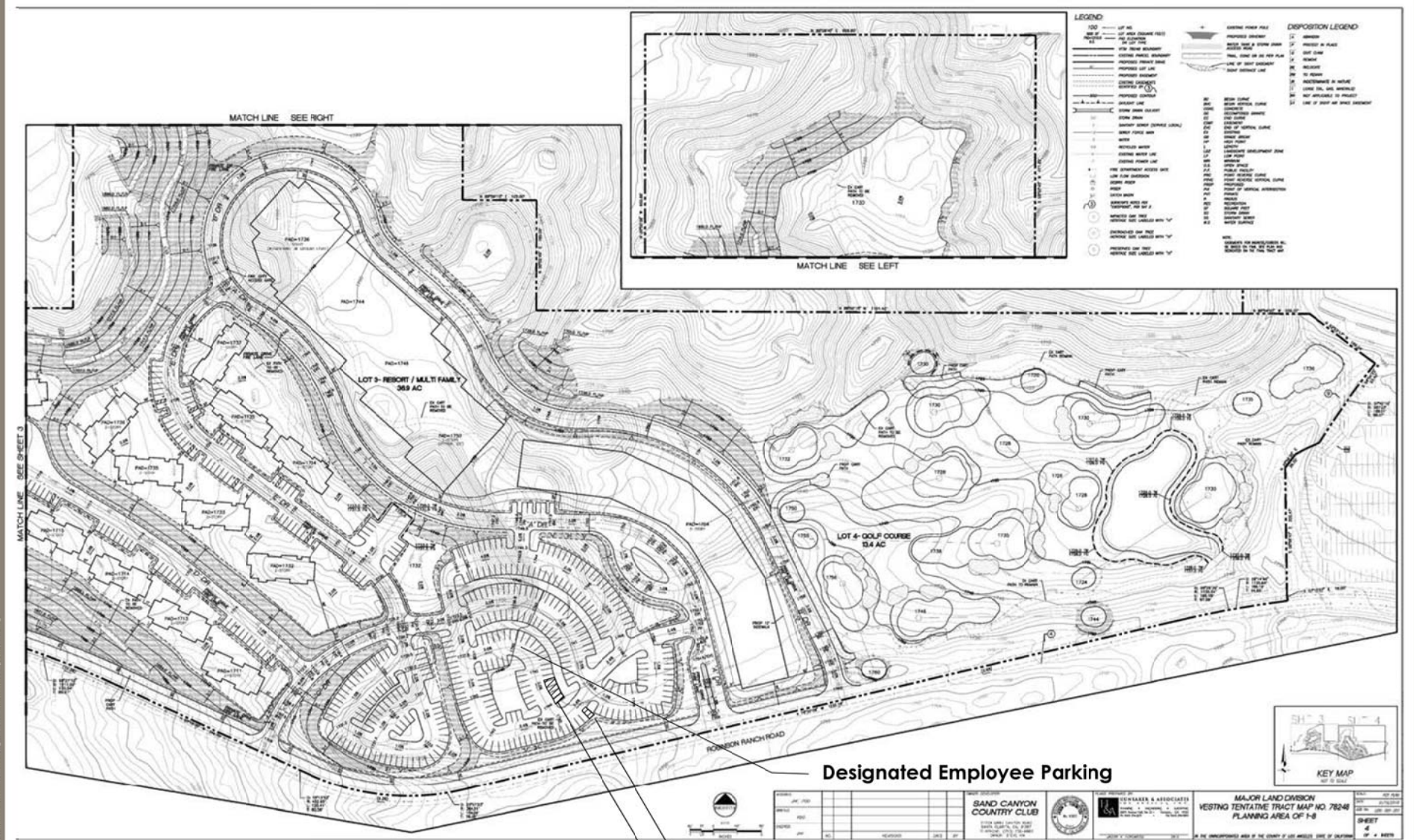

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Figure 3

TDM Recommendations

locations are yet to be determined). This loading area can also serve as taxi and TNC drop-off areas. Installing a bench is suggested at this location.

2.4 SECURE BIKE STORAGE

Providing secure bicycle storage racks or lockers that are placed conveniently adjacent to each building is critical to making bicycle commuting practical. The lack of secure bicycle storage is a major deterrent to commuters who want to bicycle to work. Suggested locations for bicycle racks would be next to the employee entrances to the building. Bicycle racks or lockers should be provided for at least 10 bicycles (1 space per 30 employees), until additional demand requires more racks.

2.5 SHOWER FACILITIES

Shower facilities can be provided in conjunction with bicycle storage, so that bicyclists can shower and freshen up when they start their shift. At least two shower stalls should be provided and can be unisex if separate dressing areas for each shower stall are provided and enclosed with internal doors, and with a shared wash basin and mirror area. This facility should be provided in the bottom floor of the building.

2.6 CENTRAL LUNCH AREA

Lunchtime vehicle trips can be reduced or avoided by providing a central lunch area in the building or an open eating area outside the building. It would encourage and allow employees to bring their own lunches and/or prepare them in the building. The lunch area can also have information on “takeout”/delivery menus to provide food and beverages for the employees. The lunch area can be expanded if additional use occurs in the future. Tables, chairs, waste receptacles, and provisions for water should be provided in this area.

2.7 US DOT/EPA COMMUTER CHOICE PROGRAM

The resort management can offer employees benefits from the US DOT/EPA Commuter Choice Program. Under this program, employers may give their employees up to $100 per month ($1,200 per year) in tax-free benefits to commute to work by transit or eligible vanpools. Employees receive the benefit completely free of all income taxes. The Commuter Choice Program can provide a significant tax savings to both employers and employees.

3.0 TRANSPORTATION DEMAND MANAGEMENT PLAN

The following TDM plan contains interrelated strategies to make each element more effective. These strategies include promoting alternative transportation and allowing alternative work schedules. They can be implemented independently or jointly with each other and are described in detail below.

3.1 PROMOTING ALTERNATIVE TRANSPORTATION

The key to getting staff to use alternative transportation is informing and educating them about the availability and benefits of alternative transportation. This educational and promotional function is the responsibility of the ETC, who should provide the following information and services to the employees as described in the following sections.

3.1.1 Public Transit Use

The City of Santa Clarita Transit (SCT) provides bus route services to the entire City as well as connections to Amtrak and Metrolink. The current Local Transit System Map and schedule is included in Appendix A and can be found online at http://santaclaritatransit.com/routes-schedules/new-schedules/. Furthermore, SCT also operates a Dial-A-Ride (DAR) service which provides curb-to-curb local service to all areas in the City and within 3/4 of a mile from any Santa Clarita Transit local bus stop in unincorporated areas.

Bus Services

Public transit bus service in Santa Clarita is provided by SCT and runs on major arterial and collector streets in the City. The SCT Route 6 operates along Soledad Canyon as shown in Figure 4. The nearest bus stop is approximately two miles from the project site which is feasible to bike. The local bus schedule for Route 6 is included in Appendix A.

Public transit use is the most efficient and effective of the TDM strategies. It removes vehicle trips from the roadways and the need for a parking space. Making public transit service available to the site would allow more employees to be transported to the project site than would a single occupancy car during peak travel time. This would also reduce parking demand and traffic impacts. Using public transit results in savings to the employees. They save money on gasoline and the mileage on their cars. They gain time to use when riding transit to read, sleep or work.

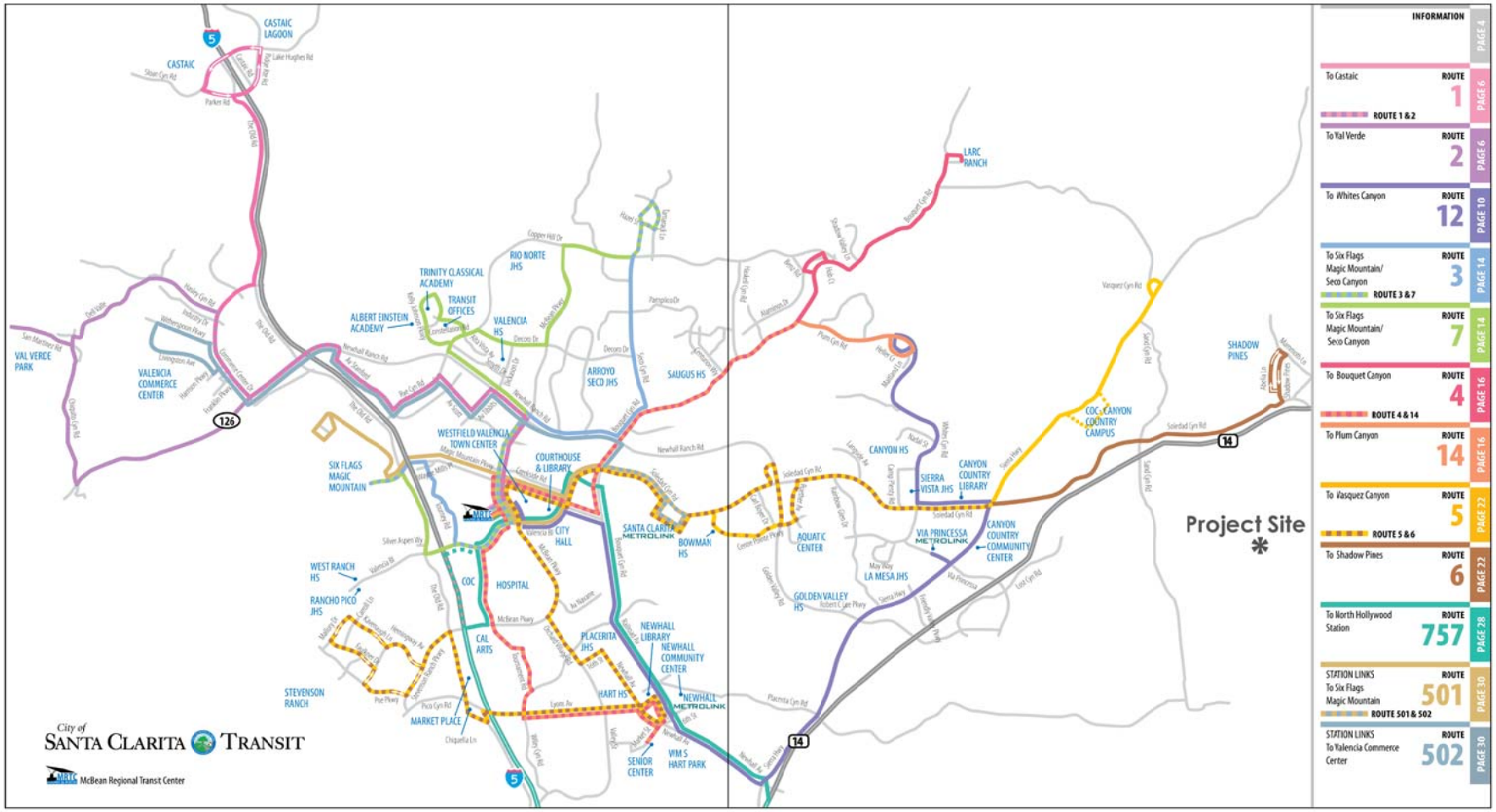
A survey can be done to determine employee interest in any potential expanded bus service as needed. This information can be passed on to SCT by the ETC. If sufficient demand for riding transit exists with the employees, Sand Canyon Resort could operate a shuttle between the nearest bus stop and the project site at the beginning and end of each work shift. A shuttle bus service provided to and from the transit station or the bus stop would encourage employees to use public transit.

