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Prepared for
Irvine Ranch Water District

Irvine Ranch Water District Syphon Reservoir Improvement Project

Transportation Impact Analysis

October 2020

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FEHR PEERS

Table of Contents

1. Executive Summary 1
Findings 1
2. Introduction 2
Study Purpose 2
Study Area Boundary 3
Analysis Methods 6
Analysis Scenarios 7
Report Organization 9
3. Existing Conditions 10
Roadway System 10
Existing Pedestrian and Bicycle Facilities 11
Existing Transit Service 12
Existing Traffic Counts 12
Existing Operations Analysis 12
4. Performance Criteria 16
5. Project Characteristics 19
Trip Generation 19
6. Existing Plus Project Conditions 28
Traffic Volumes 28
Intersection Improvements 28
Intersection Operations 28
Intersection Deficiencies 28
Recommended Improvements 28
7. Short-Term Interim Year Conditions 34
Future Traffic Forecasts 34
Intersection Improvements 34
Intersection Operations 34
8. Short-Term Interim Year Plus Project Conditions 39
Future Traffic Forecasts 39
Intersection Improvements 39
Intersection Operations 39
Intersection Deficiencies 40
Recommended Improvements 40

9. Special Issues 51
Site Access Analysis 51
CEQA VMT Impact Analysis 53
Pedestrian Network Impact Analysis 53
Bicycle Network Impact Analysis 54
Transit System 56
CMP Traffic Impact Analysis 58
10. Required Improvements 59
11. Conclusions 60

Appendices

Appendix A: Scope of Work for Irvine Ranch Water District (IRWD) Syphon Reservoir Construction Transportation Impact Analysis
Appendix B: Traffic Counts
Appendix C: LOS Calculation Worksheets

List of Figures

Figure 1: Project Location 4
Figure 2: Study Intersections 5
Figure 3: Bicycle Facilities 13
Figure 4: Existing Peak Hour Traffic Volumes, Lane Configurations and Traffic Control 14
Figure 5: Trip Distribution and Assignment 23
Figure 6a: Project Only (Route 1A) Volume 24
Figure 6b: Project Only (Route 1B) Volume 25
Figure 6c: Project Only (Route 2A) Volume 26
Figure 6d: Project Only (Route 2B) Volume 27
Figure 7a: Existing Plus Project (Route 1A) Peak Hour Traffic Volumes, Lane Configurations and Traffic Control 29
Figure 7b: Existing Plus Project (Route 1B) Peak Hour Traffic Volumes, Lane Configurations and Traffic Control 30
Figure 7c: Existing Plus Project (Route 2A) Peak Hour Traffic Volumes, Lane Configurations and Traffic Control 31
Figure 7d: Existing Plus Project (Route 2B) Peak Hour Traffic Volumes, Lane Configurations and Traffic Control 32
Figure 8: Short-Term Interim Year Approved Hour Traffic Volumes, Lane Configurations and Traffic Control 35
Figure 9: Short-Term Interim Year Pending Hour Traffic Volumes, Lane Configurations and Traffic Control. 36
Figure 10a: Short-Term Interim Year Approved Plus Project (Route 1A) Peak Hour Traffic Volumes, Lane Configurations and Traffic Control 41
Figure 10b: Short-Term Interim Year Approved Plus Project (Route 1B) Peak Hour Traffic Volumes, Lane Configurations and Traffic Control 42
Figure 10c: Short-Term Interim Year Approved Plus Project (Route 2A) Peak Hour Traffic Volumes, Lane Configurations and Traffic Control 43
Figure 10d: Short-Term Interim Year Approved Plus Project (Route 2B) Peak Hour Traffic Volumes, Lane Configurations and Traffic Control 44
Figure 11a: Short-Term Interim Year Pending Plus Project (Route 1A) Peak Hour Traffic Volumes, Lane Configurations and Traffic Control 45
Figure 11b: Short-Term Interim Year Pending Plus Project (Route 1B) Peak Hour Traffic Volumes, Lane Configurations and Traffic Control 46
Figure 11c: Short-Term Interim Year Pending Plus Project (Route 2A) Peak Hour Traffic Volumes, Lane Configurations and Traffic Control 47
Figure 11d: Short-Term Interim Year Pending Plus Project (Route 2B) Peak Hour Traffic Volumes, Lane Configurations and Traffic Control 48

List of Tables

Table 1: Intersection Level of Service Criteria 8
Table 2: Existing Intersection Level of Service 15
Table 3: Construction Trip Generation 22
Table 4: Existing Plus Project (All Route Options) Intersection Level of Service 33
Table 5: Short-Term Interim Year Approved Intersection Level of Service 37
Table 6: Short-Term Interim Year Pending Intersection Level of Service 38
Table 7: Short-Term Interim Year Approved Plus Project (All Routes) Intersection Level of Service 49
Table 8: Short-Term Interim Year Pending Plus Project (All Routes) Intersection Level of Service 50

1. Executive Summary

Fehr & Peers has completed a Transportation Impact Analysis (TIA) for construction of the Irvine Ranch Water District (IRWD) Syphon Reservoir Improvement Project (Project) located near the intersection of Sand Canyon Avenue and Portola Parkway in Irvine, California. The Project proposes to increase the capacity of the existing Syphon Reservoir and replace the existing engineered dam with a new and larger engineered dam. As part of the Project, a private 2-lane roadway connection from the northern side of the Sand Canyon Avenue and Portola Parkway intersection to the Project site is proposed for construction vehicle access. This proposal will require reconstruction of the Sand Canyon Avenue and Portola Parkway intersection to accommodate the new northern leg and the associated traffic signals, lane striping, and signage changes. Pedestrian and bicycle infrastructure at the intersection will be reconstructed to maintain access like the existing condition while following the City of Irvine requirements.

As part of the TIA, consistent with California Environmental Quality Act (CEQA) requirements, a Vehicle Miles Traveled (VMT) analysis was conducted for the Project. Intersection Level of Service (LOS) was also conducted to determine intersection operations with and without the Project. The study intersections selected represent the intersections where construction traffic is proposed to travel through. Four routes are proposed for the Project.

Findings

On a peak construction activity day, approximately 232 daily trips are estimated, of which 36 trips (27 inbound/9 outbound) would occur during the AM peak hour and 18 trips (0 inbound/18 outbound) would occur during the PM peak hour. For the purpose of the intersection LOS analysis, the trip generation estimates were converted to Passenger Car Equivalent (PCE) trips. PCE reflects the additional effect larger vehicles have on intersection operations based on their larger size. A PCE factor of 1.0 was assumed for worker vehicles and a PCE factor of 3.0 was assumed for all construction trucks, based on the Highway Capacity Manual 6th Edition (HCM) (Transportation Research Board, 2017). As shown in Table 3, on a peak construction activity day, approximately 512 daily PCE trips are estimated, of which 72 PCE trips (45 inbound/27 outbound) would occur during the AM peak hour and 18 PCE trips (0 inbound/18 outbound) would occur during the PM peak hour.

The City of Irvine's *CEQA VMT Impact Analysis Guidelines* identify projects generating fewer than 250 weekday daily trips as requiring no further VMT impact analysis. All phases of construction have a daily trip generation less than 250 trips. Therefore, it can be determined that all the construction phases do not meet the daily trip screening threshold and require no further VMT impact analysis using the *CEQA VMT Impact Analysis Guidelines*.

The LOS analyses resulted in no intersection deficiencies under any of the "plus Project" scenarios. Therefore, no intersection improvements would be required.

2. Introduction

This report presents the analysis and findings of a Transportation Impact Analysis (TIA) prepared for construction of the Irvine Ranch Water District (IRWD) Syphon Reservoir Improvement Project (Project) located near the intersection of Sand Canyon Avenue and Portola Parkway in Irvine, California. This chapter discusses the TIA purpose, analysis locations and methods, scenarios, and report organization.

Study Purpose

The purpose of this study is to evaluate the temporary transportation impacts associated with the Syphon Reservoir Improvement Project. The Project proposes to increase the capacity of the existing Syphon Reservoir and replace the existing engineered dam with a new and larger engineered dam. The Project would allow the storage of additional recycled water produced at the Michelson Water Recycling Plant during periods of low demand (winter months) for use during periods of high demand (summer months). The Project would expand the reservoir's storage capacity from the current 500 Acre-Feet (AF) to approximately 5,000 AF and would help IRWD become more self-sufficient by reducing its dependence on costly and less-reliable imported water from both Northern California and the Colorado River. The Project would help IRWD to store more drought-proof recycled water during summer months and support the increased use of recycled water for public landscaping, agricultural, business, and industrial uses. Every gallon of recycled water IRWD uses for non-drinking water purposes saves a gallon of drinking water, helping the region's existing and planned future development to better withstand future water shortages. By reducing IRWD's dependence on costly imported water, the Project would allow IRWD to replace an expensive source of water for one that is less expensive and a drought-resilient supply, which increases IRWD's water supply reliability. The proposed Project is assumed to be operational by end of 2026.

The Project would be implemented within the IRWD service area at the location of the existing Syphon Reservoir, northeast of Portola Parkway between Bee Canyon Access Road and SR-133 in the County of Orange. The Crean Lutheran High School Athletic Complex is located between Portola Parkway and the toe of the existing dam. Residential neighborhoods are located on the southwest side of Portola Parkway. Figure 1 identifies the location of the Project within Irvine.

As part of the Project, a private 2-lane roadway connection from the northern side of the Sand Canyon Avenue and Portola Parkway intersection to the Project site is proposed for construction vehicle access during Project construction and maintenance/operations access during Project operation. This proposal will require reconstruction of the Sand Canyon Avenue and Portola Parkway intersection to accommodate the new northern leg and the associated traffic signals, lane striping, and signage changes. Pedestrian and bicycle infrastructure at the intersection would be reconstructed to maintain access like the existing condition while following the City of Irvine requirements. This improvement assumes the northbound

approach at Sand Canyon Avenue and Portola Parkway would be modified from two left-turn lanes and two right-turn lanes to one left-turn lane, one shared through/left-turn lane, and two right-turn lanes. The southbound approach would be constructed with one shared left/through/right-turn lane. Split phasing (a traffic signal phasing that gives a green signal for all vehicle movements of one direction followed by a green signal for all movements of the opposite direction) would be incorporated for the northbound and new southbound approaches during construction and typical operations. During construction of the Project, this private roadway would be used by construction trips for ingress and egress of the construction site. Upon completion of the Project, this private roadway would be used by IRWD staff conducting maintenance and inspections as part of typical operations, similar to existing conditions. Trips by IRWD staff to the reservoir are not anticipated to increase as compared to the existing condition and are not considered to have a significant effect on the future intersection operations.

Study Area Boundary

The scope of the traffic analysis, methodology assumptions, and selection of study intersections was developed in consultation with City of Irvine staff and documented in the Scope of Work for Irvine Ranch Water District (IRWD) Syphon Reservoir Construction Transportation Impact Analysis dated June 29, 2020. The approved scope of work is included in Appendix A.

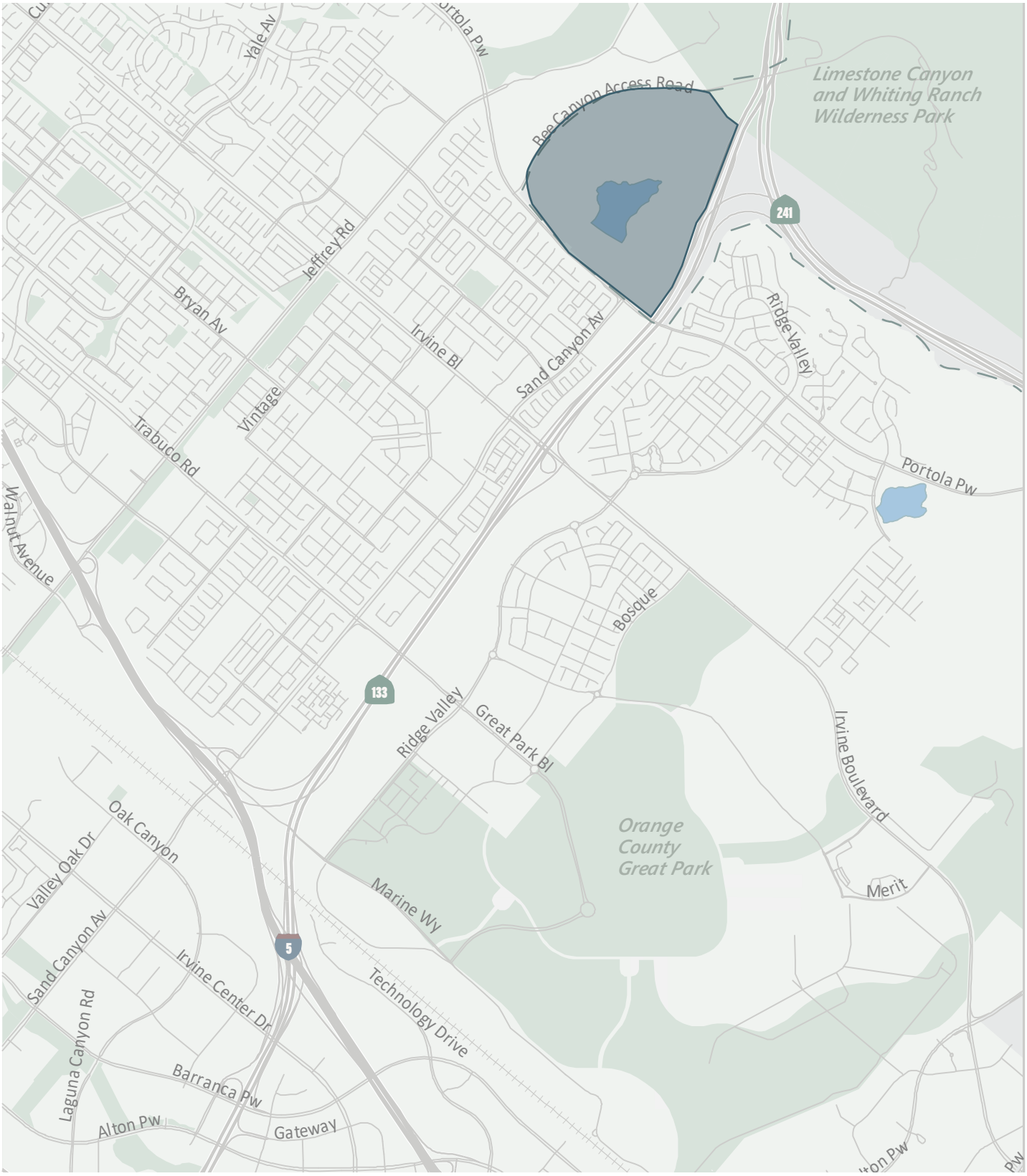
The study intersections selected represent the intersections where construction traffic is proposed to travel through. Four routes are proposed for the Project.

- Route 1A – I-5 (from the north), south on Sand Canyon Avenue for trucks traveling inbound and southbound on Sand Canyon Avenue to I-5 (to the north) for trucks traveling outbound.
- Route 1B – I-5 (from the south), south on Sand Canyon Avenue for trucks traveling inbound and southbound on Sand Canyon Avenue to I-5 (to the south) for trucks traveling outbound.
- Route 2A – SR-133 (from the north), west on Irvine Boulevard, and north on Sand Canyon Avenue for trucks traveling inbound and southbound on Sand Canyon Avenue and east on Irvine Boulevard to SR-133 (to the north) for trucks traveling outbound.
- Route 2B – SR-133 (from the south), west on Irvine Boulevard, and north on Sand Canyon Avenue for trucks traveling inbound and southbound on Sand Canyon Avenue and east on Irvine Boulevard to SR-133 (to the south) for trucks traveling outbound.

As presented in Figure 2, the following intersections have been selected for study:

1. Sand Canyon Avenue & Portola Parkway
2. Sand Canyon Avenue & Irvine Boulevard
3. Sand Canyon Avenue & Trabuco Road
4. Sand Canyon Avenue & I-5 Northbound Ramps
5. Sand Canyon Avenue & Marine Way
6. Sand Canyon Avenue & I-5 Southbound Ramps
7. SR-133 Southbound Ramps & Irvine Boulevard
8. SR-133 Northbound Off-Ramp & Irvine Boulevard

Freeway links were not included in this study as less than 50 peak hour trips would be added to the freeway system.