SCT operates a DAR transit service for qualified elderly or special needs customers as well as the general public. It provides curb-to-curb service within the City. The DAR services the elderly and disabled from 4:30 AM to 10:30 PM Monday to Friday, 6:30 AM to 10:30 PM on Saturday, and 8:00 AM to 8:00 PM on Sunday. The service hours for the general public are from 6:00 PM to 10:30 PM Monday to Saturday, and 6:00 PM to 8:00 PM on Sunday.

Current DAR services, SCT bus schedules and maps can be obtained online at www.santaclaritatransit.com. The Santa Clarita DAR service information and the Passenger Guide is included in Appendix B. It can be downloaded online at http://santaclaritatransit.com/services/dial-a-ride-asi/

Metrolink Train Service

Santa Clarita is located on a major north-south Metrolink rail line which provides commuter train service. Three Metrolink Stations serve Santa Clarita. Two of the stations, Newhall and Santa Clarita Metrolink stations are connected by local bus Route 6. As mentioned above, Route 6 runs along Soledad Canyon and the nearest bus stop to the project site is approximately two miles. Train service can provide long distance commuters with transportation to the bus stops near the site. A shuttle bus service can be provided to and from the transit station or the bus stop to encourage employees to use public transit. Current Metrolink schedules are available online at www.metrolinktrains.com. Copies of the Metrolink train schedules can also be obtained at the Santa Clarita Metrolink Station.



Source: City of Santa Clarita Transit

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Figure 4

Santa Clarita Transit System Map

3.1.2 Carpooling

Carpooling and vanpooling is a type of ridesharing program that reduces traffic significantly since the passengers are usually other drivers. Finding a carpool partner is key to starting a carpool, which can be done using ride matching services. The ride matching can be done internally with staff using bulletin boards or externally using online carpool matching services

Internal carpool matching with employees is relatively easy. The ETC should compile a list of employees interested in carpooling that includes the employee's home cities and work phone number or extension. This list can be posted at the designated Rideshare Information Area in the building. Employees who are interested in carpooling can then contact other employees who live close to them to coordinate with each other.

External carpool matching has become very easy with the internet. Metro and other local transportation agencies offer online carpool matching via 323-GO-METRO. This phone number allows users to register their commute information and the service will match the user with a list of other potential carpoolers who have similar commute schedules and home and destination areas. For more information or to get rideshare information, visit www.commutesmart.info for details.

Carpool meeting locations are often arranged among the carpoolers. However, other mutual convenient shopping center parking lots or one of many official Park and Ride lots throughout Southern California can also be used. These lots can be located on the internet at www.ie511.org/rideshare/park-and-ride.

3.1.3 Motorcycle and Bicycle Use

Although the automobile is the most common type of vehicle used for commuting in Southern California, other vehicle types exist that accomplish the same purpose with much less traffic and pollution impact. Currently, the motorcycle and bicycle are the vehicle types that have the narrowest profile of all vehicles and cause the least traffic impact.

Motorcycles provide the same amount of mobility cars provide yet produce a lower traffic and parking impact. They occupy less than half the space of a car and even less compared to a sports utility vehicle (SUV). In traffic, a motorcycle easily bypasses traffic congestion due to its small size. Parking has traditionally been designed for automobiles since motorcycles are not a primary means of transportation, thus no motorcycle parking is usually provided for new developments. Although motorcycles have some drawbacks compared with an automobile, growing congestion in the region makes motorcycle use more desirable.

Bicycle riding should be encouraged since it has low traffic impact, is non-polluting and healthy for the commuter. Southern California is particularly well suited for bicycle commuting due to its temperate climate. A five to seven miles distance is often found to be easily commutable on a bicycle. In addition, Santa Clarita buses have bike racks in front of some buses, making bike commuting very convenient and extend the range of a bike commuter. Bikeways have also been implemented throughout the city, which make bicycling safer and more convenient. Santa Clarita's bikeway map is shown in Appendix C, and can be accessed interactively at http://gis.santa-clarita.com/html5/ostrails.html

3.1.4 Guaranteed Ride Home

A complementary part of the TDM strategy to encourage alternative transportation is the provision of a car for a transit user or carpooler in order to run lunch errands or to have a guaranteed ride home in case of emergency. This gives an alternative to the transportation user and the security of knowing that he or she can access a vehicle when needed. The ETC could help facilitate short-term use of vehicles to accommodate emergency needs of the employees.

Another way to guarantee a ride home for a transit user or carpooler is to use Zipcar or a similar service. Zipcar offers a car-sharing program that would be useful for carpoolers and transit users who need to access a car when needed. This service works by charging a membership fee. The price includes gasoline and insurance. In addition to the membership fee there is a monthly plan, occasional driving plan and extra value plan that can be chosen according to individual needs. Details on the program are available at www.zipcar.com.

3.2 ALTERNATIVE WORK SCHEDULES

The use of alternative work schedules is a TDM strategy that reduces the number of commuters on the road during peak travel times. It can be done by allowing employees to shift their arrival and departure times out of the peak commute hours. While this is a strategy that merely shifts traffic away from the peak rather than eliminating traffic demand, the resulting decrease in peak period traffic congestion may result in reduced vehicle emissions from increased travel speeds and reduced delays (idling emissions) at intersections. However, this allows people to continue driving instead of using public transit when it is the most effective and attractive, particularly for express commuter services. Allowing alternative schedules also reduces the potential for carpooling.

There are several alternative work schedule options, which include flexible hours, a shifted early or late eight-hour schedule in a regular five-day week, or a compressed work week, which allows employees to work long hours and fewer days in a week. This reduces the number of trips to/from work and also shifts the time of travel to off-peak periods. A compressed work week can encompass any of the following:

- “9/80 Schedule”: a schedule of 9 working days of 80 working hours in two weeks, where an employee works 9-hour days for 8 days and an 8-hour day which allows alternate Fridays (or any other chosen weekday) off for the employee.
- “8/80 schedule”: a schedule where the employee works 10-hour days for four days to achieve the 40-hour work week.

These work schedules can be provided as an alternative to reduce peak hour congestion on streets adjacent to the project site if bus service cannot be brought in to serve the office site.

4.0 TDM PLAN SUMMARY

The Sand Canyon Resort can utilize TDM strategies to reduce vehicle trips and parking needs. The strategies described in the TDM plan in the previous chapter complement each other and would be most effective if implemented together. At the minimum, the following TDM facilities and services are recommended to be provided by the resort, as required by the City of Santa Clarita.

1. An employee common area space such as a lunch room or coffee area should be used to provide rideshare information like the current bus and train routes and schedules, and other public transit resources. The building management should assign an ETC among staff to implement and promote TDM strategies. A commuter information kiosk should be installed to provide transit and rideshare information, with access to local transportation agency websites including Santa Clarita Transit, Metrolink, and Rideshare service at www.commutesmart.info

2. Provide designated parking for carpool vehicles with at least five spaces. Implement a carpool permit system administered by the ETC. At least two motorcycle parking spaces should be provided by converting a regular car parking space in the designated employee parking area.

3. Rideshare vehicle loading areas should be provided at the curb in front of the employee entrances to the building, preferably with a bench.

4. Secure bicycle storage racks should be provided for at least 10 bicycles located adjacent to the employee entrances of the buildings.

5. Shower facilities should be provided with at least two shower stalls, and can be unisex if separate dressing areas for each shower stall are provided and enclosed with internal doors, and with a shared wash basin and mirror area.

6. A central lunch area or outside eating area should be provided to allow employees to have a place for lunch to minimize the need for additional travel. Information on catering/delivery menu for food should also be provided to reduce vehicle trips for lunch.

7. The resort management should offer financial incentives to encourage employees to commute by other modes of transportation. Under Commuter Choice program, employers can pay their employees up to $100 per month ($1,200 per year) in tax-free benefits to commute to work by transit or eligible vanpools. It offers a significant tax savings to both employers and employees.

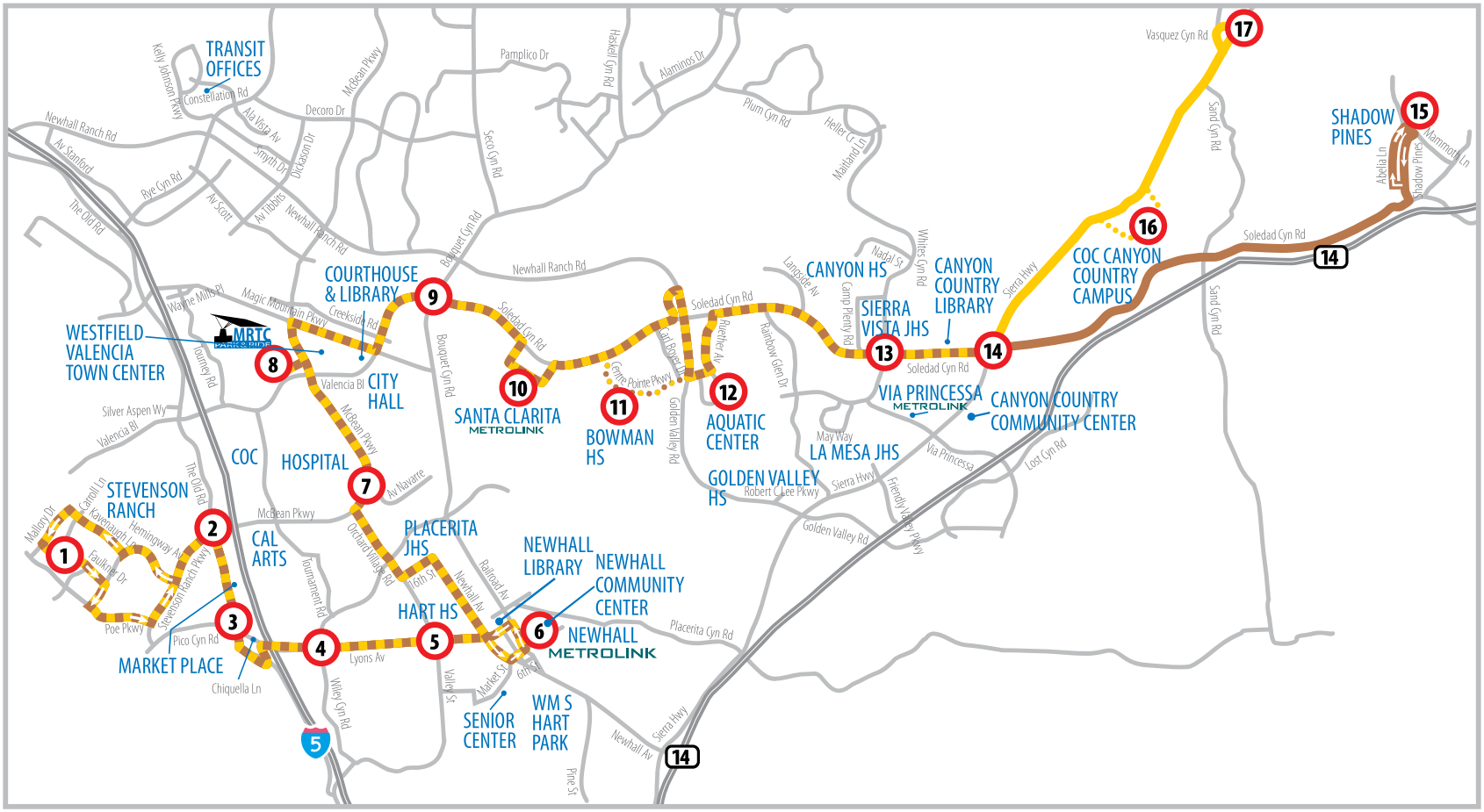
Detailed design of the TDM facilities in the parking lot should be completed by the project civil engineers, and facilities such as the central lunch area and shower facilities should be designed by the project architects.