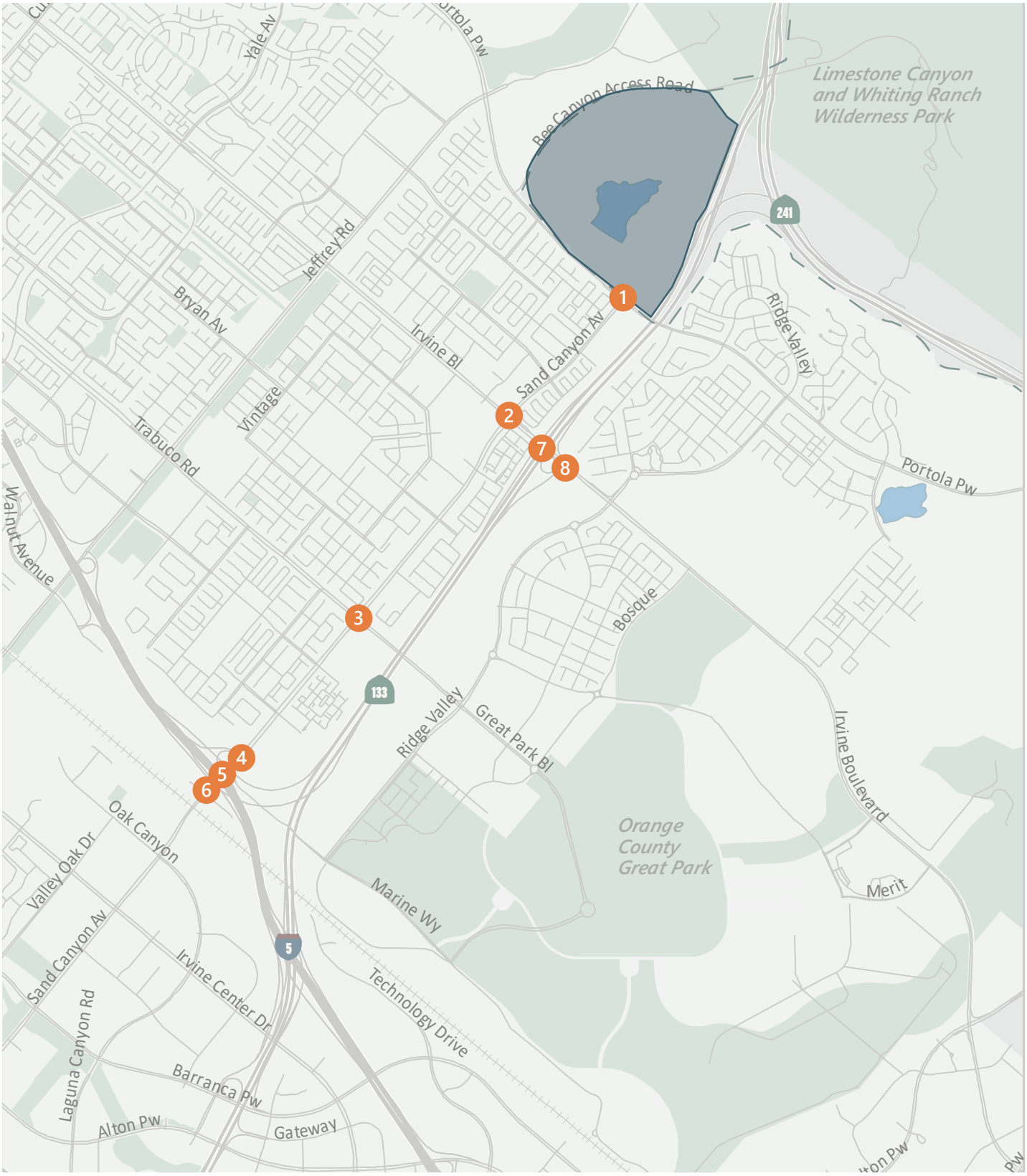
Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Project Site Syphon Reservoir

Figure 1

Project Location



Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

N

Legend

- Study Intersections
- Project Site Syphon Reservoir

Figure 2

Study Intersections

Analysis Methods

The *City of Irvine Traffic Study Guidelines* (City of Irvine, April 2020) were used to identify the analysis methodologies for the Vehicle Miles Traveled (VMT) and intersection Level of Service (LOS) analyses. Many jurisdictions in Southern California have regarded construction-related traffic as causing adverse but not significant impacts because, while sometimes inconvenient, construction-related traffic effects are temporary.

Vehicle Miles Traveled Analysis

On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law and started a process that has fundamentally changed transportation impact analyses conducted as part of California Environmental Quality Act (CEQA) compliance. The Governor's Office of Planning and Research (OPR) was charged with developing new guidelines for evaluating transportation impacts under CEQA using methods that no longer focus on measuring automobile delay and LOS.

OPR issued proposed updates to the CEQA guidelines in support of these goals in November 2017 and a supporting technical advisory in December 2018. The updates establish VMT as the metric for evaluating a project's environmental impacts on the transportation system. Lead agencies, including the City of Irvine, had until July 1, 2020 to implement these new requirements. On June 23, 2020, the City of Irvine adopted the *CEQA VMT Impact Analysis Guidelines* (City of Irvine, April 2020). These guidelines are included as an exhibit in the *City of Irvine Traffic Study Guidelines*.

Neither OPR nor the City of Irvine have provided guidance regarding VMT thresholds for construction related traffic. Nonetheless and per the approved scope of work, a VMT impact analysis was conducted for the Project that follows the adopted *CEQA VMT Impact Analysis Guidelines*.

Intersection Level of Service Analysis

For the signalized intersections within the study area, the transportation analysis was conducted in accordance with *City of Irvine Traffic Study Guidelines* requirements using the Intersection Capacity Utilization (ICU) methodology.

The ICU methodology is considered a standard approach for evaluating signalized intersection operations in Irvine. The ICU method of intersection capacity analysis determines the intersection volume-to-capacity (V/C) ratio and corresponding LOS for the turning movements and intersection characteristics at signalized intersections. "Capacity" represents the maximum volume of vehicles in the critical lanes that have a reasonable expectation of passing through an intersection in one hour under prevailing roadway and traffic

conditions. The ICU method calculates the V/C ratio for each critical movement by dividing volume by capacity. The V/C ratios for each critical movement are summed with an added lost time due to vehicle start-ups and stops to determine the total intersection V/C ratio. Traffic conditions for signalized intersections were evaluated using the Vistro Version 7.0 software.

After the quantitative V/C and delay estimates were completed, the methodologies assign a qualitative letter grade that represents the operations of the intersection. These grades range from level of service (LOS) A (minimal delay) to LOS F (excessive congestion). LOS E represents at-capacity operations. Descriptions of the LOS letter grades for intersections are provided in Table 1.

Analysis Scenarios

The proposed Project is assumed to be operational by end of 2026. The study was directed at analyzing the potential Project generated traffic effect on the local street system under both existing and future year traffic conditions. The following traffic scenarios were developed and analyzed as part of this study:

- Existing Conditions – Due to emergence of COVID-19 in southern California and the decision of local schools to end on-campus classes for the 2019-2020 academic year, existing intersection counts could not be collected in the study area. However, the City of Irvine provided intersection counts from 2018 that were used to estimate 2020 intersection volumes. Per the approved scope of work with the City of Irvine, a growth factor of 2% per year was applied to previously collected counts to develop 2020 intersection volumes for the AM and PM peak hours.
- Existing plus Project Conditions – the proposed construction trip generation (in passenger car equivalence) and route assignment estimates was added to the Existing Conditions. Buildout of a private roadway connection from the northern side of the Sand Canyon Avenue and Portola Parkway intersection to the Project site was included.
- Short-Term Interim Year Approved Conditions – the future (Short-Term Interim Year Approved) conditions were developed using study area intersection volume growth rates on a per year basis. The per year growth rates were developed based on outputs from the latest versions of the Existing and Short-Term Interim Year Approved Irvine Traffic Analysis Model (ITAM) provided by the City of Irvine. The growth rate was applied to the Existing Conditions intersection volumes to reflect Existing Conditions growth to the Short-Term Interim Year Approved condition of ITAM.
- Short-Term Interim Year Approved plus Project Conditions – the proposed construction trip generation (in passenger car equivalence) and route assignment estimates was added to the Short-Term Interim Year Approved Conditions. Buildout of a private roadway connection from the northern side of the Sand Canyon Avenue and Portola Parkway intersection to the Project site was included.

TABLE 1
INTERSECTION LEVEL OF SERVICE CRITERIA

Level of Service	Description	ICU Volume to Capacity (V/C) Ratio
A	Signalized: Operations with very low delay occurring with favorable progression and/or short cycle length. Unsignalized: Little or no delay.	0.000 - 0.600
B	Signalized: Operations with low delay occurring with good progression and/or short cycle lengths. Unsignalized: Short traffic delays.	0.601 - 0.700
C	Signalized: Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear. Unsignalized: Average traffic delays.	0.701 - 0.800
D	Signalized: Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable. Unsignalized: Long traffic delays.	0.801 - 0.900
E	Signalized: Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. Unsignalized: Very long traffic delays.	0.901 - 1.000
F	Signalized: Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths. Unsignalized: Extreme traffic delays with intersection capacity exceeded	> 1.000

Sources: *Transportation Research Circular No. 212, Interim Materials on Highway Capacity,* Transportation Research Board, 1980.

- Short-Term Interim Year Pending Conditions – the future (Short-Term Interim Year Pending) conditions were developed using study area intersection volume growth rates on a per year basis. The per year growth rates were developed based on outputs from the latest versions of the Existing and Short-Term Interim Year Pending ITAM provided by the City of Irvine. The growth rate was applied to the Existing Conditions intersection volumes to reflect Existing Conditions growth to the Short-Term Interim Year Pending condition of ITAM.
- Short-Term Interim Year Pending plus Project Conditions – the proposed construction trip generation (in passenger car equivalence) and route assignment estimates was added to the Short-Term Interim Year Pending Conditions. Buildout of a private roadway connection from the northern side of the Sand Canyon Avenue and Portola Parkway intersection to the Project site was included.

Report Organization

This report is divided into eight chapters as described below:

- Chapter 1 – Executive summary summarizes the findings of the analysis.
- Chapter 2 – Introduction discusses the purpose and organization of the report.
- Chapter 3 – Existing Conditions describes the transportation system in the Project vicinity, including the surrounding roadway network, morning and evening peak period intersection turning movement volumes, existing bicycle, pedestrian, and transit facilities, and intersection operations.
- Chapter 4 – Performance criteria identify the thresholds for impacts and when traffic improvements would be required.
- Chapter 5 – Project characteristics identify the trip generation, distribution, and assignment of the Project traffic.
- Chapter 6 – Existing Plus Project Traffic Conditions addresses the Existing Conditions with the Project and discusses Project effect on intersections.
- Chapter 7 – Short-Term Interim Year Conditions addresses the Short-Term Interim Year without the Project.
- Chapter 8 – Short-Term Interim Year Plus Project Conditions addresses the Short-Term Interim Year Plus Project Conditions, with the Project, and discusses Project effect on intersections.
- Chapter 9 – Special Issues address site access analysis and VMT analysis.
- Chapter 10 – Required improvements address the improvements required of the Project.
- Chapter 11 – Conclusion summarizes the findings of the analysis.

3. Existing Conditions

This chapter describes transportation facilities in the study area including the surrounding roadway network, transit, pedestrian, and bicycle facilities. Existing intersection operations are also described.

Roadway System

The following discusses the roadways that would provide access to the site and are most likely to experience direct traffic effects, if any, from the Project (see Figure 1).

State Route 133 (SR-133) is a north-south freeway that runs between Laguna Beach, California, and Irvine. In the study area, SR-133 provides four general purpose travel lanes in both the northbound and southbound directions.

Interstate 5 (I-5) is a north-south freeway that runs between the Mexico border and the Oregon state line. In the study area, I-5 provides five general purpose travel lanes and one high occupancy vehicle lane in both the northbound and southbound directions.

Marine Way is an east-west roadway through Irvine. In the study area, the roadway generally provides one travel lane in each direction with turn pockets at intersections and driveways. The posted speed limit is 45 mph. No on-street parking is permitted on either side of the road.

Trabuco Road/Great Park Boulevard is an east-west roadway through Irvine. In the study area, the roadway generally provides three travel lanes in each direction with a raised median and turn pockets at intersections. The posted speed limit is 50 mph. No on-street parking is permitted on either side of the road.

Irvine Boulevard is an east-west roadway through Irvine that provides access to SR-133. In the study area, the roadway generally provides three travel lanes in each direction with a raised median and turn pockets at intersections. The posted speed limit is 55 mph. No on-street parking is permitted on either side of the road.

Portola Parkway is an east-west roadway through Irvine. In the study area, the roadway generally provides two travel lanes in each direction with a raised median and turn pockets at intersections. The posted speed limit is 55 mph. No on-street parking is permitted on either side of the road.

Sand Canyon Avenue is a north-south roadway through Irvine that provides access to I-5. In the study area, the roadway generally provides four travel lanes in each direction between Trabuco Road/Great Park

Boulevard and I-5, three travel lanes in each direction between Irvine Boulevard and Trabuco Road/Great Park Boulevard, and two travel lanes in each direction between Portola Parkway and Irvine Boulevard. A raised median and turn pockets are generally provided at intersections. The posted speed limit is 50 mph. No on-street parking is permitted on either side of the road.

Existing Pedestrian and Bicycle Facilities

Pedestrian facilities in the study area include sidewalks, crosswalks, and pedestrian signals. All the roadways in the study areas provide sidewalks or paths on both sides of the street. Sidewalks are not provided along SR-133 or I-5. At the signalized intersections in the study areas, crosswalks and pedestrian push-button actuated signals are provided. Figure 3 presents the following bicycle facilities in the study area, per the *California State Bicycle and Pedestrian Plan* (Caltrans, 2017) 3:

- **Bike paths (Class I)** – Bike paths provide a separate right-of-way and are designated for the exclusive use of people riding bicycles and walking with minimal crossflow traffic. Such paths can be well situated along creeks, canals, and rail lines. Class I Bikeways can also offer opportunities not provided by the road system by serving as both recreational areas and/or desirable commuter routes. Bike paths are provided along the following roadway segments.
    - Sand Canyon Avenue from Portola Parkway to I-5
    - Towngate from Hallmark to Crosspointe
    - Portola Parkway from Paragon to SR-133
    - Cypress Village Trail along I-5
- **Bike lanes (Class II)** – Bike lanes provide designated street space for bicyclists, typically adjacent to the outer vehicle travel lanes. Bike lanes include special lane markings, pavement legends, and signage. Bike lanes may be enhanced with painted buffers between vehicle lanes and/or parking, and green paint at conflict zones (such as driveways or intersections). The following roadway segments have Class II bike lanes.
    - Sand Canyon Avenue from Portola Parkway to I-5
    - Spring Meadows from Medallion to Coralwood
    - Towngate from Hallmark to Crosspointe
    - Roosevelt from Tulip to Sand Canyon Avenue
    - Marine Way from Sand Canyon to SR-133
    - Portola Parkway from Paragon to SR-133
    - Irvine Boulevard from Groveland to SR-133
    - Trabuco Road/Great Park Boulevard from Keystone to SR-133
    - Nightmist from Tulip to Sand Canyon Avenue

- **Bike routes (Class III)** – Bike routes provide enhanced mixed-traffic conditions for bicyclists through signage, striping, and/or traffic calming treatments, and to provide continuity to a bikeway network. Bike routes are typically designated along gaps between bike trails or bike lanes, or along low-volume, low-speed streets. There are no Class III facilities in the study areas.

- **Separated Bikeway (Class IV)** – Separated bikeways, also referred to as cycle tracks or protected bikeways, are bikeways for the exclusive use of bicycles which are physically separated from vehicle traffic. Separated Bikeways were recently adopted by Caltrans in 2015. Types of separation may include, but are not limited to, grade separation, flexible posts, physical barriers, or on-street parking. There are no Class IV facilities in the study areas.

Existing Transit Service

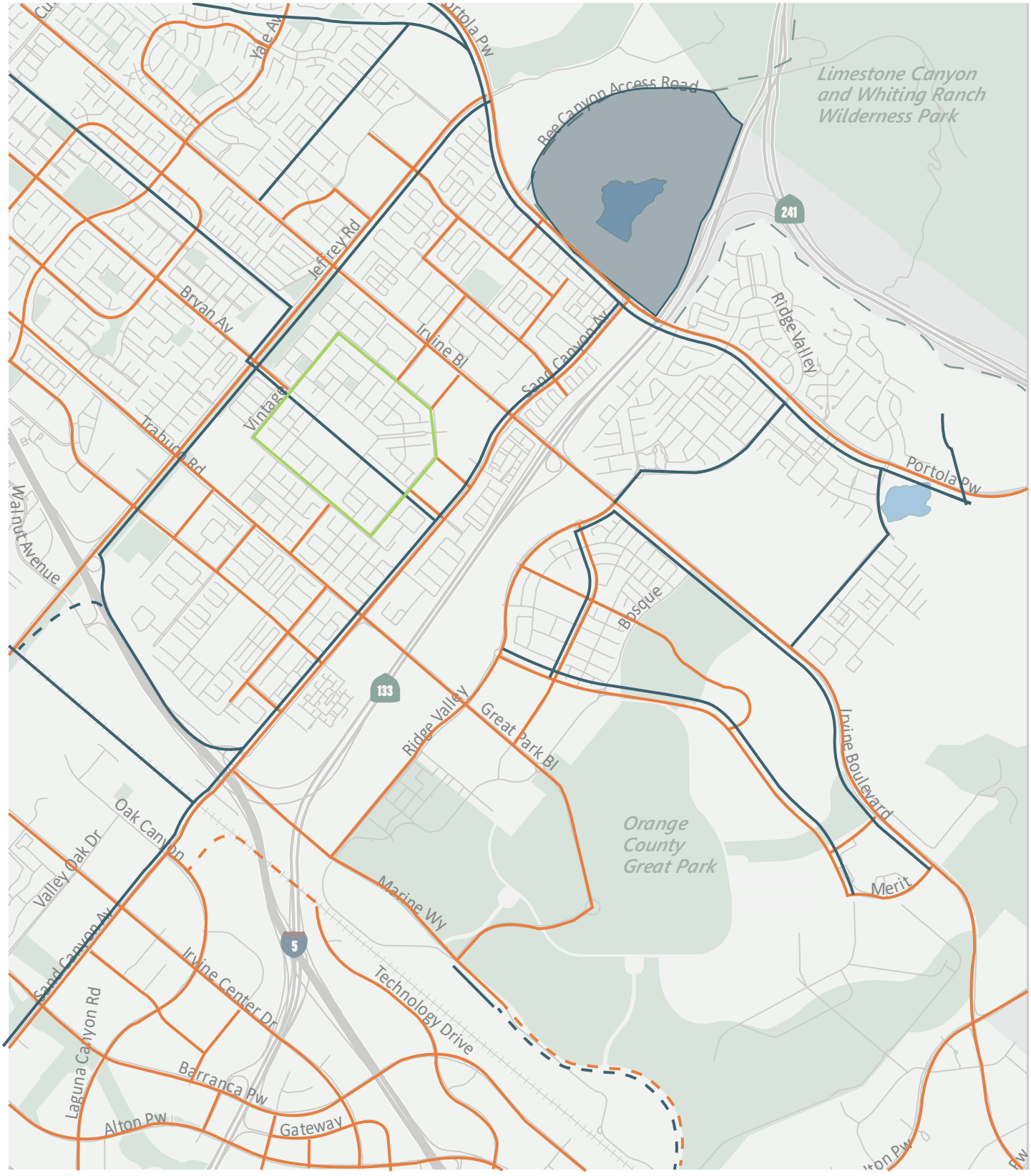
Transit service in the study areas is provided by Orange County Transit Authority (OCTA). OCTA operates Routes 83 and 206 along I-5 in the study area. These routes provide regional service but have no stops in the study area.

Existing Traffic Counts

Due to the COVID-19 pandemic in 2020, travel activity and traffic volumes in the existing year of analysis were substantially decreased throughout the study area and Southern California. It was not possible to collect counts that represented existing traffic conditions. A baseline condition that reflected travel activity and traffic volume prior to the COVID-19 pandemic was developed for the intersection analysis. Historical AM and PM peak hour turning movement counts collected at the study intersection in 2018 provided by the City of Irvine. Each of these counts were grown by 2% per year from their respective count year to the established baseline year of 2020. Peak hour intersection volumes are summarized on Figure 4 along with existing lane configurations and traffic controls. The traffic counts from 2018 are provided in Appendix B.

Existing Operations Analysis

Existing intersection operations were evaluated using the methods described in Chapter 1 for the weekday AM and PM peak hours at the study intersections. The analysis was based on the volumes, lane configurations, and traffic control presented on Figure 4. Detailed intersection LOS calculation worksheets are presented in Appendix C. As shown in Table 2, all signalized study intersections currently operate at LOS C or better in both the AM and PM peak hours.



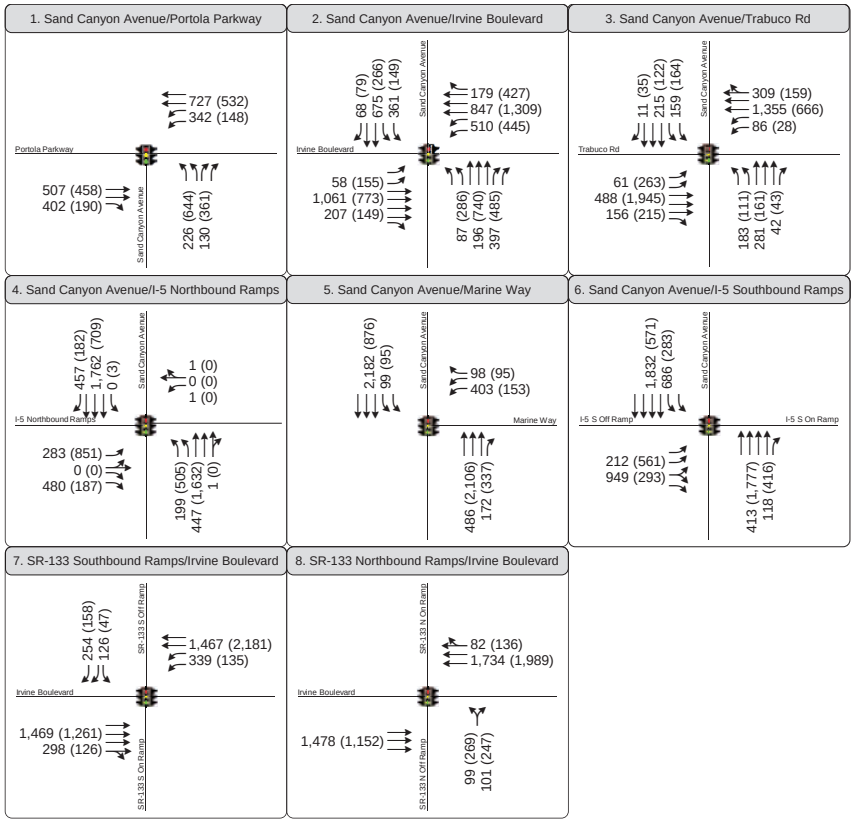
Legend

- Project Site Syphon Reservoir
- On-Street Bikeway
- Planned On-Street Bikeway
- On-Street Bikeway on One Side of the Road
- Off-Street Bikeway
- Planned Off-Street Bikeway

Figure 3

Bicycle Facilities





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections

Project Site Syphon Reservoir

XX(XX) AM(PM)

Figure 4

Existing Peak Hour

Traffic Volumes, Lane Configurations, and Traffic Control

TABLE 2
EXISTING
INTERSECTION LEVEL OF SERVICE

ID	N/S Street Name	E/W Street Name	Control Type	Time Period	Existing Conditions	
					V/C	LOS
1	Sand Canyon Avenue	Portola Parkway	Signalized	AM	0.366	A
				PM	0.418	A
2	Sand Canyon Avenue	Irvine Boulevard	Signalized	AM	0.580	A
				PM	0.541	A
3	Sand Canyon Avenue	Trabuco Road	Signalized	AM	0.496	A
				PM	0.519	A
4	Sand Canyon Avenue	I-5 Northbound Ramps	Signalized	AM	0.538	A
				PM	0.622	B
5	Sand Canyon Avenue	Marine Way	Signalized	AM	0.596	A
				PM	0.547	A
6	Sand Canyon Avenue	I-5 Southbound Ramps	Signalized	AM	0.600	A
				PM	0.520	A
7	SR-133 Southbound Ramps	Irvine Boulevard	Signalized	AM	0.556	A
				PM	0.738	C
8	SR-133 Northbound Off-Ramp	Irvine Boulevard	Signalized	AM	0.465	A
				PM	0.625	B

4. Performance Criteria

The determination of significance for Project impacts is based on applicable policies, regulations, goals, and guidelines defined by the City of Irvine. The proposed impact criteria for this study are presented below.

Vehicle Miles Traveled Impact Thresholds

On June 23, 2020, the City of Irvine adopted the *CEQA VMT Impact Analysis Guidelines*. These guidelines identify the screening criteria, analysis requirements, thresholds, and mitigation options for VMT analysis associated with the operation of new projects in the City of Irvine. The City of Irvine has not provided guidance regarding VMT thresholds for construction related traffic. The screening opportunities and VMT thresholds identified below are documented in the *CEQA VMT Impact Analysis Guidelines* and were utilized as part of the analysis and performance criteria for the Project.

Construction-related traffic is typically considered to cause adverse but not lasting intersection deficiencies because, while sometimes inconvenient, construction-related traffic effects are temporary. However, in an effort to document potential impacts related to the Project, the City of Irvine VMT impact thresholds were applied to the Project.

Screening

If the analysis of environmental impacts related to transportation (i.e., VMT impact analysis) is required for a discretionary project, but if it can be demonstrated that the project meets any one of the following four screening criteria, then no further VMT impact analysis is required:

1. The project results in a net increase of 250 or fewer weekday daily trips.
2. The project is located in a Transit Priority Area[1]
3. The project is 100-percent restricted affordable housing units
4. The project is locally serving such as 100,000 square feet or less of retail use, a daycare use or a locally serving public school

[1] A Transit Priority Area (TPA) is defined as within half-mile distance of existing rail transit station or located within half-mile of two or more existing bus routes with a frequency of service interval of 15 minutes or less during morning and evening peak hours.

Thresholds of Significance

The City's identified significance criteria is for the operation of new projects to generate 15 percent less VMT per capita (or per employee) compared to existing conditions, which is consistent with the OPR Technical Advisory recommendations. City staff will periodically update the VMT thresholds based on the latest calibrated and validated City VMT traffic model. Any technical updates to the VMT significance thresholds are subject to the approval of the Transportation Commission at the recommendation of the Director of Public Works and Transportation.

The table below identifies the existing residential VMT per capita and the non-residential VMT per employee, as well as the proposed residential VMT per capita and non-residential VMT per employee significance thresholds, as documented in the *CEQA VMT Impact Analysis Guidelines*. The residential significance threshold is based on the countywide residential VMT divided by the countywide population, while the non-residential significance threshold is based on the countywide commute and other (i.e., customer and client) VMT divided by the number of countywide employees.

Land Use Type	Existing	Significance Threshold* (15 percent reduction)
Residential (VMT per population)	17.5	14.9
Non-Residential (VMT per employee)	48.8	41.5

* Any technical updates to the VMT significance thresholds are subject to the approval of the Transportation Commission at the recommendation of the Director of Public Works and Transportation.
Source: *CEQA VMT Impact Analysis Guidelines* (City of Irvine, April 2020)

If the project VMT rate exceeds the respective threshold, then the project creates a significant impact. When a project results in a significant VMT impact, it must identify the mitigation measures to reduce the impact to a level that meets the City's adopted VMT threshold. All feasible mitigation measures must be incorporated into the project to substantially reduce the impact even if the project cannot meet the adopted VMT threshold.

Signalized Intersections Deficiencies

Construction-related traffic is typically considered to cause adverse but not lasting intersection deficiencies because, while sometimes inconvenient, construction-related traffic effects are temporary. However, in an effort to document potential intersection deficiencies related to the Project, City of Irvine intersection criteria was applied to all signalized intersections. A signalized intersection is considered to be deficient if one of the following criteria is met.

- A location is at acceptable LOS in the baseline condition and the project causes the location to become deficient; or
- A location at unacceptable LOS in the baseline condition and the project causes the location to further deteriorate by two percent or more (i.e. 0.02 v/c ratio change).

According to the *City of Irvine Traffic Study Guidelines*, LOS E shall be considered acceptable for links and intersections in accordance with the City's General Plan Objective B-1. LOS D shall be considered acceptable for all other areas of the City. Based on these criteria, all study intersections will be identified as operating acceptably if they are at or better than LOS D.

For intersection analysis, if an intersection is determined to be deficient based on the criteria above, then the project will be required to improve the intersection, at a minimum, back to the baseline condition.

5. Project Characteristics

Trip Generation

Construction of the Project is estimated to be approximately 41 months, depending on weather conditions and other variables. Construction is currently anticipated to begin in the Fall of 2022. Most construction activities would be limited to 7:00 AM to 7:00 PM Monday through Friday. Construction of the Project would include activities implemented in phases as outlined below.

- Access Routes/Intersection Improvements
- Excavation of Sediment/Existing Dam
- Construction of Dam/Spillway/Reservoir
- Construction of Filtration/Chlor/Dechlor Facilities
- Wetlands/Riparian Installation
- Installation of Recreation Facilities
- Demobilization

Construction Vehicle Type

Haul Trucks

Hauling hours are anticipated to be 7:00 AM to 3:00 PM on weekdays. During the peak trip period, approximately 52 material delivery trucks would enter and exit the site per workday for approximately twelve months. During other times of construction, material deliveries would be expected in the range of 5 to 10 material delivery trucks per day. These trucks are assumed to arrive and depart evenly between 7:00 AM and 3:00 PM during an 8-hour shift.

Equipment and Delivery Trucks

In addition to haul trucks, the site is also expected to generate equipment and delivery trucks during each phase of construction. These materials would be delivered to the site and stored on-site. These deliveries are expected to occur in a variety of vehicles including small delivery trucks to cement mixer trucks and 18-wheel trucks. Additionally, construction equipment would also have to be delivered to the site. This equipment could include bulldozers, excavators, and other large items of machinery. Most of the heavy equipment is expected to be transported to the site on large trucks such as 18-wheelers or other similar vehicles. These trucks are assumed to arrive and depart evenly between 7:00 AM and 3:00 PM during an 8-hour shift.

Employee Vehicles

The number of construction workers would vary throughout the construction period. Parking for all construction workers would be provided on-site. Construction workers are assumed to arrive in single occupant vehicles.

Construction Period Trip Generation

Based on the aforementioned information, a construction period trip generation analysis was conducted to estimate daily, morning, and evening peak hour trips of the phase with the highest trip generation potential. As seen in Table 3, the construction of Dam/Spillway/Reservoir phase represents the day with the highest trip generation potential with approximately 116 vehicles.

Construction workers often travel to and from a worksite outside of the typical peak commute hours. Construction hours are anticipated to occur from 7:00 AM to 7:00 PM, with most worker trips and truck trips anticipated to occur outside of the AM and PM peak hours. For the purpose of the analysis, it was assumed that up to 40% of the construction workers would arrive at the construction site during the peak morning commute hour and up to 40% would depart the construction site during the peak evening commute hour. Equipment trucks were assumed to arrive and depart evenly between 7:00 AM and 3:00 PM during an 8-hour shift.

Table 3 presents a summary of the construction trip generation on a peak day. As shown, on a peak construction activity day, approximately 232 daily trips are estimated, of which 36 trips (27 inbound/9 outbound) would occur during the AM peak hour and 18 trips (0 inbound/18 outbound) would occur during the PM peak hour. For the purpose of the intersection LOS analysis, the trip generation estimates were converted to Passenger Car Equivalent (PCE) trips. PCE reflects the additional effect larger vehicles have on intersection operations based on their larger size. A PCE factor of 1.0 was assumed for worker vehicles and a PCE factor of 3.0 was assumed for all construction trucks, based on the *Highway Capacity Manual 6th Edition (HCM)* (Transportation Research Board, 2017). As shown in Table 3, on a peak construction activity day, approximately 512 daily PCE trips are estimated, of which 72 PCE trips (45 inbound/27 outbound) would occur during the AM peak hour and 18 PCE trips (0 inbound/18 outbound) would occur during the PM peak hour.

This trip generation is anticipated to occur for approximately two to three months. Trip generation outside of this phase would be reduced with approximately 30 daily to 154 daily trips being generated.

Trip Distribution and Assignment

Four routes are proposed for the Project.

- Route 1A – I-5 (from the north), north on Sand Canyon Avenue for trucks traveling inbound and southbound on Sand Canyon Avenue to I-5 (to the north) for trucks traveling outbound.
- Route 1B – I-5 (from the south), north on Sand Canyon Avenue for trucks traveling inbound and southbound on Sand Canyon Avenue to I-5 (to the south) for trucks traveling outbound.
- Route 2A – SR-133 (from the north), west on Irvine Boulevard, and north on Sand Canyon Avenue for trucks traveling inbound and southbound on Sand Canyon Avenue and east on Irvine Boulevard to SR-133 (to the north) for trucks traveling outbound.
- Route 2B – SR-133 (from the south), west on Irvine Boulevard, and north on Sand Canyon Avenue for trucks traveling inbound and southbound on Sand Canyon Avenue and east on Irvine Boulevard to SR-133 (to the south) for trucks traveling outbound.