Appendix A SANTA CLARITA BUS SCHEDULES

ROUTE 5 / ROUTE 6

SERVING:

- Stevenson Ranch
- Valencia Market Place
- Sunset Pointe
- William S. Hart High School
- Newhall Community Center
- Newhall Metrolink Station
- Henry Mayo Newhall Memorial Hospital
- McBean Regional Transit Center
- Westfield Valencia Town Center
- Santa Clarita Metrolink Station
- Bowman High School
- Santa Clarita Aquatic Center
- Canyon Country Community Center
- COC Canyon Country Campus
- Shadow Pines



MRTC PARK & RIDE McBean Regional Transit Center (1) Key Bus Stop Routes 5 & 6 Route 5 Route 6

Please note: There are more bus stops than appear on map and schedule. Buses stop at all stops located along the route if customer is waiting to board or needs to depart.

ROUTE 5 / ROUTE 6

MONDAY - FRIDAY: To Vasquez Canyon / Shadow Pines

Route	Carroll Ln & Faulkner Dr (1)	Stevenson Ranch Pkwy & The Old Rd (2)	The Old Road & Chiquella Ln (3)	Lyons Av & Wiley Cyn Rd (4)	Lyons Av & Orchard Village Rd (5)	Newhall Metrolink Station (6)	McBean Pkwy & Av Navarre (7)	McBean Regional Transit Center ARRIVE (8)	McBean Regional Transit Center DEPART (8)	Soledad Cyn Rd & Bouquet Cyn Rd (9)	Santa Clarita Metrolink Station (10)	Bowman High School (11)	Aquatic Center (12)	Soledad Cyn Rd & Whites Cyn Rd (13)	Soledad Cyn Rd & Sierra Hwy (14)	Shadow Pines Bl & Grandiflora Rd (15)	COC Canyon Country Campus (16)	Sierra Hwy & Vasquez Cyn Rd (17)
6	421A	426A	430A	434A	438A	444A	451A	456A	459A	508A				520A	524A	536A		
6						510A	518A	523A	535A	544A				556A	600A	612A		
6	503A	508A	512A	516A	520A	526A	534A	539A	551A	600A	605A			615A	619A	631A		
5						600A	608A	613A	621A	630A				642A	646A		651A	656A
6	545A	550A	554A	558A	602A	608A	616A	621A	633A	642A	647A			657A	701A	713A		
5						630A	639A	644A	649A	658A				712A	716A		721A	726A
6	621A	626A	631A	635A	639A	645A	657A	703A	715A	724A	729A			739A	743A	755A		
5						706A	718A	724A	730A	739A		751A	758A	808A	813A		818A	823A
6	658A	703A	708A	712A	716A	722A	734A	740A	750A	759A			809A	819A	823A	835A		
5						736A	748A	754A	805A	814A			824A	834A	838A		845A	850A
6	726A	731A	736A	740A	744A	750A	802A	808A	820A	829A			839A	849A	853A	905A		
5						806A	818A	824A	835A	844A			854A	904A	908A		915A	920A
6	802A	807A	812A	816A	820A	826A	838A	844A	856A	905A			915A	925A	929A	941A		
5									911A	920A			930A	940A	944A		951A	956A
6	831A	836A	841A	845A	849A	855A	907A	913A	925A	934A			944A	954A	958A	1010A		
6	901A	906A	911A	915A	919A	925A	937A	943A	955A	1004A			1014A	1024A	1028A	1040A		
6	936A	941A	946A	950A	954A	1000A	1012A	1018A	1025A	1034A			1044A	1054A	1058A	1110A		
5									1046A	1055A			1105A	1115A	1119A		1126A	1131A
6	1011A	1016A	1021A	1025A	1029A	1035A	1047A	1053A	1105A	1114A		1126A	1131A	1141A	1145A	1157A		
5	1036A	1041A	1046A	1050A	1054A	1100A	1112A	1118A	1130A	1139A			1149A	1159A	**1203P**		**1210P**	**1215P**
6	1101A	1106A	1111A	1115A	1119A	1125A	1137A	1143A	1155A	**1204P**			**1214P**	**1224P**	**1228P**	**1240P**		
5	1134A	1139A	1144A	1148A	1152A	1158A	**1210P**	**1216P**	**1228P**	**1237P**			**1247P**	**1257P**	**101P**		**108P**	**113P**
6	1156A	**1201P**	**1206P**	**1210P**	**1214P**	**1220P**	**1232P**	**1238P**	**1245P**	**1254P**			**104P**	**114P**	**118P**	**130P**		
5	**1226P**	**1231P**	**1236P**	**1240P**	**1244P**	**1250P**	**102P**	**108P**	**120P**	**129P**			**139P**	**149P**	**153P**		**200P**	**205P**
6	**1251P**	**1256P**	**101P**	**105P**	**109P**	**115P**	**127P**	**133P**	**145P**	**154P**			**204P**	**214P**	**218P**	**230P**		
6									**215P**	**224P**				**235P**	**239P**	R **255P**		
5	**138P**	**148P**	**153P**	**157P**	**201P**	**207P**	**219P**	**225P**	**237P**	**246P**			**256P**	**306P**	**314P**		**321P**	**326P**
6	**156P**	**206P**	**211P**	**215P**	**219P**	**225P**	**237P**	**243P**	**250P**	**259P**		**310P**	**315P**	**326P**	**334P**	R **349P**		
6	**221P**	**226P**	**231P**	**235P**	**239P**	**245P**	**257P**	**303P**	**315P**	**324P**			**334P**	**348P**	**352P**	**404P**		
5	**250P**	**255P**	**300P**	**304P**	**308P**	**314P**	**326P**	**332P**	**344P**	**353P**			**403P**	**417P**	**421P**		**428P**	**433P**
6						**318P**	**330P**	**336P**	**349P**	**358P**			**408P**	**422P**	**426P**	**438P**		
6	**314P**	**319P**	**324P**	**328P**	**332P**	**338P**	**350P**	**356P**	**408P**	**417P**	**427P**		**437P**	**451P**	**455P**	**507P**		
5						**352P**	**404P**	**410P**	**420P**	**429P**	**439P**		**449P**	**503P**	**507P**		**514P**	**519P**
6						**411P**	**423P**	**429P**	**440P**	**449P**	**454P**		**504P**	**516P**	**520P**	**532P**		
5	**400P**	**415P**	**420P**	**424P**	**428P**	**434P**	**446P**	**452P**	**504P**	**513P**	**519P**		**529P**	**541P**	**545P**		**552P**	**557P**
6						**441P**	**453P**	**459P**	**510P**	**519P**			**529P**	**541P**	**545P**	**557P**		
5	**424P**	**439P**	**444P**	**448P**	**452P**	**458P**	**510P**	**516P**	**528P**	**537P**	**542P**		**552P**	**604P**	**608P**		**615P**	**620P**
6						**511P**	**523P**	**529P**	**540P**	**549P**	**554P**		**604P**	**615P**	**619P**	**631P**		
6						**541P**	**553P**	**559P**	**610P**	**619P**	**624P**		**634P**	**644P**	**648P**	**700P**		
6	**515P**	**530P**	**537P**	**541P**	**545P**	**551P**	**603P**	**609P**	**621P**	**630P**	**635P**		**645P**	**655P**	**659P**	**711P**		
5	**533P**	**548P**	**553P**	**557P**	**601P**	**607P**	**619P**	**625P**	**631P**	**640P**	**645P**		**655P**	**705P**	**709P**		S **714P**	**719P**
5									**710P**	**719P**	**724P**		**734P**	**744P**	**748P**		S **753P**	**758P**
6	**616P**	**631P**	**636P**	**640P**	**644P**	**650P**	**702P**	**708P**	**720P**	**729P**	**734P**		**744P**	**754P**	**758P**	**810P**		
6	**643P**	**653P**	**658P**	**702P**	**706P**	**712P**	**724P**	**730P**	**742P**	**751P**			**801P**	**811P**	**815P**	**827P**		
5	**655P**	**710P**	**715P**	**719P**	**723P**	**729P**	**741P**	**747P**	**759P**	**808P**			**818P**	**828P**	**832P**		S **837P**	**842P**
6	**736P**	**748P**	**753P**	**757P**	**801P**	**807P**	**819P**	**825P**	**837P**	**846P**	**851P**		**901P**	**911P**	**915P**	**927P**		
6	**759P**	**811P**	**816P**	**820P**	**824P**	**830P**	**840P**	**846P**	**858P**	**906P**			**916P**	**926P**	**930P**	**942P**		
5	**848P**	**853P**	**858P**	**902P**	**906P**	**912P**	**922P**	**928P**	**938P**	**946P**			**956P**	**1006P**	**1010P**		S **1012P**	**1017P**
6	**857P**	**902P**	**907P**	**911P**	**915P**	**921P**	**931P**	**937P**	**947P**	**955P**				**1007P**	**1011P**	**1023P**		
6	**929P**	**934P**	**939P**	**943P**	**947P**	**953P**	**1003P**	**1009P**	**1015P**	**1023P**	**1028P**		**1038P**	**1048P**	**1052P**	**1104P**		
6	**957P**	**1002P**	**1007P**	**1011P**	**1015P**	**1021P**												

R Serves Mammoth Lane prior to Shadow Pines Bl and Grandifloras Rd on school days only.

S Serves COC Canyon Country Campus stop Mondays - Thursdays only.

PM = BOLD

DRAFT

ROUTE 5 / ROUTE 6 MONDAY - FRIDAY: To Stevenson Ranch

ROUTE	Sierra Hwy & Vasquez Cyn Rd (17)	Sierra Hwy & Campus Exit (COC) (16)	Shadow Pines Bl & Grandifloras Rd (15)	Soledad Cyn Rd & Sierra Hwy (14)	Soledad Cyn Rd & Whites Cyn Rd (13)	Aquatic Center (12)	Bowman High School (11)	Santa Clarita Metrolink Station (10)	Soledad Cyn Rd & Bouquet Cyn Rd (9)	McBean Regional Transit Center ARRIVE (8)	McBean Regional Transit Center DEPART (8)	Orchard Village Rd & McBean Pkwy (7)	Newhall Metrolink Station (6)	Lyons Ave & Orchard Village Rd (5)	Lyons Ave & Wiley Cyn Rd (4)	The Old Rd & Chiquella Ln (3)	Stevenson Ranch Pkwy & The Old Rd (2)	Carroll Ln & Faulkner Dr (1)
6																	415A	421A
6																	457A	503A
6			410A	421A	425A			435A	439A	448A	459A	505A	515A	520A	524A	527A	533A	539A
6			455A	506A	510A				521A	529A	535A	542A	551A	556A	600A	603A	615A	621A
6											555A	602A	612A					
5	528A			536A	540A			550A	554A	603A	615A	622A	632A	637A	641A	644A	650A	656A
6			537A	548A	552A			602A	606A	615A	630A	637A	647A					
5	558A			606A	610A			620A	624A	633A	645A	652A	702A	707A	711A	714A	720A	726A
6			612A	623A	627A			637A	641A	650A	702A	709A	721A					
5	626A			638A	642A			652A	656A	705A	715A	722A	734A	739A	743A	746A	752A	758A
6			632A	651A	655A			705A	709A	718A	730A	737A	749A					
5	656A	701A		710A	716A			726A	730A	739A	745A	752A	802A	807A	811A	814A	825A	831A
6				728A	734A			744A	748A	757A	802A	809A	819A					
6			713A	732A	740A			758A	802A	812A	815A	822A	832A	837A	841A	844A	855A	901A
5	727A	732A		738A	746A	756A	801A		809A	819A	831A	838A	848A	853A	857A	900A	906A	
6			756A	808A	812A	822A		831A	835A	844A	855A	902A	912A	917A	921A	924A	930A	936A
5	823A	828A		834A	838A	848A			858A	907A								
6			835A	847A	851A	901A			911A	920A	925A	932A	942A	947A	951A	954A	1005A	1011A
5	854A	859A		905A	909A	919A			929A	938A	950A	957A	1007A	1012A	1016A	1019A	1030A	1036A
6			910A	922A	926A	936A			946A	955A								
5	925A	930A		935A	939A	949A			959A	1008A	1015A	1022A	1032A	1037A	1041A	1044A	1055A	1101A
6			944A	956A	1000A	1010A			1020A	1029A								
5	957A	1002A		1008A	1012A	1022A			1032A	1041A	1053A	1100A	1110A	1115A	1119A	1122A	1128A	1134A
6			1013A	1025A	1029A	1039A			1049A	1058A	1110A	1117A	1127A	1132A	1136A	1139A	1150A	1156A
6			1040A	1052A	1056A	1106A	1114A		1122A	1133A	1145A	1152A	**1202P**	**1207P**	**1211P**	**1214P**	**1220P**	**1226P**
6			1113A	1125A	1129A	1139A			1149A	1158A	**1210P**	**1217P**	**1227P**	**1232P**	**1236P**	**1239P**	**1245P**	**1251P**
5	1135A	1140A		1146A	1150A	**1200P**			**1210P**	**1219P**								
6			1157A	**1209P**	**1214P**	**1226P**			**1236P**	**1245P**	**1257P**	**104P**	**114P**	**119P**	**123P**	**126P**	**132P**	**138P**
5	**1219P**	**1224P**		**1230P**	**1234P**	**1244P**			**1254P**	**103P**	**115P**	**122P**	**132P**	**137P**	**141P**	**144P**	**150P**	**156P**
6			**1243P**	**1255P**	**1259P**	**109P**			**119P**	**128P**	**140P**	**147P**	**157P**	**202P**	**206P**	**209P**	**215P**	**221P**
5	**115P**	**120P**		**126P**	**130P**	**140P**			**150P**	**159P**	**209P**	**216P**	**226P**	**231P**	**235P**	**238P**	**244P**	**250P**
6			**133P**	**145P**	**149P**	**159P**			**209P**	**218P**	**230P**	**237P**	**249P**	**255P**	**259P**	**302P**	**308P**	**314P**
5	**207P**	**212P**		**218P**	**222P**	**232P**			**242P**	**251P**	**258P**	**305P**	**317P**					
6											**310P**	**317P**	**329P**	**335P**	**339P**	**342P**	**348P**	**354P**
6			**232P**	**244P**	**248P**	**258P**	**304P**		**315P**	**324P***	**331P**	**338P**	**350P**					
6											**340P**	**347P**	**359P**	**405P**	**409P**	**412P**	**418P**	**424P**
6			**258P**	**310P**	**314P**	**324P**			**334P**	**343P**	**355P**	**402P**	**414P**					
6											**425P**	**432P**	**444P**					
5	**336P**	**341P**		**347P**	**351P**	**401P**			**411P**	**420P**	**432P**	**439P**	**451P**	**456P**	**500P**	**503P**	**509P**	**515P**
6			**355P**	**407P**	**411P**	**423P**			**433P**	**442P**	**450P**	**457P**	**509P**	**514P**	**518P**	**521P**	**527P**	**533P**
6			**407P**	**419P**	**423P**	**433P**			**443P**	**452P**	**455P**	**502P**	**514P**					
5	**437P**	**442P**		**448P**	**452P**	**502P**			**512P**	**521P**	**533P**	**540P**	**552P**	**557P**	**601P**	**604P**	**610P**	**616P**
6			**438P**	**450P**	**454P**	**504P**		**512P**	**517P**	**526P**	**529P**	**536P**	**548P**					
6			**507P**	**519P**	**523P**	**533P**		**541P**	**546P**	**555P**	**602P**	**609P**	**619P**	**624P**	**628P**	**631P**	**637P**	**643P**
5	**520P**	**525P**		**531P**	**535P**	**545P**			**555P**	**604P**	**614P**	**621P**	**631P**	**636P**	**640P**	**643P**	**649P**	**655P**
6			**535P**	**547P**	**551P**	**601P**			**611P**	**620P**	**630P**	**637P**	**647P**	**652P**	**656P**	**659P**	**705P**	**711P**
5	**557P**	**602P**		**608P**	**612P**	**622P**		**630P**	**635P**	**644P**	**655P**	**702P**	**712P**	**717P**	**721P**	**724P**	**730P**	**736P**
6			**607P**	**619P**	**623P**	**633P**			**643P**	**652P**								
5	**620P**	**625P**		**631P**	**635P**	**645P**		**653P**	**658P**	**707P**	**718P**	**725P**	**735P**	**740P**	**744P**	**747P**	**753P**	**759P**
6			**636P**	**648P**	**652P**	**702P**		**710P**	**715P**	**724P**								
6			**705P**	**717P**	**721P**	**731P**			**741P**	**750P**								
6			**711P**	**723P**	**727P**	**737P**			**747P**	**756P**	**808P**	**815P**	**824P**	**829P**	**833P**	**836P**	**842P**	**848P**
5	**723P**	**728P**		**734P**	**738P**	**748P**			**758P**	**807P**	**817P**	**824P**	**833P**	**838P**	**842P**	**845P**	**851P**	**857P**
5	**758P**	**803P**		**809P**	**813P**	**823P**			**833P**	**842P**	**850P**	**856P**	**905P**	**910P**	**914P**	**917P**	**923P**	**929P**
6			**810P**	**821P**														
6			**827P**	**838P**	**842P**	**852P**			**902P**	**911P**	**918P**	**924P**	**933P**	**938P**	**942P**	**945P**	**951P**	**957P**
5	**855P**	**900P**		**906P**	**910P**	**920P**			**930P**	**939P**	**949P**	**955P**	**1004P**	**1009P**	**1013P**	**1016P**	**1022P**	**1028P**
6			**927P**	**938P**	**942P**	**952P**			**1002P**	**1011P**	**1017P**	**1023P**	**1032P**	**1037P**	**1041P**	**1044P**	**1050P**	**1056P**
5	**1019P**	**1024P**		**1030P**	**1034P**													

PM = BOLD

ROUTE 5 / ROUTE 6 SATURDAY - SUNDAY: To Vasquez Canyon/Shadow Pines

Route	Carroll Ln & Faulkner Dr (15)	Stevenson Ranch Pkwy & The Old Rd (14)	The Old Rd & Chiquella Ln (13)	Lyons Ave & Wiley Cyn Rd (12)	Lyons Ave & Orchard Village Rd (11)	Newhall Metrolink Station (10)	McBean Pkwy & Avenida Navarre (9)	McBean Regional Transit Center ARRIVE (8)	McBean Regional Transit Center DEPART (8)	Soledad Cyn Rd & Bouquet Cyn Rd (7)	Aquatic Center (6)	Whites Cyn Rd & Soledad Cyn Rd (5)	Soledad Cyn Rd & Sierra Hwy (4)	Shadow Pines Bl & Grandifloras Rd (3)	Sierra Hwy & Campus Exit (COC) (2)	Sierra Hwy & Vasquez Cyn Rd (1)
5			639A	642A	646A	652A	702A	707A	718A	725A		736A	739A		744A	749A
6			709A	712A	716A	722A	732A	737A	748A	755A	803A	813A	816A	828A		
5	729A	734A	739A	742A	746A	752A	802A	807A	818A	825A	833A	843A	846A		851A	856A
6	801A	806A	811A	814A	818A	824A	834A	839A	850A	857A	905A	915A	918A	930A		
5	831A	836A	841A	844A	848A	854A	904A	909A	920A	927A	935A	945A	948A		953A	958A
6	901A	906A	911A	914A	918A	924A	934A	939A	950A	957A	1005A	1015A	1018A	1030A		
5	931A	936A	941A	944A	948A	954A	1004A	1009A	1020A	1027A	1035A	1045A	1048A		1053A	1058A
6	1001A	1006A	1011A	1014A	1018A	1024A	1034A	1039A	1050A	1057A	1105A	1115A	1118A	1130A		
5	1031A	1036A	1041A	1044A	1048A	1054A	1104A	1109A	1120A	1127A	1135A	1145A	1148A		1153A	1158A
6	1101A	1106A	1111A	1114A	1118A	1124A	1134A	1139A	1150A	1157A	**1205P**	**1215P**	**1218P**	**1230P**		
6	1131A	1136A	1141A	1144A	1148A	1154A	**1204P**	**1209P**	**1220P**	**1227P**	**1235P**	**1245P**	**1248P**	**100P**		
6	**1201P**	**1206P**	**1211P**	**1214P**	**1218P**	**1224P**	**1234P**	**1239P**	**1250P**	**1257P**	**105P**	**115P**	**118P**	**130P**		
5	**1231P**	**1236P**	**1241P**	**1244P**	**1248P**	**1254P**	**104P**	**109P**	**120P**	**127P**	**135P**	**145P**	**148P**		**153P**	**158P**
6	**101P**	**106P**	**111P**	**114P**	**118P**	**124P**	**134P**	**139P**	**150P**	**157P**	**205P**	**215P**	**218P**	**230P**		
5	**131P**	**136P**	**141P**	**144P**	**148P**	**154P**	**204P**	**209P**	**220P**	**227P**	**235P**	**245P**	**248P**		**253P**	**258P**
6	**201P**	**206P**	**211P**	**214P**	**218P**	**224P**	**234P**	**239P**	**250P**	**257P**	**305P**	**315P**	**318P**	**330P**		
6	**231P**	**236P**	**241P**	**244P**	**248P**	**254P**	**304P**	**309P**	**320P**	**327P**	**335P**	**345P**	**348P**	**400P**		
6	**301P**	**306P**	**311P**	**314P**	**318P**	**324P**	**334P**	**339P**	**350P**	**357P**	**405P**	**415P**	**418P**	**430P**		
5	**331P**	**336P**	**341P**	**344P**	**348P**	**354P**	**404P**	**409P**	**420P**	**427P**	**435P**	**445P**	**448P**			**456P**
6	**401P**	**406P**	**411P**	**414P**	**418P**	**424P**	**434P**	**439P**	**450P**	**457P**	**505P**	**515P**	**518P**	**530P**		
6	**431P**	**436P**	**441P**	**444P**	**448P**	**454P**	**504P**	**509P**	**520P**	**527P**	**535P**	**545P**	**548P**	**600P**		
5	**501P**	**506P**	**511P**	**514P**	**518P**	**524P**	**534P**	**539P**	**550P**	**557P**	**605P**	**615P**	**618P**			**626P**
6	**531P**	**536P**	**541P**	**544P**	**548P**	**554P**	**604P**	**609P**	**620P**	**627P**	**635P**	**645P**	**648P**	**700P**		
6	**601P**	**606P**	**611P**	**614P**	**618P**	**624P**	**634P**	**639P**	**650P**	**657P**	**705P**	**715P**	**718P**	**730P**		
5	**631P**	**636P**	**641P**	**644P**	**648P**	**654P**	**704P**	**709P**	**720P**	**727P**	**735P**	**745P**	**748P**			**756P**
6	**701P**	**706P**	**711P**	**714P**	**718P**	**724P**	**734P**	**739P**	**750P**	**757P**	**805P**	**815P**	**818P**	**830P**		
6	**731P**	**736P**	**741P**	**744P**	**748P**	**754P**	**804P**	**809P**	**820P**	**827P**	**835P**	**845P**	**848P**	**900P**		
5	**801P**	**806P**	**811P**	**814P**	**818P**	**824P**	**834P**	**839P**	**847P**	**854P**	**902P**	**912P**	**915P**			**923P**
6	**901P**	**906P**	**911P**	**914P**	**918P**	**924P**	**934P**	**939P**	**947P**	**954P**	**1002P**	**1012P**	**1015P**	**1026P**		