Figure 5 shows the distribution and assignment of the four routes studied. Figure 6a – Figure 6d shows the study intersection turning movement volumes of the Project trips for each route.

Timeline

The proposed Project is assumed to be operational by end of 2026.

TABLE 3
CONSTRUCTION TRIP GENERATION

Phase	Duration (Months)	Peak Day Activity Under Each Phase			Total Vehicles	Total Daily Vehicle Trips
		Haul Trucks	Equipment and Delivery Trucks	Employee Vehicles		
Access Routes/Intersection Improvements	5	8	3	10	21	42
Excavation of Sediment/ Existing Dam	6.6	0	6	31	37	74
Construction of Dam/Spillway/Reservoir	13.8	52	18	46	116	232
Construction of Filtration/Chlor/Dechlor Facility	12	0	29	48	77	154
Wetlands/Riparian Installation	12	0	5	20	25	50
Installation of Recreation Facilities	3	0	5	10	15	30
Demobilization	1	0	7	15	22	44

Construction of Dam/Spillway/Reservoir Trip Generation							
Trip Type	Daily Trips [a]	Morning Peak Hour Trips			Evening Peak Hour Trips		
		In	Out	Total	In	Out	Total
Haul Truck Trips [b]	104	7	7	14	0	0	0
Delivery and Equipment Truck Trips [b]	36	2	2	4	0	0	0
Construction Worker Trips [c]	92	18	0	18	0	18	18
Phase Total	**232**	**27**	**9**	**36**	**0**	**18**	**18**

Construction of Dam/Spillway/Reservoir Trip Generation							
Trip Type and Passenger Car Equivalency	Daily Trips [a]	Morning Peak Hour Trips			Evening Peak Hour Trips		
		In	Out	Total	In	Out	Total
Haul Truck Trips PCE: 3.0	312	21	21	42	0	0	0
Delivery and Equipment Truck Trips PCE: 3.0	108	6	6	12	0	0	0
Construction Worker Trips PCE: 1.0	92	18	0	18	0	18	18
PCE Phase Total	**512**	**45**	**27**	**72**	**0**	**18**	**18**

Notes:

[a] - Daily trips were calculated by counting two trips, one inbound and one outbound trip for each vehicle

[b] - Daily haul and delivery/equipment truck trips were assumed to occur evenly throughout an 8-hour construction day. Therefore, the daily truck trips were divided by 8 hours to calculate morning and evening peak hour truck trips.

[c] - Up to 40% of the construction workers were assumed to arrive during the morning peak hour of adjacent street traffic. A total of up to 40% worker were assumed to depart during the evening peak hour.



Legend

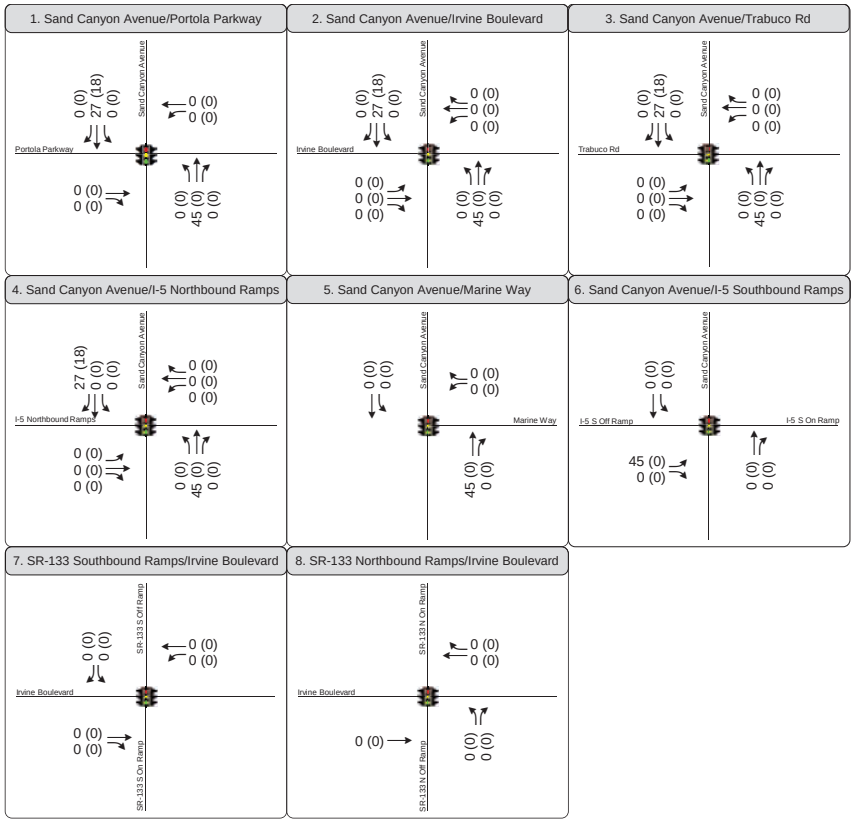
Project Site Syphon Reservoir

Route 1A
Route 1B
Route 2A
Route 2B

Figure 5

Distribution and Assignment





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections

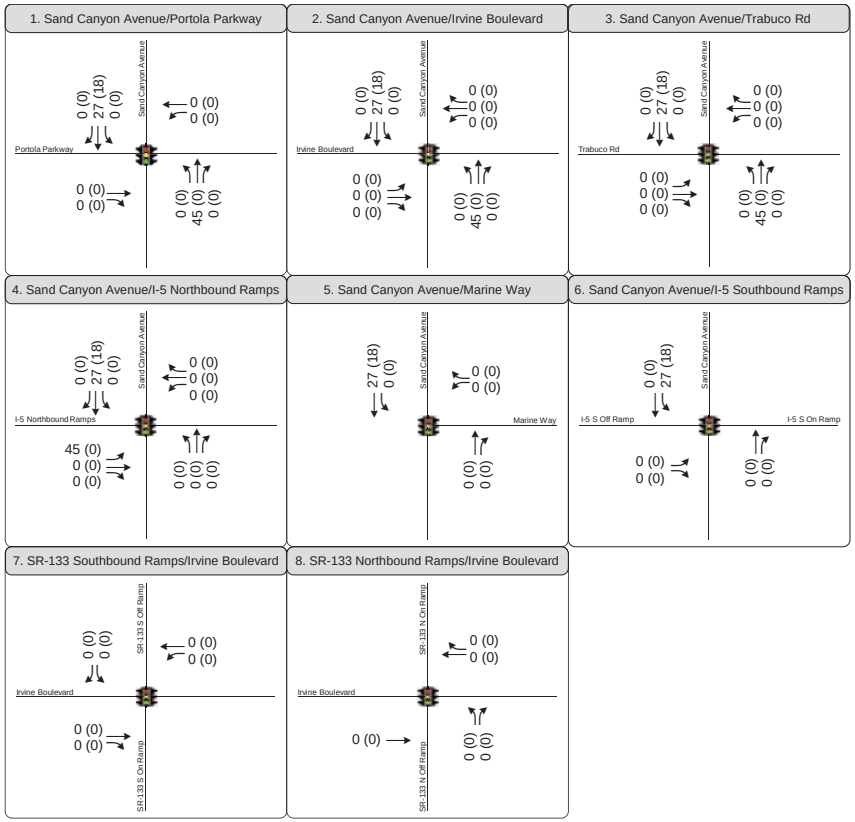
Project Site Syphon Reservoir

XX(XX) AM(PM)

Figure 6a

Project Only (Route 1A) Peak Hour Traffic Volumes and Traffic Control





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections

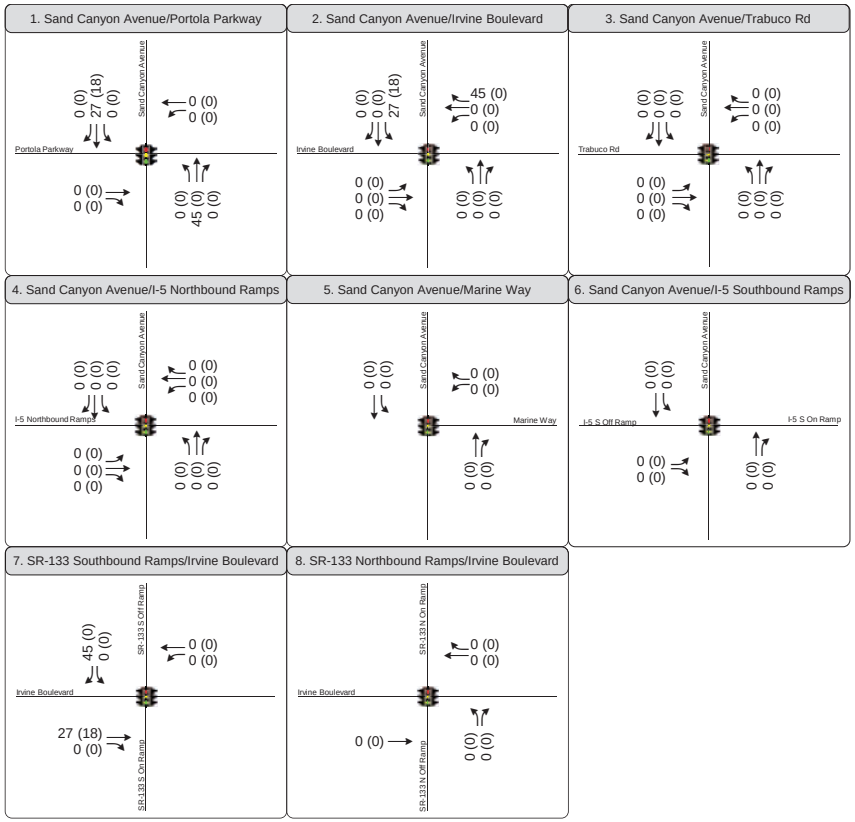
Project Site Syphon Reservoir

XX(XX) AM(PM)

Figure 6b

Project Only (Route 1B) Peak Hour Traffic Volumes and Traffic Control





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections

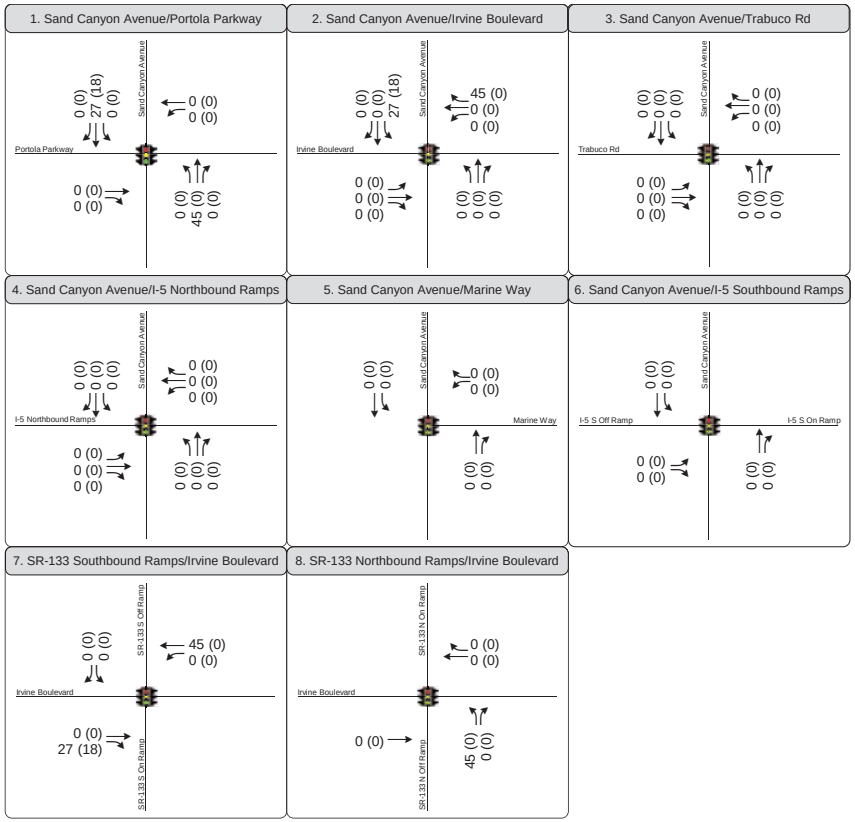
Project Site Syphon Reservoir

XX(XX) AM(PM)

Figure 6c

Project Only (Route 2A) Peak Hour Traffic Volumes and Traffic Control





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections

Project Site Syphon Reservoir

XX(XX) AM(PM)

Figure 6d

Project Only (Route 2B) Peak Hour Traffic Volumes and Traffic Control

6. Existing Plus Project Conditions

This chapter evaluates potential off-site intersection deficiencies under Existing Plus Project conditions.

Traffic Volumes

The Project traffic volumes on Figure 6a through Figure 6d were added to the existing traffic volumes from Figure 4 to estimate the Existing Plus Project traffic volumes for each route, as shown on Figure 7a through Figure 7d.

Intersection Improvements

All Existing Plus Project scenarios intersection lane configurations are assumed to include buildout of a private roadway connection from the northern side of the Sand Canyon Avenue and Portola Parkway intersection to the Project site. This improvement assumes the northbound approach at Sand Canyon Avenue and Portola Parkway is modified from two left-turn lanes and two right-turn lanes to one left-turn lane, one shared through/left-turn lane, and two right-turn lanes. The southbound approach will be constructed with one shared left/through/right-turn lane. Split phasing (a traffic signal operation that gives a green phase for all vehicle movements of one direction followed by a green phase for all movements of the opposite direction) would be incorporated for the northbound and new southbound approaches during construction and typical operations.

Intersection Operations

Existing Plus Project intersection operations were evaluated using the methods described in Chapter 1. All the Existing Plus Project analysis results for each route are presented in Table 4, based on the traffic volumes presented on Figure 7a through Figure 7d. As shown, all routes would have each signalized study intersections operate at LOS C or better in both the AM and PM peak hours.

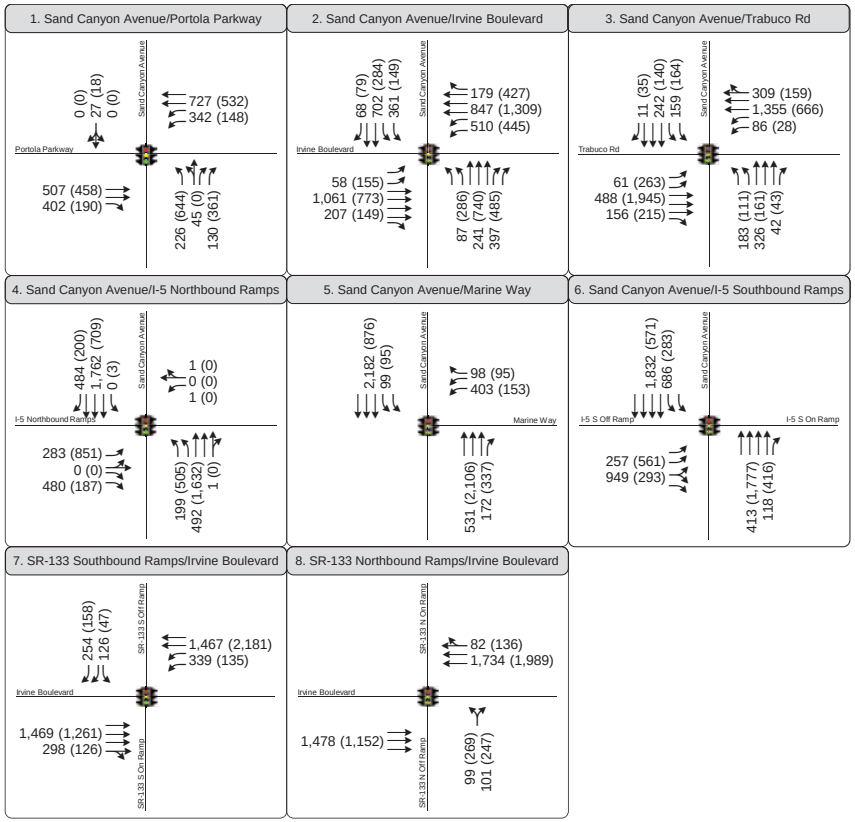
Intersection Deficiencies

As presented in Table 4, after applying the intersection deficiency criteria, it was determined none of the route options would have a deficient intersection under the Existing Plus Project condition.

Recommended Improvements

There are no intersection deficiencies under Existing Plus Project condition. No intersection improvements are required.