PM = BOLD **SUNDAY SERVICE IN RED BRACKET**

ROUTE 5 / ROUTE 6 SATURDAY - SUNDAY: To Stevenson Ranch

Route	Sierra Hwy & Vasquez Cyn Rd (15)	Sierra Hwy & Campus Exit (COC) (14)	Shadow Pines Bl & Grandifloras Rd (13)	Soledad Cyn Rd & Sierra Hwy (12)	Soledad Cyn d & Whites Cyn Rd (11)	Aquatic Center (10)	Soledad Cyn Rd & Bouquet Cyn Rd (9)	McBean Regional Transit Center ARRIVE (8)	McBean Regional Transit Center DEPART (8)	McBean Pkwy & Avenida Navarre (7)	Newhall Metrolink Station (6)	Lyons Ave & Orchard Village Rd (5)	Lyons Ave & Wiley Cyn Rd (4)	The Old Road & Chiquella Ln (3)	Stevenson Ranch Pkwy & The Old Rd (2)	Carroll Ln & Faulkner Dr (1)
6															723A	729A
6									720A	727A	737A	742A	746A	749A	755A	801A
6			705A	717A	720A		731A	738A	750A	757A	807A	812A	816A	819A	825A	831A
6			735A	747A	750A		801A	808A	820A	827A	837A	842A	846A	849A	855A	901A
5	801A	806A		812A	815A	824A	833A	840A	845A	852A	902A	907A	911A	914A	920A	926A
6			835A	847A	850A	859A	908A	915A	920A	929A	937A	942A	946A	949A	955A	1001A
5	906A	911A		917A	920A	929A	938A	945A	950A	957A	1007A	1012A	1016A	1019A	1025A	1031A
6			935A	947A	950A	959A	1008A	1015A	1020A	1027A	1037A	1042A	1046A	1049A	1055A	1101A
5	1006A	1011A		1017A	1020A	1029A	1038A	1045A	1050A	1057A	1107A	1112A	1116A	1119A	1125A	1131A
6			1035A	1047A	1050A	1059A	1108A	1115A	1120A	1127A	1137A	1142A	1146A	1149A	1155A	**1201P**
5	1106A	1111A		1117A	1120A	1129A	1138A	1145A	1150A	1157A	**1207P**	**1212P**	**1216P**	**1219P**	**1225P**	**1231P**
6			1135A	1147A	1150A	1159A	**1208P**	**1215P**	**1220P**	**1227P**	**1237P**	**1242P**	**1246P**	**1249P**	**1255P**	**101P**
5	**1206P**	**1211P**		**1217P**	**1220P**	**1229P**	**1238P**	**1245P**	**1250P**	**1257P**	**107P**	**112P**	**116P**	**119P**	**125P**	**131P**
6			**1235P**	**1247P**	**1250P**	**1259P**	**108P**	**115P**	**120P**	**127P**	**137P**	**142P**	**146P**	**149P**	**155P**	**201P**
6			**105P**	**117P**	**120P**	**129P**	**138P**	**145P**	**150P**	**157P**	**207P**	**212P**	**216P**	**219P**	**225P**	**231P**
6			**135P**	**147P**	**150P**	**159P**	**208P**	**215P**	**220P**	**227P**	**237P**	**242P**	**246P**	**249P**	**255P**	**301P**
5	**206P**	**211P**		**217P**	**220P**	**229P**	**238P**	**245P**	**250P**	**257P**	**307P**	**312P**	**316P**	**319P**	**325P**	**331P**
6			**235P**	**247P**	**250P**	**259P**	**308P**	**315P**	**320P**	**327P**	**337P**	**342P**	**346P**	**349P**	**355P**	**401P**
5	**306P**	**311P**		**317P**	**320P**	**329P**	**338P**	**345P**	**350P**	**357P**	**407P**	**412P**	**416P**	**419P**	**425P**	**431P**
6			**335P**	**347P**	**350P**	**359P**	**408P**	**415P**	**420P**	**427P**	**437P**	**442P**	**446P**	**449P**	**455P**	**501P**
6			**405P**	**417P**	**420P**	**429P**	**438P**	**445P**	**450P**	**457P**	**507P**	**512P**	**516P**	**519P**	**525P**	**531P**
6			**435P**	**447P**	**450P**	**459P**	**508P**	**515P**	**520P**	**527P**	**537P**	**542P**	**546P**	**549P**	**555P**	**601P**
5	**508P**			**517P**	**520P**	**529P**	**538P**	**545P**	**550P**	**557P**	**607P**	**612P**	**616P**	**619P**	**625P**	**631P**
6			**535P**	**547P**	**550P**	**559P**	**608P**	**615P**	**620P**	**627P**	**637P**	**642P**	**646P**	**649P**	**655P**	**701P**
6			**605P**	**617P**	**620P**	**629P**	**638P**	**645P**	**650P**	**657P**	**707P**	**712P**	**716P**	**719P**	**725P**	**731P**
5	**637P**			**646P**	**649P**	**658P**	**707P**	**714P**	**720P**	**727P**	**737P**	**742P**	**746P**	**749P**	**755P**	**801P**
6			**705P**	**716P**	**719P**	**728P**	**737P**	**744P**	**750P**	**757P**	**807P**	**812P**	**816P**	**819P**	**825P**	**831P**
6			**735P**	**746P**	**749P**	**758P**	**807P**	**814P**	**820P**	**827P**	**837P**	**842P**	**846P**	**849P**	**855P**	**901P**
5	**807P**			**816P**	**819P**	**828P**	**837P**	**844P**	**850P**	**857P**	**907P**	**912P**	**916P**	**919P**	**925P**	**931P**
6			**905P**	**916P**	**919P**	**928P**	**937P**	**944P**	**950P**	**957P**	**1007P**	**1012P**	**1016P**	**1019P**	**1025P**	**1031P**

PM = BOLD **SUNDAY SERVICE IN RED BRACKET**

Appendix B SANTA CLARITA DIAL-A-RIDE PASSENGER GUIDE

City of
SANTA CLARITA TRANSIT

The City of Santa Clarita Transit is committed to providing Santa Clarita Valley residents and visitors with valued transportation services, and our services extend to customers with special needs due to age or disabilities.

Dial-A-Ride

Transit Maintenance Facility (TMF)
28250 Constellation Rd.
Santa Clarita, CA 91355

(661) 294-9327
SantaClaritaTransit.com

Convenient • Safe • Reliable

Table of Contents

Hours of Operation

Elderly and Disabled Service

Monday - Friday: 4:30 a.m. to 10:30 p.m.
Saturday: 6:30 a.m. to 10:30 p.m.
Sunday: 8:00 a.m. to 8:00 p.m.

General Public Service

Monday – Saturday: 6:00 p.m. to 10:30 p.m.
Sunday: 6:00 p.m. to 8:00 p.m.

Dial-A-Ride

Dial-A-Ride paratransit service provides curb-to-curb service for qualified elderly or special needs customers, as well as the general public. Dial-A-Ride riders may schedule a trip for any purpose within the Santa Clarita Valley. Trips are not prioritized, which means riders can visit a friend or relative, go to a movie, visit the doctor, or go shopping.

DAR Fares

General Public	$2.00
Senior/Disabled	$2.00
Children Under 5	FREE
Personal Care Attendants	FREE
Companions	$2.00

Exact fare is required and must be paid upon boarding the vehicle. Children over 5-years-old will pay the same fare paid by the accompanying adult. Fares are subject to change.

Eligibility

Residents of Santa Clarita who are at least 60 years of age or have a certified disability are eligible to use Dial-A-Ride anytime during regular service hours. Verification of age and disability is required for use of Dial-A-Ride services. A photocopy of your official California identification, Los Angeles County Transit Operators Association (LACTOA) card, Senior/Disabled TAP card, Medicare card, ASI ID card, or state issued photo identification will be accepted.

Dial-A-Ride service is also available to the general public after 6:00 p.m., seven days a week. All reservations are made on a space available basis.

Registration Information

To register for Dial-A-Ride please call (661) 294-9327 between 6 a.m. and 6 p.m., Monday through Friday. During the registration process, you will be asked for your local address and phone number. Verification of age and/or disability are required for use of Dial-A-Ride services.

Following the brief registration process, a customer identification number will be issued to you, after which you can begin scheduling reservations.

Note: A rider is only certified to use Dial-A-Ride for a certain period of time. Please note the expiration date you are given. It is the rider's responsibility to call Customer Service at (661) 294-9327 (TDD/TTY 1-800-827-1359) to renew his/her eligibility 30 days prior to the expiration date.

Once an individual has been certified as eligible to use Dial-A-Ride services, a rider may schedule a trip for any purpose.

Service Area

Dial-A-Ride serves all areas within the City of Santa Clarita. In unincorporated territory, Dial-A-Ride serves destinations within 3/4 of a mile from any Santa Clarita Transit local route bus stop.

Holiday Service

There is no service on the following holidays:

- Thanksgiving Day
- Christmas Day

Service operates on a Sunday schedule on New Year's Day, Memorial Day, Independence Day, and Labor Day. Weekday hours apply to all other holidays that fall on a weekday.

Disabled Services (all ages)

Individuals with disabilities who are interested in using Dial-A-Ride must be registered and certified Americans with Disabilities Act (ADA) eligible by Access Services Inc. (ASI) or possess a LACTOA Disabled Identification Card before using the service. To register for Access Services, call ASI Customer Service toll-free at 1-800-827-0829, (TTY 1-800-827-1359). For a LACTOA application, call (661) 294-9327.

At your request, an application and information packet will be mailed to you explaining registration and eligibility certification procedures.

General Public

Dial-A-Ride service is available to the general public after 6:00 p.m., seven days a week, on a space available basis. There are no eligibility requirements. Following the brief registration process, a customer identification number will be issued to you.