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections

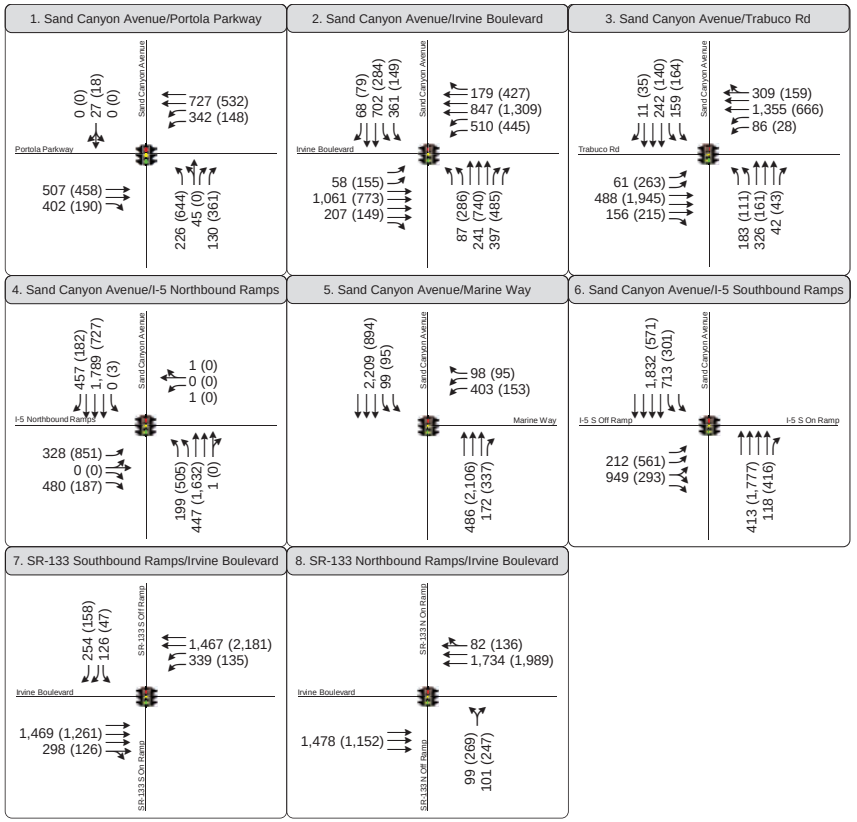
Project Site Syphon Reservoir

XX(XX) AM(PM)

Figure 7a

Existing Plus Project (Route 1A) Peak Hour
Traffic Volumes, Lane Configurations, and Traffic Control





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections

Project Site Syphon Reservoir

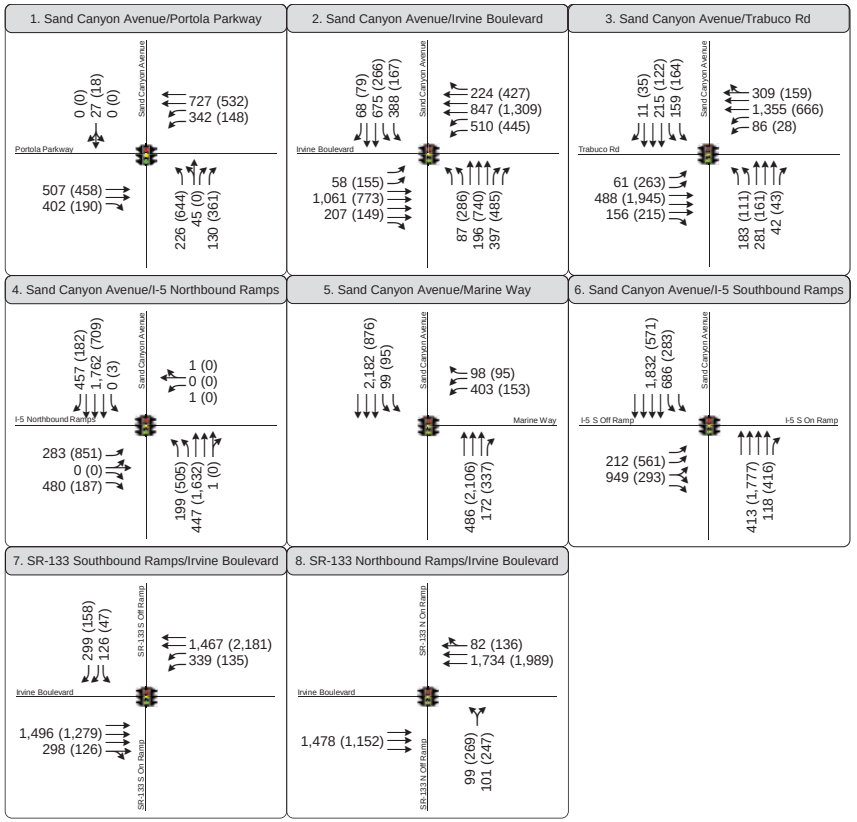
XX(XX) AM(PM)

Figure 7b

Existing Plus Project (Route 1B) Peak Hour

Traffic Volumes, Lane Configurations, and Traffic Control





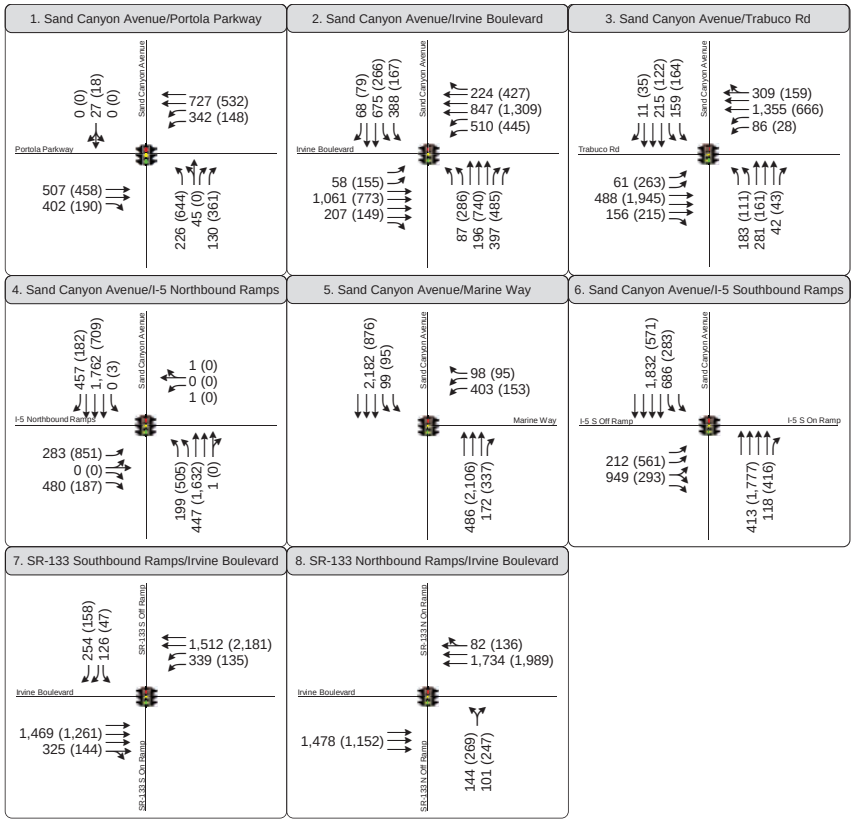
Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections
Project Site Syphon Reservoir
XX(XX) AM(PM)

Figure 7c
Existing Plus Project (Route 2A) Peak Hour
Traffic Volumes, Lane Configurations, and Traffic Control





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections

Project Site Syphon Reservoir

XX(XX) AM(PM)

Figure 7d

Existing Plus Project (Route 2B) Peak Hour

Traffic Volumes, Lane Configurations, and Traffic Control

TABLE 4
EXISTING PLUS PROJECT (ALL ROUTE OPTIONS)
INTERSECTION LEVEL OF SERVICE

ID	N/S Street Name	E/W Street Name	Control Type	Time Period	Existing Conditions		Existing Plus Project (Route 1A)				Existing Plus Project (Route 1B)				Existing Plus Project (Route 2A)				Existing Plus Project (Route 2B)			
					V/C	LOS	V/C	LOS	Change in V/C	Deficient	V/C	LOS	Change in V/C	Deficient	V/C	LOS	Change in V/C	Deficient	V/C	LOS	Change in V/C	Deficient
1	Sand Canyon Avenue	Portola Parkway	Signalized	AM	0.366	A	0.396	A	0.030	No	0.396	A	0.030	No	0.396	A	0.030	No	0.396	A	0.030	No
				PM	0.418	A	0.429	A	0.011	No	0.429	A	0.011	No	0.429	A	0.011	No	0.429	A	0.011	No
2	Sand Canyon Avenue	Irvine Boulevard	Signalized	AM	0.580	A	0.588	A	0.008	No	0.588	A	0.008	No	0.580	A	0.000	No	0.580	A	0.000	No
				PM	0.541	A	0.541	A	0.000	No	0.541	A	0.000	No	0.546	A	0.005	No	0.546	A	0.005	No
3	Sand Canyon Avenue	Trabuco Road	Signalized	AM	0.496	A	0.505	A	0.009	No	0.505	A	0.009	No	0.496	A	0.000	No	0.496	A	0.000	No
				PM	0.519	A	0.519	A	0.000	No	0.519	A	0.000	No	0.519	A	0.000	No	0.519	A	0.000	No
4	Sand Canyon Avenue	I-5 Northbound Ramps	Signalized	AM	0.538	A	0.538	A	0.000	No	0.556	A	0.018	No	0.538	A	0.000	No	0.538	A	0.000	No
				PM	0.622	B	0.622	B	0.000	No	0.622	B	0.000	No	0.622	B	0.000	No	0.622	B	0.000	No
5	Sand Canyon Avenue	Marine Way	Signalized	AM	0.596	A	0.596	A	0.000	No	0.602	B	0.006	No	0.596	A	0.000	No	0.596	A	0.000	No
				PM	0.547	A	0.547	A	0.000	No	0.547	A	0.000	No	0.547	A	0.000	No	0.547	A	0.000	No
6	Sand Canyon Avenue	I-5 Southbound Ramps	Signalized	AM	0.600	A	0.600	A	0.000	No	0.608	B	0.008	No	0.600	A	0.000	No	0.600	A	0.000	No
				PM	0.520	A	0.520	A	0.000	No	0.525	A	0.005	No	0.520	A	0.000	No	0.520	A	0.000	No
7	SR-133 Southbound Ramps	Irvine Boulevard	Signalized	AM	0.556	A	0.556	A	0.000	No	0.556	A	0.000	No	0.569	A	0.013	No	0.569	A	0.013	No
				PM	0.738	C	0.738	C	0.000	No	0.738	C	0.000	No	0.738	C	0.000	No	0.738	C	0.000	No
8	SR-133 Northbound Off-Ramp	Irvine Boulevard	Signalized	AM	0.465	A	0.465	A	0.000	No	0.465	A	0.000	No	0.465	A	0.000	No	0.491	A	0.026	No
				PM	0.625	B	0.625	B	0.000	No	0.625	B	0.000	No	0.625	B	0.000	No	0.625	B	0.000	No

7. Short-Term Interim Year Conditions

This chapter evaluates the Short-Term Interim Year Conditions.

Future Traffic Forecasts

Per the approved scope of work, the Project is required to study the Short-Term Interim Year Approved and Short-Term Interim Year Pending scenarios from ITAM. ITAM forecasts for the base year and both short-term interim year scenarios were provided by the City of Irvine. These scenarios were used to determine growth rates on a per year basis that were applied to the 2020 existing intersection volumes to develop Short-Term Interim Year Approved and Pending intersection volumes. Study intersection volumes Short-Term Interim Year Approved are provided in Figure 8 and study intersection volumes Short-Term Interim Year Pending are provided in Figure 9.

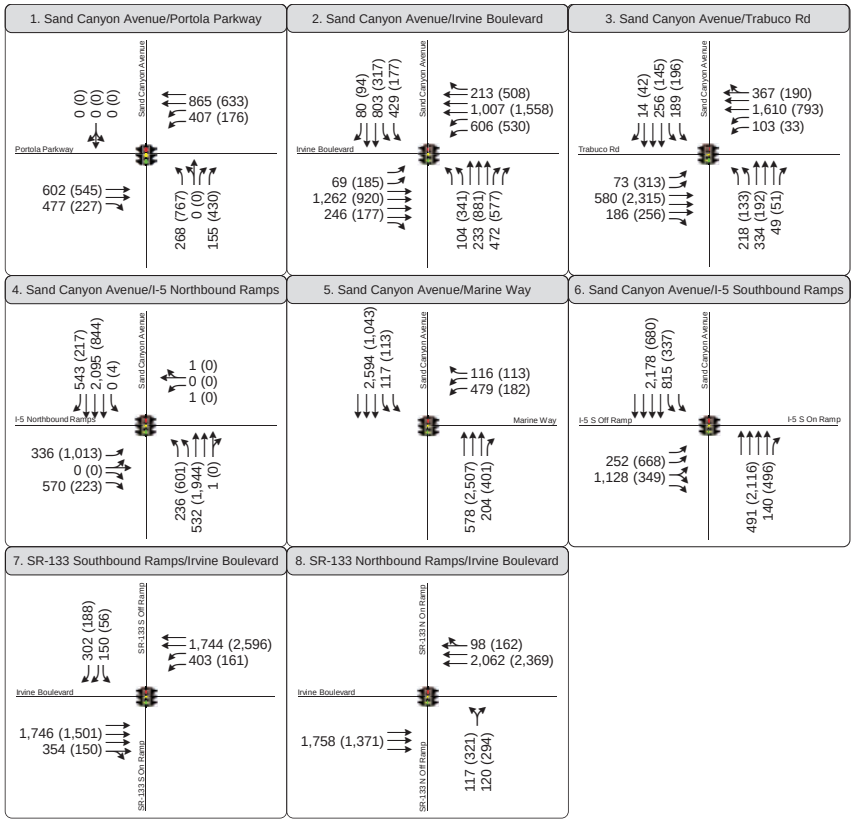
Intersection Improvements

Both Short-Term Interim Year scenarios intersection lane configurations are assumed to include the same lane geometry as the Existing Conditions.

Intersection Operations

Short-Term Interim Year intersection operations were evaluated using the methods described in Chapter 1. The Short-Term Interim Year Approved analysis results are presented in Table 5. As shown, all signalized intersections operate at LOS D or better in both the AM and PM peak hours. The Short-Term Interim Year Pending analysis results are presented in Table 6. As shown, all signalized intersections operate at LOS D or better in both the AM and PM peak hours.





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections

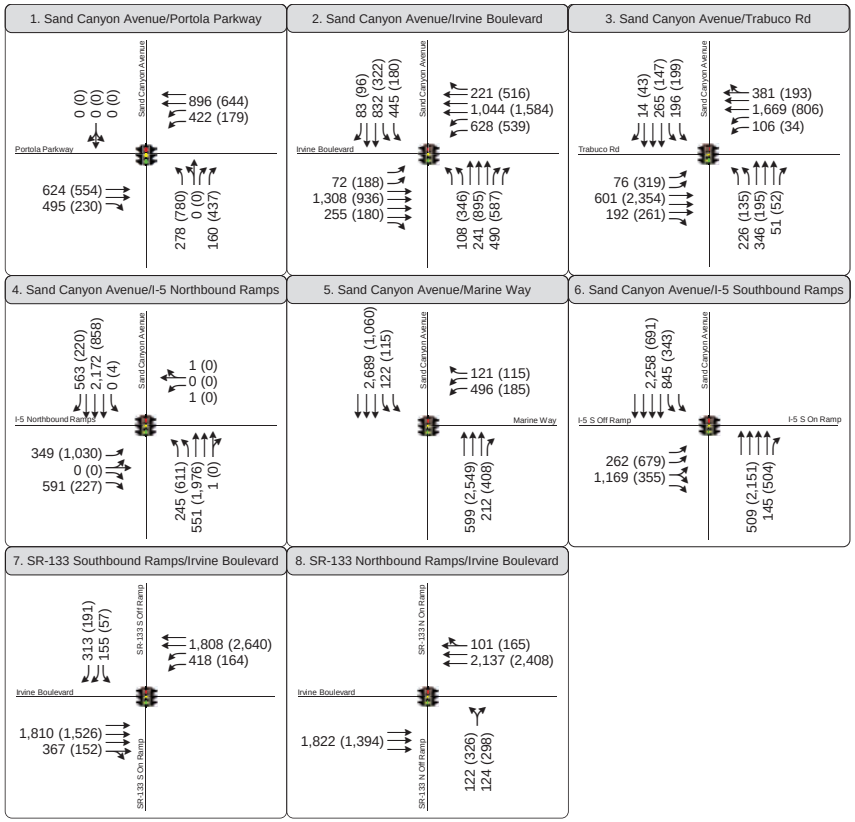
Project Site Syphon Reservoir

XX(XX) AM(PM)

Figure 8

Short-Term Interim Year Approved Peak Hour
Traffic Volumes, Lane Configurations, and Traffic Control





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections

Project Site Syphon Reservoir

XX(XX) AM(PM)

Figure 9

Short-Term Interim Year Pending Peak Hour
Traffic Volumes, Lane Configurations, and Traffic Control

TABLE 5
SHORT-TERM YEAR APPROVED
INTERSECTION LEVEL OF SERVICE

ID	N/S Street Name	E/W Street Name	Control Type	Time Period	Short-Term Approved Conditions	
					V/C	LOS
1	Sand Canyon Avenue	Portola Parkway	Signalized	AM	0.426	A
				PM	0.488	A
2	Sand Canyon Avenue	Irvine Boulevard	Signalized	AM	0.681	B
				PM	0.635	B
3	Sand Canyon Avenue	Trabuco Road	Signalized	AM	0.580	A
				PM	0.609	B
4	Sand Canyon Avenue	I-5 Northbound Ramps	Signalized	AM	0.630	B
				PM	0.731	C
5	Sand Canyon Avenue	Marine Way	Signalized	AM	0.700	B
				PM	0.641	B
6	Sand Canyon Avenue	I-5 Southbound Ramps	Signalized	AM	0.704	C
				PM	0.610	B
7	SR-133 Southbound Ramps	Irvine Boulevard	Signalized	AM	0.652	B
				PM	0.869	D
8	SR-133 Northbound Off-Ramp	Irvine Boulevard	Signalized	AM	0.544	A
				PM	0.735	C

TABLE 6
SHORT-TERM YEAR PENDING
INTERSECTION LEVEL OF SERVICE

ID	N/S Street Name	E/W Street Name	Control Type	Time Period	Short-Term Pending Conditions	
					V/C	LOS
1	Sand Canyon Avenue	Portola Parkway	Signalized	AM	0.439	A
				PM	0.495	A
2	Sand Canyon Avenue	Irvine Boulevard	Signalized	AM	0.704	C
				PM	0.644	B
3	Sand Canyon Avenue	Trabuco Road	Signalized	AM	0.600	A
				PM	0.618	B
4	Sand Canyon Avenue	I-5 Northbound Ramps	Signalized	AM	0.651	B
				PM	0.743	C
5	Sand Canyon Avenue	Marine Way	Signalized	AM	0.723	C
				PM	0.651	B
6	Sand Canyon Avenue	I-5 Southbound Ramps	Signalized	AM	0.728	C
				PM	0.619	B
7	SR-133 Southbound Ramps	Irvine Boulevard	Signalized	AM	0.674	B
				PM	0.883	D
8	SR-133 Northbound Off-Ramp	Irvine Boulevard	Signalized	AM	0.562	A
				PM	0.746	C

8. Short-Term Interim Year Plus Project Conditions

This chapter evaluates the potential off-site intersection deficiencies under Short-Term Interim Year Plus Project conditions.

Future Traffic Forecasts

The Project traffic volumes from Figure 6a through Figure 6d were added to the Short-Term Interim Year Approved traffic volumes from Figure 8 to estimate the Short-Term Interim Year Approved plus Project traffic volumes, as shown on Figure 10a through Figure 10d.

The Project traffic volumes from Figure 6a through Figure 6d were added to the Short-Term Interim Year Pending traffic volumes from Figure 9 to estimate the Short-Term Interim Year Pending plus Project traffic volumes, as shown on Figure 11a through Figure 11d.

Intersection Improvements

All Short-Term Interim Year Approved plus Project and Short-Term Interim Year Pending plus Project scenarios intersection lane configurations are assumed to include buildout of a private roadway connection from the northern side of the Sand Canyon Avenue and Portola Parkway intersection to the Project site. This improvement assumes the northbound approach at Sand Canyon Avenue and Portola Parkway is modified from two left-turn lanes and two right-turn lanes to one left-turn lane, one shared through/left-turn lane, and two right-turn lanes. The southbound approach will be constructed with one shared left/through/right-turn lane. Split phasing (a traffic signal operation that gives a green phase for all vehicle movements of one direction followed by a green phase for all movements of the opposite direction) would be incorporated for the northbound and new southbound approaches during construction and typical operations.

Intersection Operations

Short-Term Interim Year Approved plus Project and Short-Term Interim Year Pending plus Project intersection operations were evaluated using the methods described in Chapter 1. All the Short-Term Interim Year Approved plus Project analysis results for each route are presented in Table 7, based on the traffic volumes presented on Figure 10a through Figure 10d. As shown, all routes would have each signalized study intersections operate at LOS D or better in both the AM and PM peak hours. All the Short-Term

Interim Year Pending plus Project analysis results for each route are presented in Table 8, based on the traffic volumes presented on Figure 11a through Figure 11d. As shown, all routes would have each signalized study intersections operate at LOS D or better in both the AM and PM peak hours.

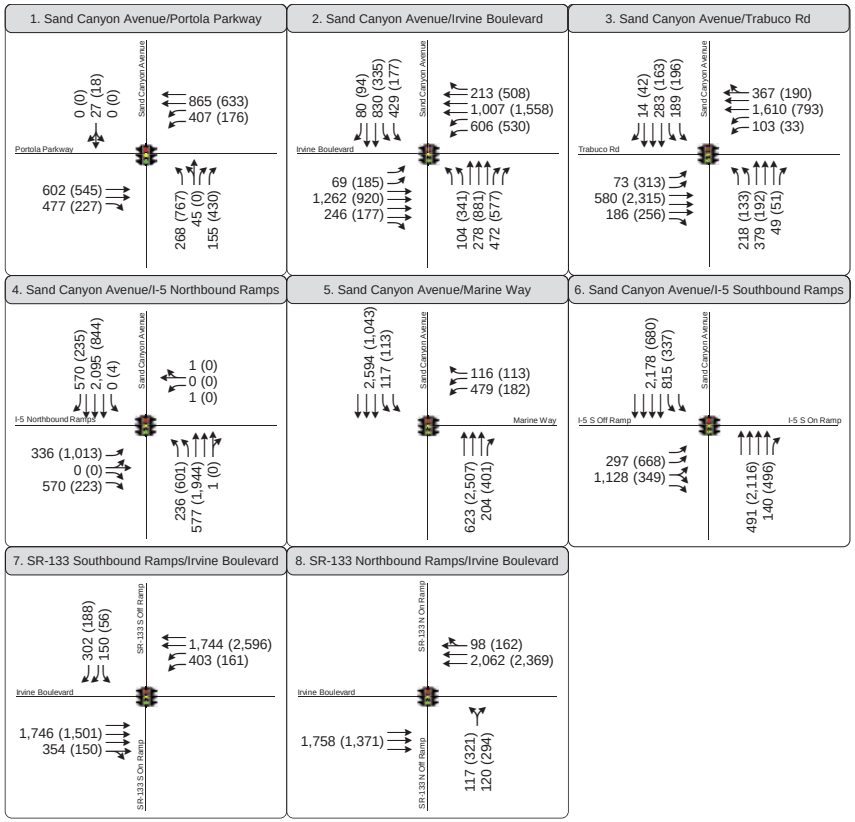
Intersection Deficiencies

As presented in Table 7, after applying the intersection deficiency criteria, it was determined none of the route options would have a deficient intersection under the Short-Term Interim Year Approved plus Project condition. As presented in Table 8, after applying the intersection deficiency criteria, it was determined none of the route options would have a deficient intersection under the Short-Term Interim Year Pending plus Project condition.

Recommended Improvements

There are no intersection deficiencies under either the Short-Term Interim Year Approved plus Project condition or the Short-Term Interim Year Pending plus Project conditions. No intersection improvements are required.





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections

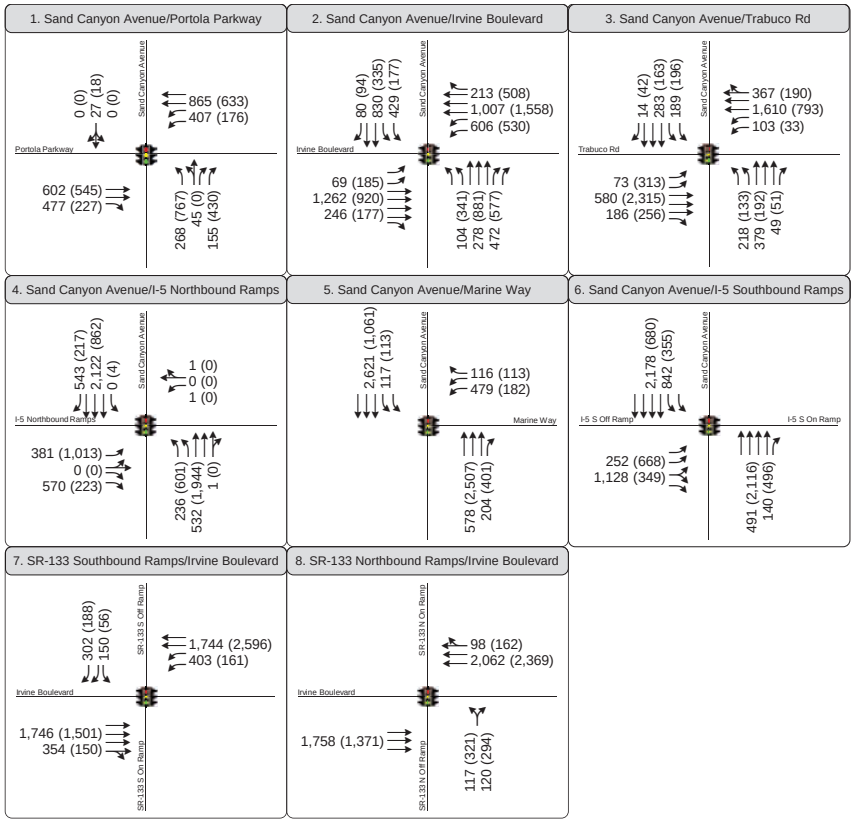
Project Site Syphon Reservoir

XX(XX) AM(PM)

Figure 10a

Short-Term Interim Year Approved Plus Project (Route 1A) Peak Hour Traffic Volumes, Lane Configurations, and Traffic Control





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections

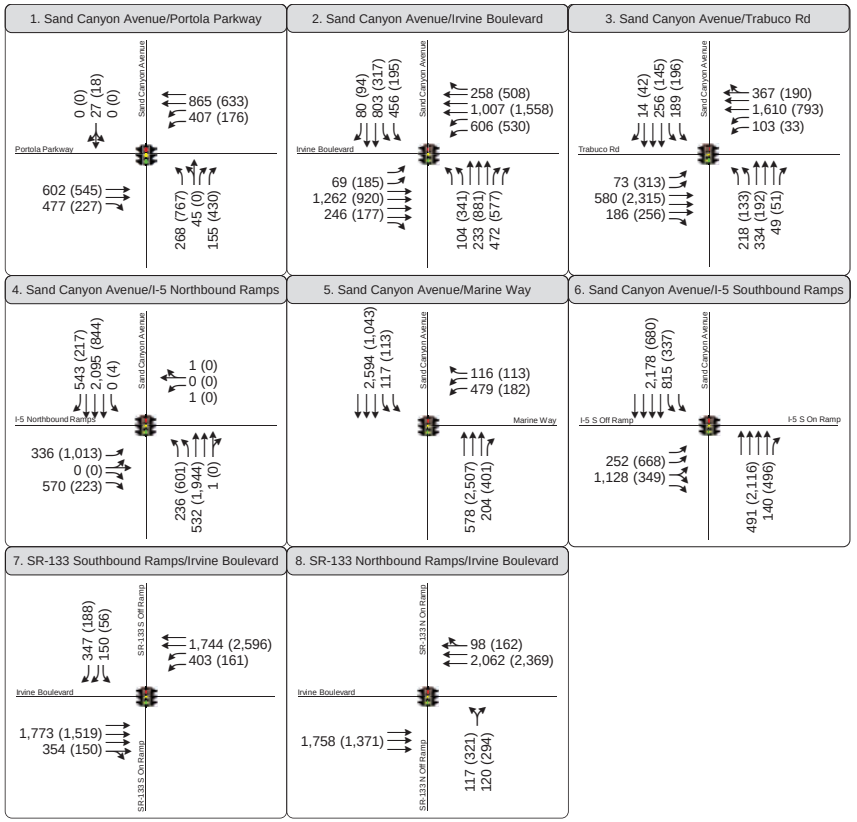
Project Site Syphon Reservoir

XX(XX) AM(PM)

Figure 10b

Short-Term Interim Year Approved Plus Project (Route 1B) Peak Hour Traffic Volumes, Lane Configurations, and Traffic Control





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections

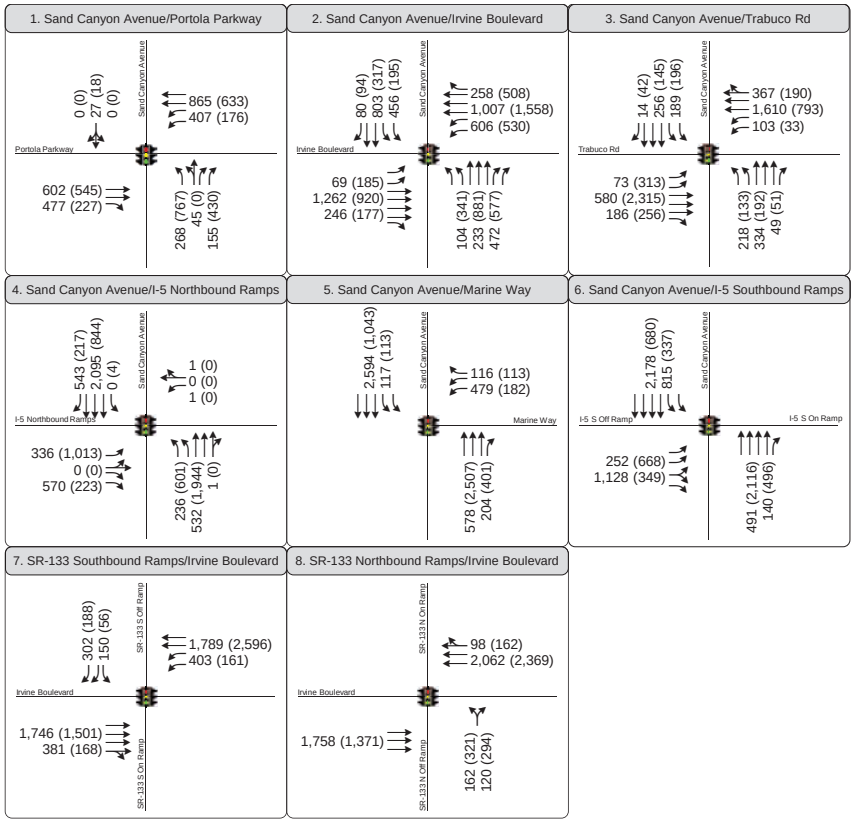
Project Site Syphon Reservoir

XX(XX) AM(PM)

Figure 10c

Short-Term Interim Year Approved Plus Project (Route 2A) Peak Hour Traffic Volumes, Lane Configurations, and Traffic Control





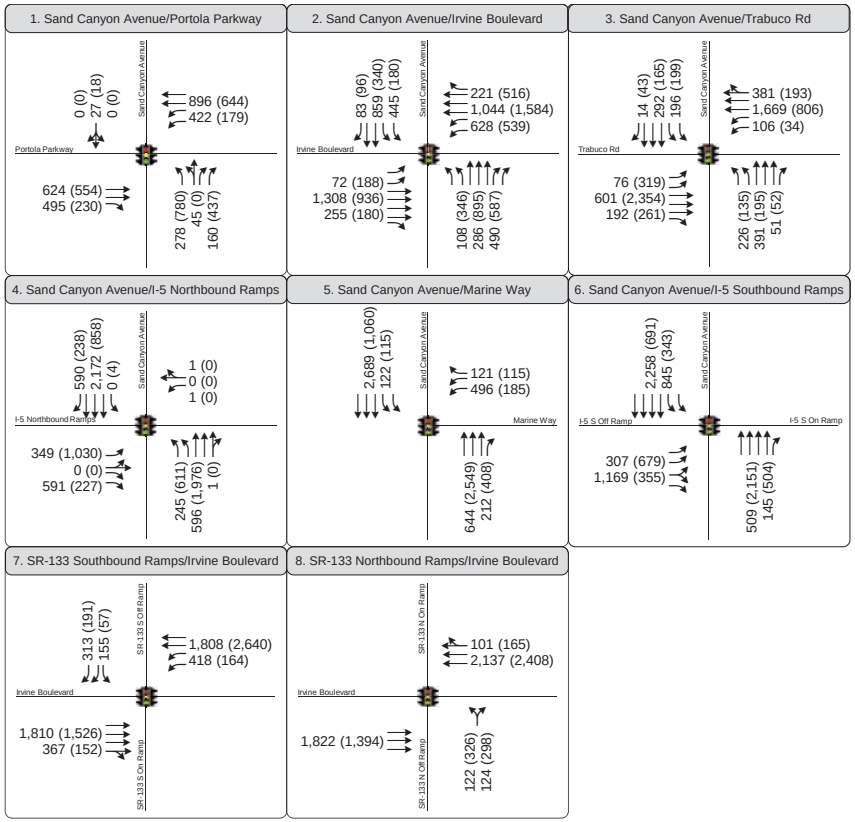
Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections
Project Site Syphon Reservoir
XX(XX) AM(PM)