Scheduling a Trip

When calling to schedule a trip, be prepared to give the Customer Service Agent the following information:

- Rider's ID number.
- Rider's first and last name.
- If an attendant, child, or companion will be riding with you.

- Rider's exact address, including an apartment number, building, or business name if appropriate.
- Exact pick-up location if different from rider's address.
- The exact address of rider's destination, including suite number, building, or business name, and phone number if appropriate.
- Rider's requested pick-up time and appointment time (if applicable).
- Be sure to advise the Customer Service Agent if the rider will be traveling with a wheelchair or other mobility device (such as a walker, crutches, or cane).

There are no daily limits on the number of reservations that can be requested.

Only four one-way trip reservations can be made per telephone call. Callers may request transportation for more than one client during each call, as long as they do not exceed the maximum of four, one-way trips.

Reservations can be made between the hours of 6:00 a.m. and 6:00 p.m., Monday through Friday by calling (661) 294-9327. Rides can be reserved one to seven days in advance. Rides for Sunday and/or Monday must be scheduled no later than the previous Friday. Due to the popularity of service, we will be unable to provide same day trip requests.

Dial-A-Ride is a shared ride service. Remember to allow at least one-and-a half hours travel time to your destination since the vehicle may have additional customer pick-ups or drop-offs along the way.

The Customer Service Agents are required to ask for complete information and will repeat the information along with the fare to the caller to ensure that everything is correct.

Pick-up Window

The pick-up window begins 15 minutes before your scheduled pick-up time and extends to 15 minutes after. Please be prepared to travel at least 15 minutes prior to your **scheduled** pick-up time.

A driver will wait five minutes for a rider after arriving at the pick-up location. If the rider does not appear during the five minute wait time, the driver will mark the individual as a no-show and depart. If a driver arrives before the start of the pick-up window, the driver will wait for five minutes after the start of the window time.

Dial-A-Ride makes every effort to be reliable and on time. If the vehicle has not arrived within 30 minutes after the scheduled pick-up time, please call Customer Service at (661) 294-9327.

Pick-up and Drop-off Procedures

To ensure that a rider's trip goes smoothly, we have developed the following pick-up and drop-off procedures for the rider's convenience.

City of Santa Clarita Transit provides curb-to-curb service. Therefore, the driver will wait for an individual at the curb of a public street, in front of or as close to the rider's house, building, or other designated pick-up location, as possible.

For passenger drop-offs, the driver will drop the rider off at the sidewalk, or another safe waiting area next to the curb of a public street, in front of or as close to the designated drop-off location as possible.

Riders must be waiting at the sidewalk or at another safe waiting area in front of or as close to the entrance of the pick-up location as possible. The driver cannot enter the building or come to the door to assist riders. If a rider needs assistance exiting the pick-up location, please make sure that a companion or personal care attendant is available to assist.

Apartments/Office Complexes

When scheduling a trip, please provide the Customer Service Agent with the specific building name and number within the complex where the rider would like to be picked up.

Nursing Homes/Adult Daycare

Riders picked up at nursing homes should meet the driver in front of the main lobby unless otherwise specified. If an individual other than the rider is responsible for the rider's fare, please notify the Customer Service Agent so the fare can be collected from staff personnel or a personal care attendant at the time of boarding. Drivers cannot assist riders into or out of nursing homes, so please have staff personnel ready to assist the individual out of the nursing home, if necessary. Riders will be dropped off in front of the main lobby of the nursing home, and staff will be notified.

Gated Communities

If the rider's pick-up location is located within a gated community and requires special entry, notify the security office to arrange entry for the vehicle before pick-up time. If a rider does not arrange for entry, and the vehicle is unable to enter the pick-up area, the rider will be considered a no-show.

Major Activity Centers

Designated pick-up and drop-off sites have been established at major activity centers and certain destinations such as

large medical centers, parks, malls and colleges. If a rider schedules a trip at one of these destinations, the Customer Service Agent will tell the rider where the pick-up point is located, and the rider will need to wait at that location for the vehicle.

Driver Assistance

Drivers are only allowed to assist riders getting on and off the vehicle. The driver may also escort a rider to and from the sidewalk or other safe waiting area located next to the street where the vehicle is parked.

Drivers cannot assist a rider to the door or into an individual's house. If assistance is needed to and from a pick-up or drop-off location, please have a companion or personal care attendant to provide assistance. City of Santa Clarita Transit and its drivers are not responsible for a rider before the individual boards or after he or she has left the vehicle.

Wheelchair Lift

If a rider needs a wheelchair lift to board a vehicle, the driver will assist the individual. All wheelchair passengers are required to board the vehicle lift facing outward for safety reasons. Riders are also allowed to board while standing on the lift, if requested.

The City of Santa Clarita Transit fleet is designed to accommodate "standard" wheelchairs, scooters and other mobility devices. These devices are defined as not to exceed 48" in length, 30" in width and 600 pounds in total weight. Mobility devices larger than these standards may be denied service.

Securement on Board

City of Santa Clarita Transit will make all attempts to secure standard wheelchairs and scooters. However, if a wheelchair or scooter exceeds the normal size, the driver may ask the rider to transfer to a seat, as it may be difficult to safely secure the passenger within the mobility device. The rider will not be required to transfer out of his or her mobility aid, but it is strongly recommended.

Santa Clarita Transit requires that all riders use seat belts. Drivers may assist riders with their seat belts, if requested. Drivers will also secure the tie-downs for wheelchair passengers. If a rider is traveling with a child who is six years of age or younger, and weighs 60 pounds or less, the rider must bring a car safety seat for that child. City of Santa Clarita Transit does not provide safety seats for children.

Personal Care Attendants

A personal care attendant is a qualified person who is providing true personal care assistance to an eligible rider. At the time of certification, it will be determined if a rider is eligible for a personal care attendant. Personal care attendants do not need to be certified to ride, as long as they are traveling with an eligible rider. All attendants must be at least 16 years of age and in good physical condition. Care attendants ride free.

If any individual is in need of door-to-door service, then a personal care attendant will be required. It is the responsibility of the individual user to notify City of Santa Clarita Transit when scheduling the trip, that an attendant will accompany the rider.

Companions

Eligible riders may travel with companions, subject to space availability. Companions will be charged the same cash fare. Please be sure to notify the Customer Service Agent that an additional passenger will be traveling with you during your trip.

Transporting Children

Adult attendants traveling with eligible disabled child riders are considered personal care attendants and are allowed to ride free. All eligible riders five years of age or younger must have an adult attendant. Please be sure to inform the customer service agent when scheduling a trip that the child rider will be traveling with an attendant.

Children age five or under ride free while traveling with an eligible rider. City of Santa Clarita Transit requires all children six years or under, and weighing less than 60 pounds to ride in a child safety seat. Adult attendants or adult riders will need to provide safety seats and secure the safety seat, as City of Santa Clarita Transit does not provide such safety equipment.

Service Animals

Riders may travel with a service animal, defined as a guide dog, signal dog, or other animals trained to work or perform tasks for persons with disabilities. Please inform the Customer Service Agent when scheduling a trip if the rider plans to travel with a service animal.

Animals other than service animals may travel on City of Santa Clarita Transit only if the animal is in a properly secured cage.

The rider or rider's companion must be able to carry the cage or container on board the vehicle without hindering the safety of the rider and/or other passengers. For safety reasons, drivers are not permitted to carry cages or containers.

Packages

Riders may bring up to three grocery bags or similarly-sized packages on board the vehicle. Drivers may help a rider carry three packages on and off the vehicle to the sidewalk or waiting area. The driver cannot carry any packages to the door. Packages should weigh no more than 20 pounds each.

Rider Etiquette

- Please be courteous to people on board.
- Avoid using the seat next to you as storage for your belongings when other passengers need a seat.
- No eating, drinking or smoking on board.
- Abuse, threats or obscene language/ actions will not be tolerated.

No operating or tampering with any equipment while on board the vehicle. This rule includes operating a hydraulic lift and attempting to remove wheelchair "tie-downs."

Riders who engage in physical abuse or cause physical injury to another rider or driver may be subject to immediate and permanent suspension and possible criminal prosecution.

Passengers who violate rider etiquette may face the following:

- One violation will result in a verbal warning.
- Two violations will result in a written warning.
- Three or more violations will result in suspension of service for a minimum of 30 days.

There is an appeals process that allows riders the opportunity to appeal warnings or suspensions for violations of the Rules of Conduct. Appeals must be made in writing within 30 days.

Cancellations

If you need to cancel a scheduled ride, please call (661) 295-6398 at least two hours in advance of your ready time. Passengers who consistently fail to cancel reserved trips may face penalties, such as restricted use of service.

No-Show Policy

City of Santa Clarita Transit depends on efficient scheduling to accommodate as many customers as possible. Therefore, it is important that once a rider has scheduled a trip, the trip be used or canceled within two hours of scheduled pick-up time. Failing to appear for a scheduled trip, or canceling a trip without proper notice is considered a "no-show." No-Shows are defined as follows:

- When a rider cancels a trip less than two hours before the scheduled pick-up time.
- When a rider cancels a trip at the time the driver arrives at the pick-up site.
- When a rider does not show for a scheduled ride within five minutes after the driver has arrived at the pick-up location.

Any passenger who "no-shows" for a ride will automatically have his or her return ride canceled for that day. Repeated no-shows will be documented and will affect a rider's ability to use City of Santa Clarita Transit on a regular basis.

Riders who accumulate six no-shows in any 60 day period are subject to suspension of their riding privileges.

- First suspension: Loss of Dial-A-Ride privileges for 10 days.
- Second suspension: Loss of Dial-A-Ride privileges for 30 days.
- Third suspension: Loss of Dial-A-Ride privileges for 60 days.
- Fourth and subsequent suspensions: Loss of Dial-A-Ride privileges for 90 days.

City of Santa Clarita Transit has an appeal process that allows riders the opportunity to appeal a no-show decision. Appeals must be made in writing within 30 days.

Lost and Found Policy

Any article left behind on a vehicle will be forwarded to Customer Service. To claim a lost article, please call the Customer Service Center at (661) 295-6328. Articles are held for 30 days then donated to a charitable organization.