Figure 10d
Short-Term Interim Year Approved Plus Project (Route 2B) Peak Hour Traffic Volumes, Lane Configurations, and Traffic Control





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections

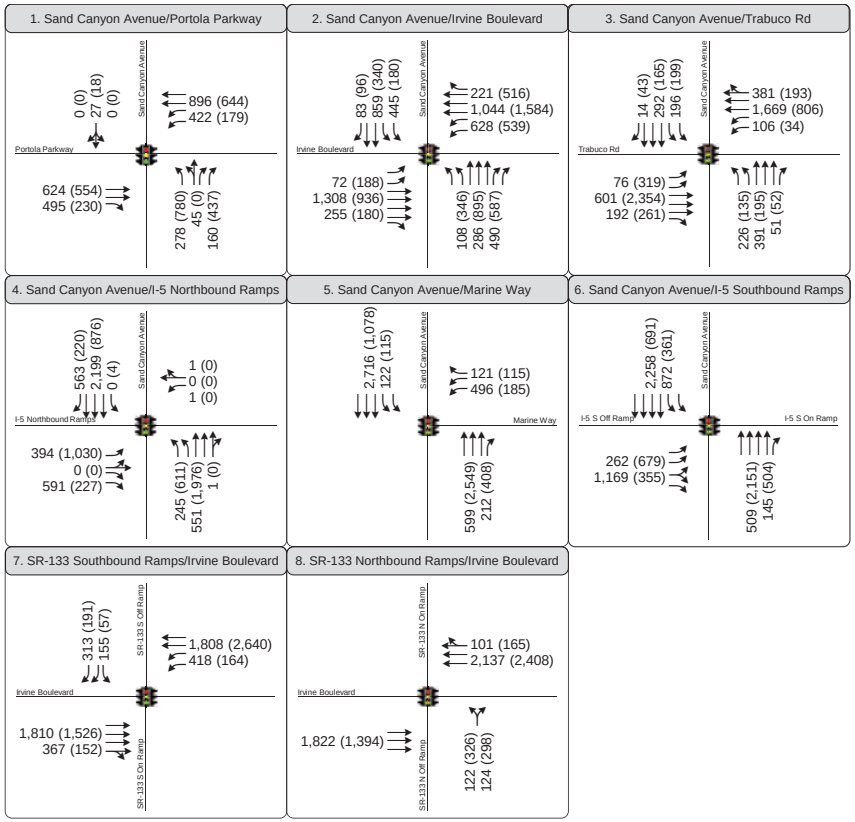
Project Site Syphon Reservoir

XX(XX) AM(PM)

Figure 11a

Short-Term Interim Year Pending Plus Project (Route 1A) Peak Hour Traffic Volumes, Lane Configurations, and Traffic Control





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections

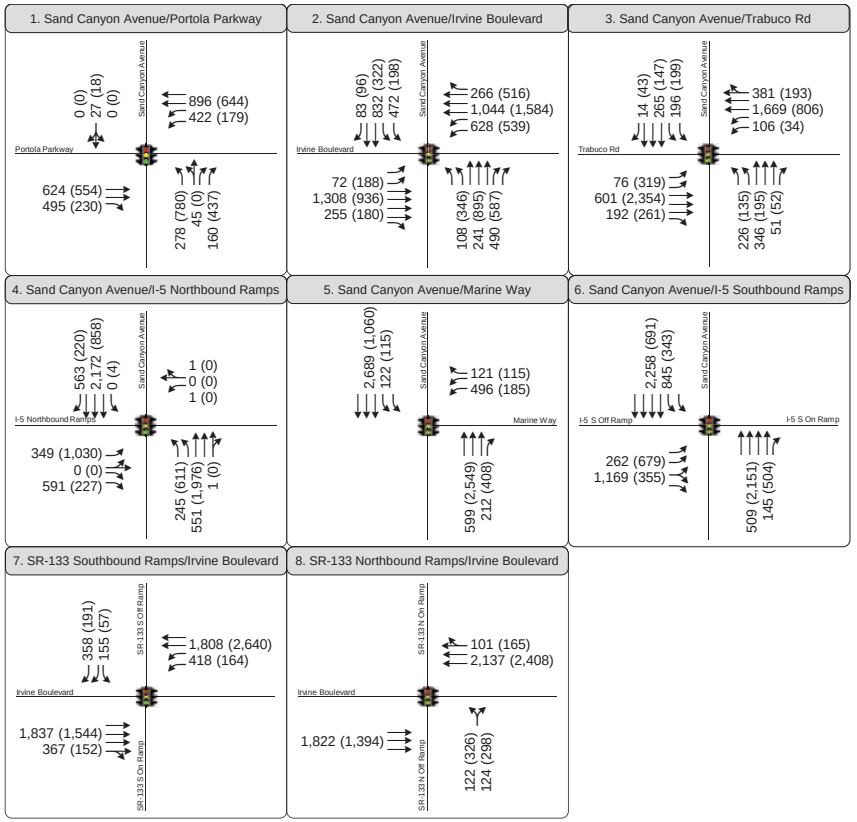
Project Site Syphon Reservoir

XX(XX) AM(PM)

Figure 11b

Short-Term Interim Year Pending Plus Project (Route 1B) Peak Hour Traffic Volumes, Lane Configurations, and Traffic Control





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections

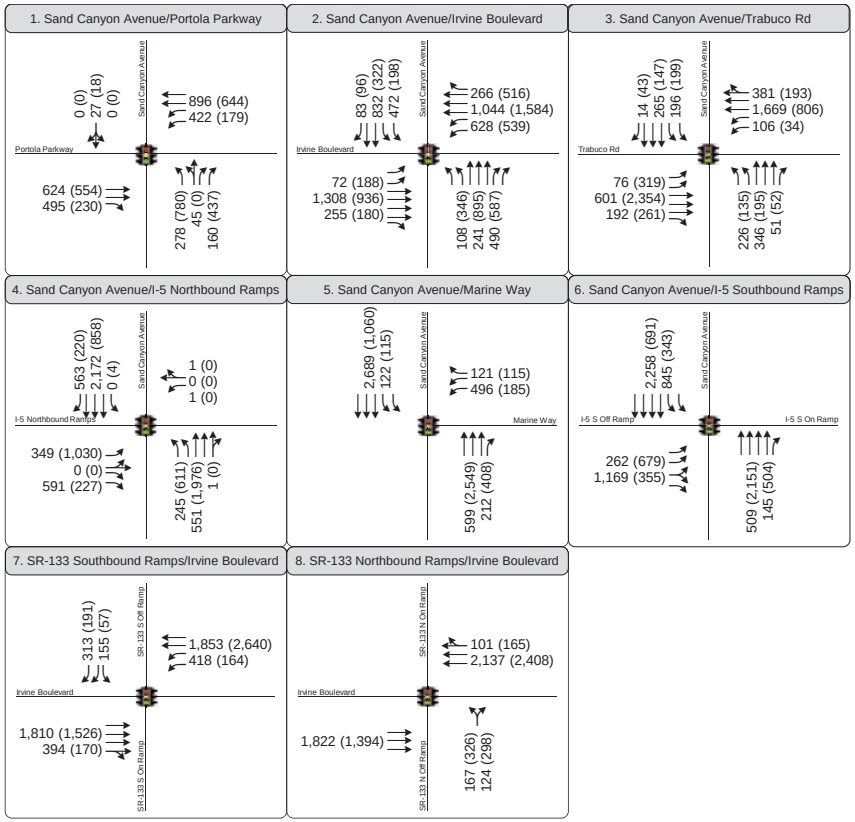
Project Site Syphon Reservoir

XX(XX) AM(PM)

Figure 11c

Short-Term Interim Year Pending Plus Project (Route 2A) Peak Hour Traffic Volumes, Lane Configurations, and Traffic Control





Note: For the purpose of this study Sand Canyon Avenue is regarded as a north-south roadway

Legend

Study Intersections
Project Site Syphon Reservoir
XX(XX) AM(PM)

Figure 11d

Short-Term Interim Year Pending Plus Project (Route 2B) Peak Hour Traffic Volumes, Lane Configurations, and Traffic Control

TABLE 7
SHORT-TERM YEAR APPROVED PLUS PROJECT (ALL ROUTE OPTIONS)
INTERSECTION LEVEL OF SERVICE

ID	N/S Street Name	E/W Street Name	Control Type	Time Period	Short-Term Approved Conditions		Short-Term Approved Plus Project (Route 1A)				Short-Term Approved Plus Project (Route 1B)				Short-Term Approved Plus Project (Route 2A)				Short-Term Approved Plus Project (Route 2B)			
					V/C	LOS	V/C	LOS	Change in V/C	Deficient	V/C	LOS	Change in V/C	Deficient	V/C	LOS	Change in V/C	Deficient	V/C	LOS	Change in V/C	Deficient
1	Sand Canyon Avenue	Portola Parkway	Signalized	AM	0.426	A	0.456	A	0.030	No	0.456	A	0.030	No	0.456	A	0.030	No	0.456	A	0.030	No
				PM	0.488	A	0.499	A	0.011	No	0.499	A	0.011	No	0.499	A	0.011	No	0.499	A	0.011	No
2	Sand Canyon Avenue	Irvine Boulevard	Signalized	AM	0.681	B	0.689	B	0.008	No	0.689	B	0.008	No	0.681	B	0.000	No	0.681	B	0.000	No
				PM	0.635	B	0.635	B	0.000	No	0.635	B	0.000	No	0.640	B	0.005	No	0.640	B	0.005	No
3	Sand Canyon Avenue	Trabuco Road	Signalized	AM	0.580	A	0.589	A	0.009	No	0.589	A	0.009	No	0.580	A	0.000	No	0.580	A	0.000	No
				PM	0.609	B	0.609	B	0.000	No	0.609	B	0.000	No	0.609	B	0.000	No	0.609	B	0.000	No
4	Sand Canyon Avenue	I-5 Northbound Ramps	Signalized	AM	0.630	B	0.630	B	0.000	No	0.648	B	0.018	No	0.630	B	0.000	No	0.630	B	0.000	No
				PM	0.731	C	0.731	C	0.000	No	0.731	C	0.000	No	0.731	C	0.000	No	0.731	C	0.000	No
5	Sand Canyon Avenue	Marine Way	Signalized	AM	0.700	B	0.700	B	0.000	No	0.705	C	0.005	No	0.700	B	0.000	No	0.700	B	0.000	No
				PM	0.641	B	0.641	B	0.000	No	0.641	B	0.000	No	0.641	B	0.000	No	0.641	B	0.000	No
6	Sand Canyon Avenue	I-5 Southbound Ramps	Signalized	AM	0.704	C	0.704	C	0.000	No	0.712	C	0.008	No	0.704	C	0.000	No	0.704	C	0.000	No
				PM	0.610	B	0.610	B	0.000	No	0.615	B	0.005	No	0.610	B	0.000	No	0.610	B	0.000	No
7	SR-133 Southbound Ramps	Irvine Boulevard	Signalized	AM	0.652	B	0.652	B	0.000	No	0.652	B	0.000	No	0.665	B	0.013	No	0.665	B	0.013	No
				PM	0.869	D	0.869	D	0.000	No	0.869	D	0.000	No	0.869	D	0.000	No	0.869	D	0.000	No
8	SR-133 Northbound Off-Ramp	Irvine Boulevard	Signalized	AM	0.544	A	0.544	A	0.000	No	0.544	A	0.000	No	0.544	A	0.000	No	0.569	A	0.025	No
				PM	0.735	C	0.735	C	0.000	No	0.735	C	0.000	No	0.735	C	0.000	No	0.735	C	0.000	No

TABLE 8
SHORT-TERM YEAR PENDING PLUS PROJECT (ALL ROUTE OPTIONS)
INTERSECTION LEVEL OF SERVICE

ID	N/S Street Name	E/W Street Name	Control Type	Time Period	Short-Term Pending Conditions		Short-Term Pending Plus Project (Route 1A)				Short-Term Pending Plus Project (Route 1B)				Short-Term Pending Plus Project (Route 2A)				Short-Term Pending Plus Project (Route 2B)			
					V/C	LOS	V/C	LOS	Change in V/C	Deficient	V/C	LOS	Change in V/C	Deficient	V/C	LOS	Change in V/C	Deficient	V/C	LOS	Change in V/C	Deficient
1	Sand Canyon Avenue	Portola Parkway	Signalized	AM	0.439	A	0.470	A	0.031	No	0.470	A	0.031	No	0.470	A	0.031	No	0.470	A	0.031	No
				PM	0.495	A	0.506	A	0.011	No	0.506	A	0.011	No	0.506	A	0.011	No	0.506	A	0.011	No
2	Sand Canyon Avenue	Irvine Boulevard	Signalized	AM	0.704	C	0.711	C	0.007	No	0.711	C	0.007	No	0.704	C	0.000	No	0.704	C	0.000	No
				PM	0.644	B	0.644	B	0.000	No	0.644	B	0.000	No	0.650	B	0.006	No	0.650	B	0.006	No
3	Sand Canyon Avenue	Trabuco Road	Signalized	AM	0.600	A	0.609	B	0.009	No	0.609	B	0.009	No	0.600	A	0.000	No	0.600	A	0.000	No
				PM	0.618	B	0.618	B	0.000	No	0.618	B	0.000	No	0.618	B	0.000	No	0.618	B	0.000	No
4	Sand Canyon Avenue	I-5 Northbound Ramps	Signalized	AM	0.651	B	0.651	B	0.000	No	0.670	B	0.019	No	0.651	B	0.000	No	0.651	B	0.000	No
				PM	0.743	C	0.743	C	0.000	No	0.743	C	0.000	No	0.743	C	0.000	No	0.743	C	0.000	No
5	Sand Canyon Avenue	Marine Way	Signalized	AM	0.723	C	0.723	C	0.000	No	0.728	C	0.005	No	0.723	C	0.000	No	0.723	C	0.000	No
				PM	0.651	B	0.651	B	0.000	No	0.651	B	0.000	No	0.651	B	0.000	No	0.651	B	0.000	No
6	Sand Canyon Avenue	I-5 Southbound Ramps	Signalized	AM	0.728	C	0.728	C	0.000	No	0.736	C	0.008	No	0.728	C	0.000	No	0.728	C	0.000	No
				PM	0.619	B	0.619	B	0.000	No	0.625	B	0.006	No	0.619	B	0.000	No	0.619	B	0.000	No
7	SR-133 Southbound Ramps	Irvine Boulevard	Signalized	AM	0.674	B	0.674	B	0.000	No	0.674	B	0.000	No	0.687	B	0.013	No	0.687	B	0.013	No
				PM	0.883	D	0.883	D	0.000	No	0.883	D	0.000	No	0.883	D	0.000	No	0.883	D	0.000	No
8	SR-133 Northbound Off-Ramp	Irvine Boulevard	Signalized	AM	0.562	A	0.562	A	0.000	No	0.562	A	0.000	No	0.562	A	0.000	No	0.587	A	0.025	No
				PM	0.746	C	0.746	C	0.000	No	0.746	C	0.000	No	0.746	C	0.000	No	0.746	C	0.000	No

9. Special Issues

This chapter addresses the site access analysis and VMT analysis for the Project.