(661) 294-9327 21

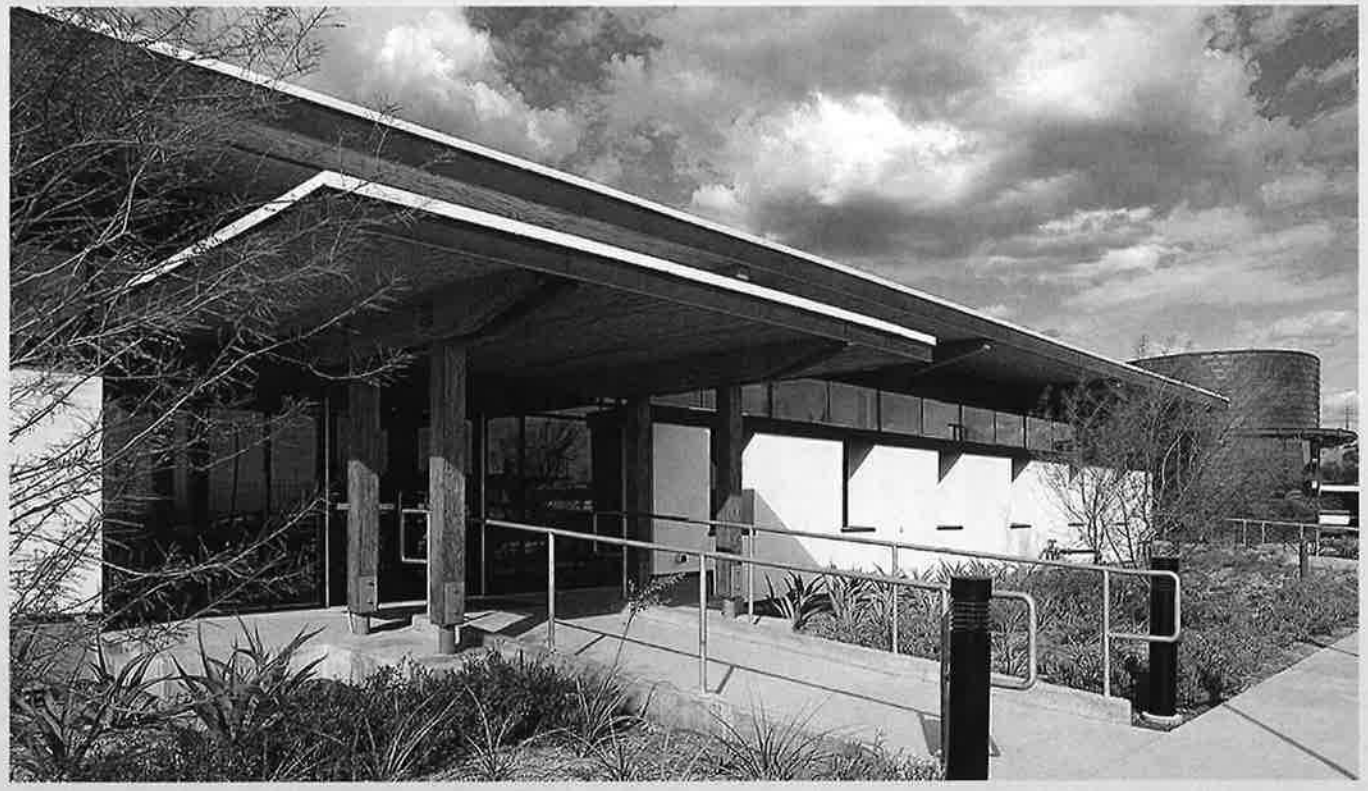
Comments and Concerns

As a valued customer, the City of Santa Clarita Transit welcomes your feedback. If you wish to express your comments or concerns, please contact us:

- Call (661) 294-1BUS (1287)
- Submit an online request at SantaClaritaTransit.com
- Visit us at the Transit Maintenance Facility (TMF): 28250 Constellation Rd. Santa Clarita, CA 91355

Please include the following information with your feedback:

- Date and time of the incident
- Vehicle number or name of the driver involved
- Name(s) of any other person involved (customer service agent, passenger, etc.), if known



Notes:

(661) 294-9327 23

Notes:

Appendix C SANTA CLARITA BIKEWAYS

DRAFT

City of SANTA CLARITA

Trails and Parks

BEYOND SANTA CLARITA

Trail and recreation areas surrounding Santa Clarita are managed by Los Angeles County, Santa Monica Mountains Conservancy, and the US Forest Service. Information for these areas can be found via links to their agency pages at **www.LAMountains.com**

0 1 2 3 4 US Survey Miles

0 3 6 Kilometers

N NW NE W E SW SE S

LEGEND *Revised April 2016*

- Existing Class I Bike Path
- Proposed Class I Bike Path

  Provides a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross-flow traffic minimized. Fencing encourages use of designated access points.
- Existing Class II Bike Lane
- Proposed Class II Bike Lane

  Provides a striped lane for one-way bike travel on a street or highway. Bike lanes are marked with signs and pavement striping.
- Existing Class III Bike Route
- Proposed Class III Bike Route

  Provides for shared use with pedestrian or motor vehicle traffic. Bike routes are marked with signs.
- Existing Multi-Use Trail
- Proposed Multi-Use Trail

  Located primarily in rural areas, these trails are unpaved and are available for equestrian, hiking, and mountain bike use. Trails are marked with lodgepole fencing.

- Trailhead
- Parks
- Open Space
- Santa Clara River Open Space
- Santa Clara River
- Wilderness Area
- Places of Interest
- Golf Course
- City Boundary
- Railroad
- Paseo
- Milage Between Markers
- Metrolink Station
- Transfer Station
- Library
- Roads

For more information on trails and paseos, visit www.santa-clarita.com/Trails

For more information on trails in Open Space, visit www.hikesantaclarita.com

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Memo

To:	Steve Kim Sand Canyon Country Club	From:	Sandhya Perumalla Stantec
File:	2073014970	Date:	September 5, 2018

Reference: **Parking Analysis for Sand Canyon Resort in the City of Santa Clarita.**

The purpose of this memo is to provide a parking analysis to determine if adequate parking will be provided by the proposed Project, Sand Canyon Country Club. The Project is planning to develop a resort in the City of Santa Clarita. It includes 392 guest rooms consisting of a hotel and separate villas. It also includes amenities like miniature golf, swimming pools, tennis, pickle ball courts, a three-mile long multi-purpose trail, upscale restaurants, spa and sauna, beauty salons, gym and kids club, ball rooms and meeting rooms. It has an existing 27-hole golf course. The Project is expected to open in the year 2023.

The Project is located in the southeast portion of the City of Santa Clarita. The Project site is located north of Robinson Ranch Road, east of Sand Canyon Road, west of the Sand Canyon Country Club clubhouse, and south of Oak Springs Canyon Road. See Figure 1 for the Project Site. Access to the project site will be via multiple proposed new intersections with Robinson Ranch Road. See Figure 2 for the site plan. Stantec reviewed the project's proposed site plan to determine if adequate parking will be provided based on the project use and the City's parking code.

As can be seen in Table 1, based on the ITE Parking Generation fourth edition, the average peak period parking demand is 1.29 vehicles for each occupied room and 8.68 vehicles per hole of golf course. Since the majority of golfers will be guests of the hotel, a conservative estimate of 33 percent is used to account for golfers not arriving by vehicle. This is applied by reducing the parking demand for the golf course by one-third. To be conservative, an assumption is made that all the rooms are occupied. Therefore, a total of 663 parking spaces are required to accommodate the proposed 392 rooms and 27 golf course holes.

Table 1 Parking Demand

Category	**Units**		**Rate**	**Parking Demand**
Resort Hotel incl. Villas (330)	392	Rooms	1.29	506
Golf Course (430)	27	Holes	8.68	234
Less golfers staying at resort (33%)				*-77*
Total Parking Demand				**663**
Parking Rate Source: Institute of Transportation Engineers (ITE), Parking Generation 4th Edition with Land Code in parentheses				

As shown in Table 2, the Sand Canyon Country Club has a total of 319 existing parking spaces shared between two parking areas. The resort area proposes to provide 375 parking spaces. Therefore, the total vehicular parking spaces provided by the project is 694 parking spaces which satisfies the parking demand based on parking generation rate discussed above. The proposed project has an existing golf driving range with two parking areas as shown in Figure 3 and the proposed parking for the resort area as shown in Figure 4.

Reference: **Parking Analysis for Sand Canyon Resort in the City of Santa Clarita.**

Table 2 Parking Supply

Area	Spaces
Golf Course Parking Area 1 - Existing	238
Golf Course Parking Area 2 - Existing	81*
Total - Existing	**319**
Resort Parking Area - Future/Proposed	375
Total	**694**
* Currently unpaved and unmarked. It will be rebuilt with the proposed parking.	

Per the City of Santa Clarita's parking code, the project is required to provide one parking space for each occupied room, one parking space per 100 square feet of banquet facility, and 10 parking spaces per hole. Since the majority of the banquet facility guests will be guests of the hotel, a conservative reduction factor of 50 percent is used to account for them, and as mentioned above, since the majority of golfers will be guests of the hotel, a conservative reduction factor of 33 percent is used to account for them. Therefore, the parking demand is reduced by half for banquet facility and reduced by one-third for golf course to account for guests staying at the resort hotel. As shown in Table 3, the total parking requirement based on the City code is 690 parking spaces.

Table 3 Santa Clarita Parking Code Requirements

Category	Units		Rate	Parking Demand
Hotel (incl. Villas)	392	Rooms	1.00	392
Banquet Facility	23,520	Sq. Ft.	1/100	235
Less banquet guests staying at resort (50% of Banquet Facility)				*-118*
Golf Course	27	Holes	10.00	270
Less golfers staying at resort (33% of Golf Course)				*-89*
Total Parking Requirement				**690**

Table 4 below provides a comparison of the required parking spaces based on the ITE parking generation's parking demand and City's parking code which shows that the proposed parking supply of 694 parking spaces exceeds both requirements. It also shows a surplus of 31 spaces (5%) based on parking demand and a surplus of 4 spaces (1%) based on the City's parking code. Therefore, the total of 694 parking spaces proposed to be provided by the project meets the Santa Clarita parking code requirement.

Table 4 Parking Comparison

	Provided	Required	Surplus	Percent Surplus
Based on Demand	694	663	31	5%
Based on City Code	694	690	4	1%

Reference: **Parking Analysis for Sand Canyon Resort in the City of Santa Clarita.**

In conclusion, the proposed parking spaces provided by the Sand Canyon Country Club exceeds the requirements based on the parking demand and the City's parking code and is considered adequate for the project's use. Therefore, fewer spaces could be provided without negatively affecting parking conditions.

Thank you for the opportunity to work with you and your team on this important Parking Analysis effort for Sand Canyon Resort project. Please feel free to contact me if you have any questions or if would like to discuss on the above material.

STANTEC CONSULTING SERVICES INC.

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Senior Transportation Planner
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Fax: (949) 923-6121
Sandhya.perumalla@stantec.com

Attachment: Project Site
Site Plan
Existing Parking
Proposed Parking

c: Daryl Zerfass, Stantec

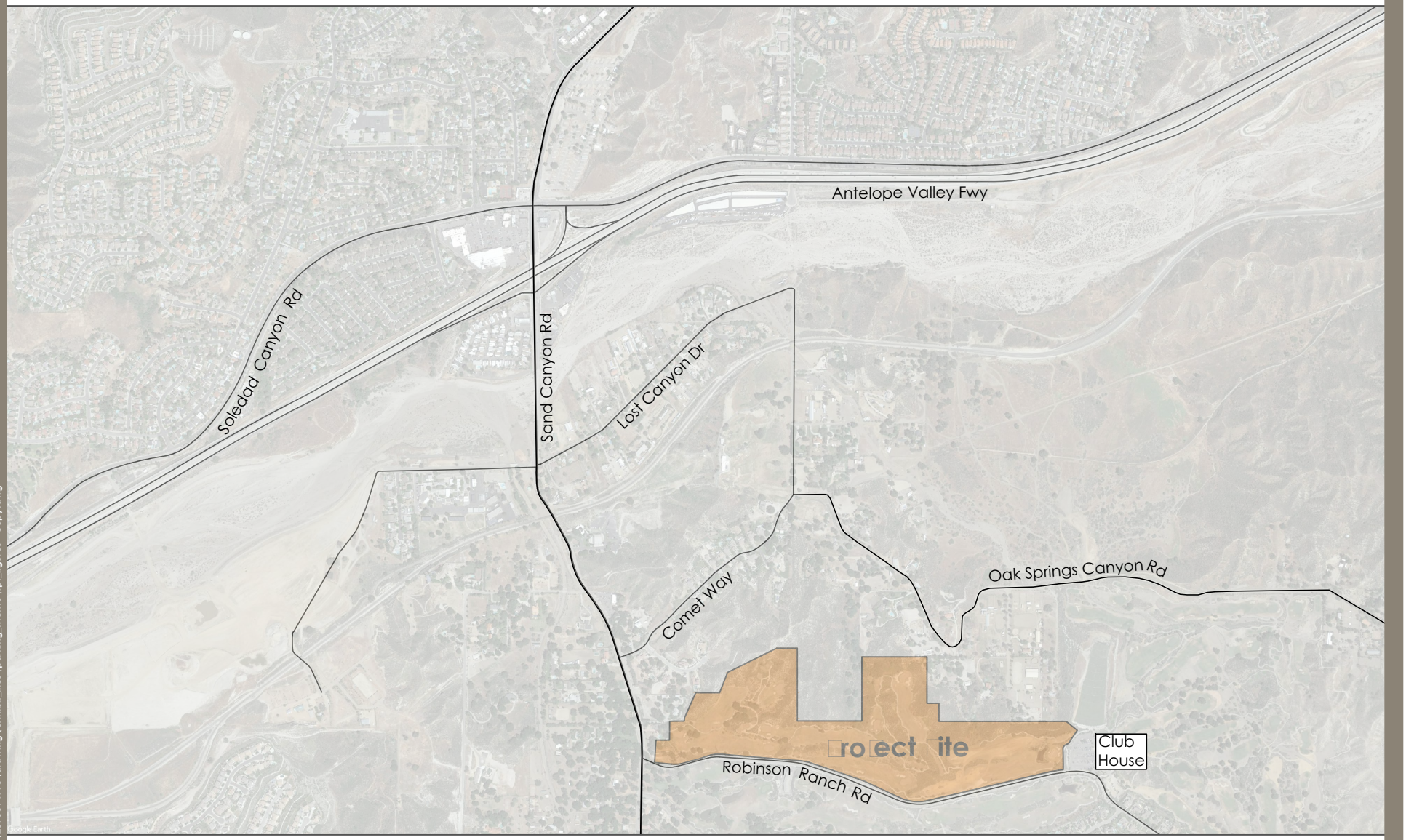

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Figure 1

Project Site

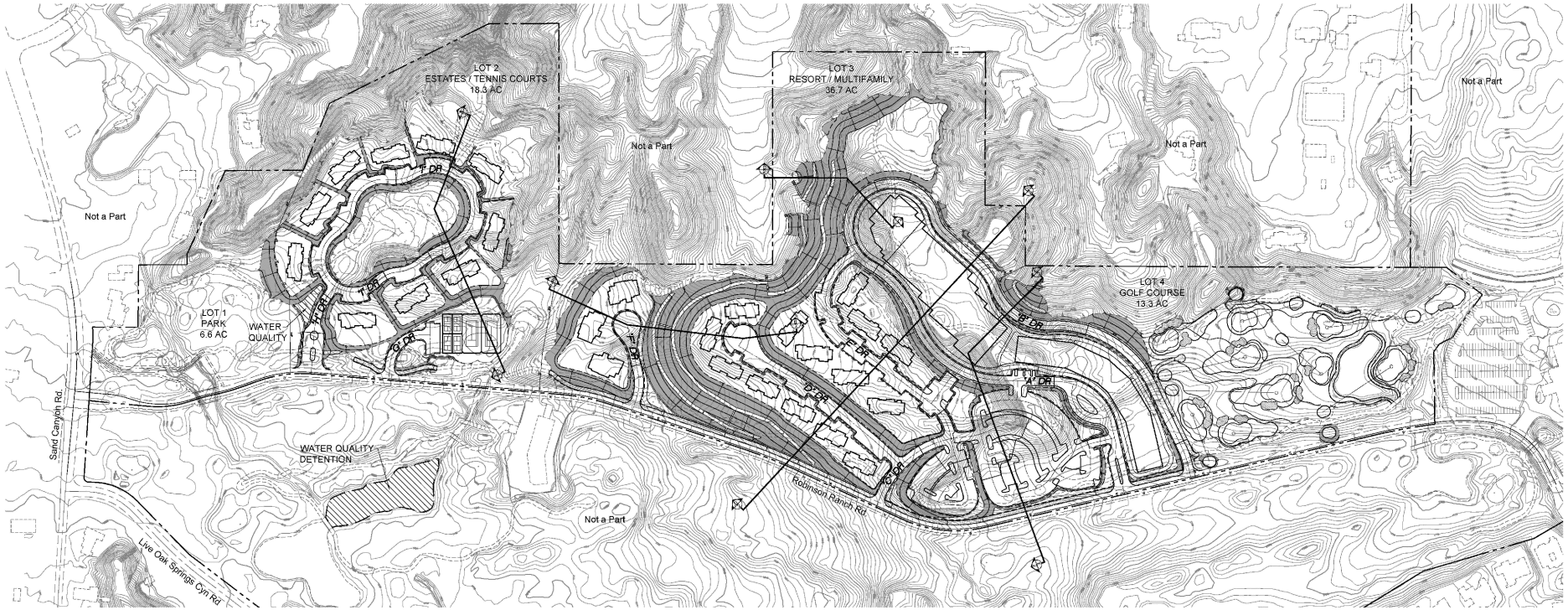

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Figure 2

Site Plan

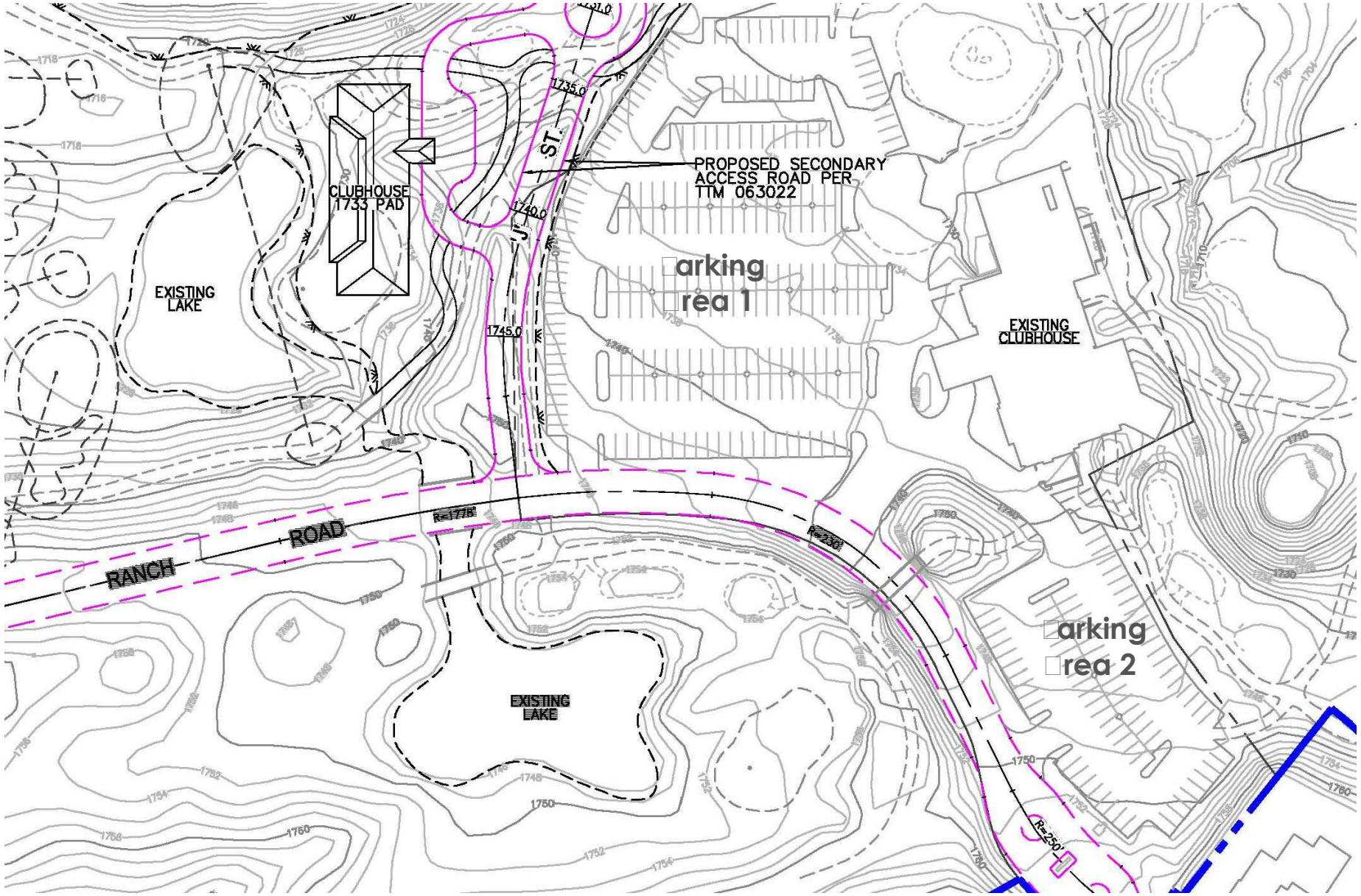

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Figure 3

isting o Parking

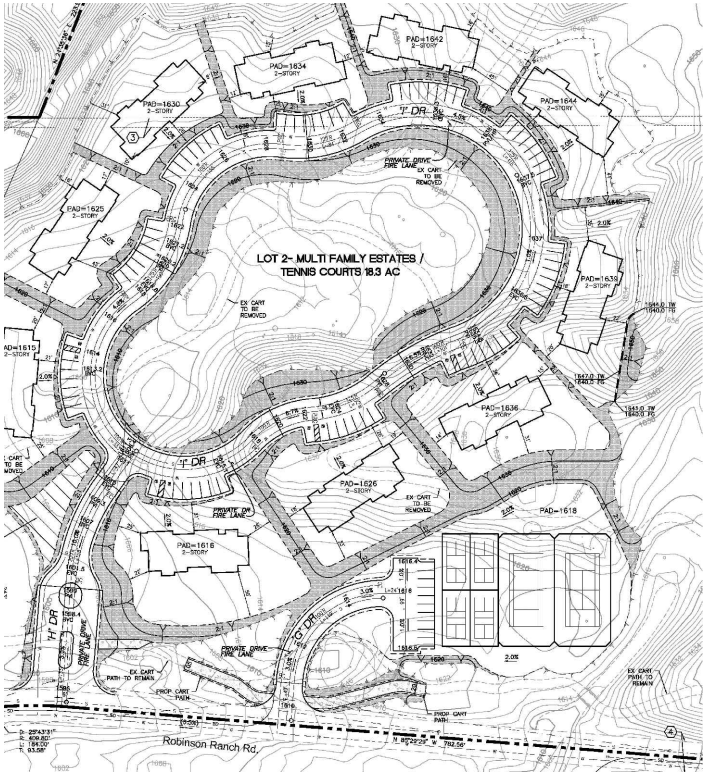

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Figure 4

Proposed Resort Parking