Site Access Analysis

As part of the Project, a private 2-lane roadway connection from the northern side of the Sand Canyon Avenue and Portola Parkway intersection to the Project site is proposed for construction vehicle access during Project construction and maintenance/operations access during Project operation. This proposal will require reconstruction of the Sand Canyon Avenue and Portola Parkway intersection to accommodate the new northern leg and the associated traffic signals, lane striping, and signage changes. Pedestrian and bicycle infrastructure at the intersection would be reconstructed to maintain access like the existing condition while following the City of Irvine requirements. This improvement assumes the northbound approach at Sand Canyon Avenue and Portola Parkway would be modified from two left-turn lanes and two right-turn lanes to one left-turn lane, one shared through/left-turn lane, and two right-turn lanes. The southbound approach would be constructed with one shared left/through/right-turn lane. Split phasing (a traffic signal operation that gives a green phase for all vehicle movements of one direction followed by a green phase for all movements of the opposite direction) would be incorporated for the northbound and new southbound approaches during construction and typical operations. During construction of the Project, this private roadway would be used by construction trips for ingress and egress of the construction site. Upon completion of the Project, this private roadway would be used by IRWD staff conducting maintenance and inspections as part of typical operations, similar to existing conditions. Trips by IRWD staff to the reservoir are not anticipated to increase as compared to the existing condition and are not considered to have a significant effect on the future intersection operations.

An analysis of the *City of Irvine Transportation Design Procedures* (City of Irvine, February 2007) [TDPs] was conducted to address primary access to the Project. The following TDPs were reviewed at request of the City of Irvine per the approved scope of work.

TDP – 1 Turn Lane Pocket Lengths

TDP – 1 identifies recommended lengths of left-turn pockets using a Nomograph for Left-Turn Storage, which uses inputs sch as the number of left-turning vehicles, cycle length, and truck percentage. Eastbound left-turn pockets are not proposed at the intersection of Sand Canyon Avenue and Portola Parkway as the Project is planning to only modify the northbound and southbound approaches. Therefore TDP – 1 is not applicable to this Project.

TDP – 14 Driveway Lengths

TDP – 14 identifies recommended lengths for driveways to projects based on the number of peak hour trips entering a project site. The Project will construct a 2-lane private roadway from the northern side of the Sand Canyon Avenue and Portola Parkway intersection to the Project site. While plans for this roadway have yet to be submitted, it is estimated that this private roadway will exceed 1,500 feet (ft) from the Sand Canyon Avenue and Portola Parkway intersection to the Project site. Signage indicating the use as a private road will be installed at the intersection and along the roadway. As a private road, access control will be maintained with a gate at least 500 ft away from the intersection. During the construction period this gate will remain open during hours of construction and closed when no construction is occurring. Following construction, the gate will remain closed and only IRWD staff conducting maintenance and inspections as part of typical operations will have access to open the gate. The gate location will provide an area for vehicles to turn around if they do not have access beyond the gate. As peak hour traffic into the Project site is estimated to be 27 vehicles, TDP – 14 recommends a driveway of at least 50 ft. The private road length (greater than 1,500 ft) and distance to the gate (at least 500 ft) exceed the recommendation of 50 feet based on TDP – 14.

TDP – 15 Gate Stacking

TDP – 15 identifies recommendations for vehicle stacking and gate-stacking at project sites. TDP-15 provides recommendations based on different types of land uses for vehicle stacking analysis. As a construction project, none of the examples provided in TDP-15 reflect the Projects' construction management operations or typical conditions of the reservoir following construction. The Project will construct a 2-lane private road with at least 500 ft of distance between the Sand Canyon Avenue and Portola Parkway intersection and a proposed gate. Signage indicating the use as a private road will be installed at the intersection and along the roadway. The proposed gate location will provide an area for vehicles to turn around if they do not have access beyond the gate.

During construction, the gate will remain open during hours of construction and closed when no construction is occurring. With an open gate, the private roadway and internal staging on-site can accommodate vehicle queuing that may be associated with a peak construction activity day.

Following construction, the gate will remain closed and only IRWD staff conducting maintenance and inspections as part of typical operations will have access to open the gate. The trips by IRWD staff will be nominal and are not considered to have a significant effect on the future intersection operations. The proposed gate location and gate operations during typical operations can meet the nominal inbound volume during future operations.

CEQA VMT Impact Analysis

The City of Irvine's *CEQA VMT Impact Analysis Guidelines* identify projects generating fewer than 250 weekday daily trips as requiring no further VMT impact analysis. As identified in Table 3, all phases of construction generate fewer than 250 daily weekday trips. Therefore, it can be determined that all the construction phases do not meet the daily trip screening threshold and require no further VMT impact analysis using the *CEQA VMT Impact Analysis Guidelines*. In addition, many jurisdictions in Southern California have regarded construction-related traffic as causing adverse but not significant impacts because, while sometimes inconvenient, construction-related traffic effects are temporary.

Pedestrian Network Impact Analysis

Disruptions to Existing Facilities

Significance Criteria

The following significance criteria were applied:

> A significant impact occurs if a project disrupts existing pedestrian facilities.

Project Impact

Pedestrian infrastructure at the intersection of Sand Canyon Avenue and Portola Parkway will be reconstructed to maintain existing access while following the City of Irvine requirements. Therefore, it is concluded that the Project impact related to this item is less than significant.

Project Interferes with Planned Pedestrian Facilities

Significance Criteria

The following significance criteria were applied to determine if the Project conflicts with planned facilities:

> A significant impact occurs if a project interferes with planned pedestrian facilities.

Project Impact

Pedestrian infrastructure at the intersection of Sand Canyon Avenue and Portola Parkway will be reconstructed to maintain existing access while following the City of Irvine requirements. The Project will not affect any planned pedestrian facilities in the study area. Therefore, it is concluded that the Project impact related to this item is less than significant.

Project Conflicts with Adopted Pedestrian System Plans, Guidelines, Policies, or Standards

Significance Criteria

A significant impact occurs if a project conflicts or creates inconsistencies with adopted pedestrian system plans, guidelines, policies, or standards.

Project Impact

The Project is consistent with the policies identified in the City of Irvine General Plan Objective B-3: Pedestrian Circulation. The Project will reconstruct pedestrian infrastructure at the intersection of Sand Canyon Avenue and Portola Parkway to maintain existing access while following the City of Irvine requirements. Therefore, it is concluded that the Project impact related to this item is less than significant.

Bicycle Network Impact Analysis

Disruptions to Existing Facilities

Significance Criteria

The following significance criteria were applied:

A significant impact occurs if a project disrupts existing bicycle facilities.

Project Impact

Bicycle infrastructure at the intersection of Sand Canyon Avenue and Portola Parkway will be reconstructed to maintain existing access while following the City of Irvine requirements. Minor improvements to facilitate bicycle circulation such as "BIKES MAY USE FULL LANE" signage, shared arrow advance warning signage,

and other suggested methods that provide advance warning to both vehicular drivers and bicyclists will be coordinated with the City of Irvine staff. Therefore, it is concluded that the Project impact related to this item is less than significant.

Project Interferes with Planned Bicycle Facilities

Significance Criteria

The following significance criteria were applied to determine if the Project conflicts with planned facilities:

> A significant impact occurs if a project interferes with planned bicycle facilities.

Project Impact

Bicycle infrastructure at the intersection of Sand Canyon Avenue and Portola Parkway will be reconstructed to maintain existing access while following the City of Irvine requirements. The Project will not affect any planned bicycle facilities in the study area. Minor improvements to facilitate bicycle circulation such as "BIKES MAY USE FULL LANE" signage, shared arrow advance warning signage, and other suggested methods that provide advance warning to both vehicular drivers and bicyclists will be coordinated with the City of Irvine staff. Therefore, it is concluded that the Project impact related to this item is less than significant.

Project Conflicts with Adopted Bicycle System Plans, Guidelines, Policies, or Standards

Significance Criteria

A significant impact occurs if a project conflicts or creates inconsistencies with adopted bicycle system plans, guidelines, policies, or standards.

Project Impact

The Project is consistent with the policies identified in the City of Irvine General Plan Objective B-4: Bicycle Circulation. The Project will reconstruct bicycle infrastructure at the intersection of Sand Canyon Avenue and Portola Parkway to maintain existing access while following the City of Irvine requirements. Minor improvements to facilitate bicycle circulation such as "BIKES MAY USE FULL LANE" signage, shared arrow advance warning signage, and other suggested methods that provide advance warning to both vehicular

drivers and bicyclists will be coordinated with the City of Irvine staff. Therefore, it is concluded that the Project impact related to this item is less than significant.

Transit System

Disruptions to Existing Transit Service

Significance Criteria

The following significance criteria were applied to determine if the Project is responsible for a disruption of existing transit services or facilities:

> A significant impact occurs if a project disrupts existing transit services or facilities.

Project Impact

As noted in the review of existing transit routes, no transit routes currently run through the study area. Therefore, it is concluded that the Project impact related to this item is less than significant.

Interference with Planned Transit Services

Significance Criteria

The following significance criteria were applied:

> A significant impact occurs if a project interferes with planned transit services or facilities.

Project Impact

As noted in the review of existing transit routes, no transit routes currently run through the study area. Furthermore, the Project does not propose any changes to existing bus pullout along any of the study roadways. Therefore, it is concluded that the Project impact related to this item is less than significant.

Project Conflicts or Creates Inconsistencies with Adopted Transit System Plans, Guidelines, Policies, or Standards

Significance Criteria

The following significance criteria regarding consistency with adopted transit plans, guidelines, policies, or standards were applied:

> A significant impact occurs if a project conflicts or creates inconsistencies with adopted transit system plans, guidelines, policies, or standards.

Project Impact

Based on the review of the Project, it can be concluded that the Project does not conflict with these policies or other policies related to transit. The impact is therefore less than significant, and no mitigation is required.

Demand for Public Transit Services Above Capacity

Significance Criteria

The following significance criteria were applied:

> A significant impact occurs if the project creates demand for public transit service above the capacity which is provided or planned.

Project Impact

The Project is consistent with the policies identified in the City of Irvine General Plan Objective B-6: Public Transit Circulation. Therefore, it is concluded that the Project impact related to this item is less than significant.

CMP Traffic Impact Analysis

The *2015 Orange County Congestion Management Program* (Orange County Transportation Authority, November 2015) [CMP] guidelines require that projects with the potential to create an impact of more than 3% of LOS E capacity on the CMP highway system links should require a traffic impact analysis. All projects generating 2,400 or more daily trips should require evaluation. If a project will have direct access to a CMP link, the threshold is reduced to 1,600 or more daily trips. A traffic impact analysis is not required if one has already been performed for the Project as part of an earlier development approval which takes the impact on the CMP highway system into account.

The nearest OCTA CMP intersection is Irvine Boulevard and SR-133 Northbound ramps. As documented in Table 3, the Project generates less than 1,600 daily trips on a peak construction activity day. Therefore, a CMP traffic impact analysis is not required.

10. Improvements

As part of the Project, a private 2-lane roadway connection from the northern side of the Sand Canyon Avenue and Portola Parkway intersection to the Project site is proposed for construction vehicle access during Project construction and maintenance/operations access during Project operation. This proposal will require reconstruction of the Sand Canyon Avenue and Portola Parkway intersection to accommodate the new northern leg and the associated traffic signals, lane striping, and signage changes. Pedestrian and bicycle infrastructure at the intersection would be reconstructed to maintain access like the existing condition while following the City of Irvine requirements. This improvement assumes the northbound approach at Sand Canyon Avenue and Portola Parkway would be modified from two left-turn lanes and two right-turn lanes to one left-turn lane, one shared through/left-turn lane, and two right-turn lanes. The southbound approach would be constructed with one shared left/through/right-turn lane. Split phasing (a traffic signal phasing that gives a green signal for all vehicle movements of one direction followed by a green signal for all movements of the opposite direction) would be incorporated for the northbound and new southbound approaches during construction and typical operations. During construction of the Project, this private roadway would be used by construction trips for ingress and egress of the construction site. Upon completion of the Project, this private roadway would be used by IRWD staff conducting maintenance and inspections as part of typical operations, similar to existing conditions. Trips by IRWD staff to the reservoir are not anticipated to increase as compared to the existing condition and are not considered to have a significant effect on the future intersection operations.

Based on the results of the analysis and in accordance with the adopted *Traffic Impact Analysis Guidelines*, no significant impacts or intersection deficiencies were identified as part of this Project and therefore no improvements are required.

While no significant impacts were identified as part of this study, the following measures are recommended to alleviate the potential effect of construction traffic:

- Off-site truck staging, if required, shall be provided in a legal area furnished by the contractor. Trucks shall not be permitted to travel along local residential streets.
- To the extent feasible, deliveries and pick-ups of construction materials should be scheduled during non-peak travel periods and coordinated to reduce the potential of trucks waiting to load or unload for protracted periods of time.
- Access shall remain unobstructed for land uses in proximity to the Project site during Project construction.
- Full-time lane or sidewalk closures are not anticipated for the Project. Temporary lane or sidewalk closures, when needed, shall be scheduled to avoid peak commute hours and peak school drop-off and pick-up hours to the extent possible. In the event of a lane or sidewalk closure, a worksite traffic control plan, approved by the City of Irvine, shall be implemented to route traffic or pedestrians around any such lane or sidewalk closures.

11. Conclusion

The purpose of this study is to evaluate the temporary transportation impacts associated with the Syphon Reservoir Improvement Project in Irvine, California. The following summarizes the results of this analysis:

- The Project proposes to increase the capacity of the existing Syphon Reservoir and replace the existing engineered dam with a new and larger engineered dam. The Project would be implemented within the IRWD service area at the location of the existing Syphon Reservoir, northeast of Portola Parkway between Bee Canyon Access Road and SR-133.
- As part of the Project, a private 2-lane roadway connection from the northern side of the Sand Canyon Avenue and Portola Parkway intersection to the Project site is proposed for construction vehicle access during Project construction and maintenance/operations access during Project operation.
- The scope of the traffic analysis, methodology assumptions, and selection of study intersections was developed in consultation with City of Irvine staff and documented in the Scope of Work for Irvine Ranch Water District (IRWD) Syphon Reservoir Construction Transportation Impact Analysis dated June 29, 2020.
- The study intersections selected represent the intersections where construction traffic is proposed to travel through. Four routes are proposed for the Project.
- On a peak construction activity day, approximately 232 daily trips are estimated, of which 36 trips (27 inbound/9 outbound) would occur during the AM peak hour and 18 trips (0 inbound/18 outbound) would occur during the PM peak hour. For the purpose of the intersection LOS analysis, the trip generation estimates were converted to PCE which resulted in approximately 512 daily PCE trips are estimated, of which 72 PCE trips (45 inbound/27 outbound) would occur during the AM peak hour and 18 PCE trips (0 inbound/18 outbound) would occur during the PM peak hour on the same peak construction activity day.
- The LOS analyses for all Existing Plus Project routes, Short-Term Interim Year Approved plus Project, and Short-Term Interim Year Pending plus Project that the Project would have no deficiencies at any study intersection. Therefore, no intersection improvements to address intersection deficiencies would be required.
- Based on the daily trip generation on a peak construction activity day, the Project does not meet the daily trip screening threshold and does not require further VMT impact analysis.
- The Project does not have a significant impact on the pedestrian, bicycle, or transit network.

Appendix A:
Scope of Work for Irvine Ranch Water District (IRWD) Syphon Reservoir Construction Transportation Impact Analysis

FEHR PEERS

MEMORANDUM

Date: June 29, 2020

To: Justin Equina, City of Irvine

CC: Jennifer Jacobus, PhD, ESA
Jo Ann Corey, Irvine Ranch Water District

From: Spencer Reed, PE and Ethan Yue Sun, PhD

Subject: Scope of Work for Irvine Ranch Water District (IRWD) Syphon Reservoir Construction Transportation Impact Analysis

OC18-0553

Fehr & Peers has been retained by ESA to assist with the transportation impact analysis for construction of the Irvine Ranch Water District (IRWD) Syphon Reservoir Project (Project) located near the intersection of Sand Canyon Avenue and Portola Parkway. Based on the City of Irvine's Traffic Study Guidelines (City of Irvine, August 2004, Updated 2020), this project is required to evaluate the impacts associated with construction of the Project. As the Project is anticipated to generate less than 50 peak hour trips (see trip generation section below), a Limited Scope Traffic Impact Analysis (TIA) will be prepared to evaluative short-term interim-year conditions and satisfy the City's analysis requirements.

The purpose of this memorandum is to document the methodologies and assumptions which will be used in the transportation impact analysis so there is an opportunity to approve the approach prior to preparing the traffic study. This Limited Scope TIA will include the following sections.

I. Executive Summary

This section will provide a summary of the project description and the analysis results. Any mitigations recommended as part of the project will also be included, if necessary.

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II. Introduction

This section will describe the project, outline the Limited Scope TIA, and include the following sections:

Project Site

The Project proposes to increase the capacity of the existing Syphon Reservoir and replace the existing engineered dam with a new and larger engineered dam. The Project would allow the storage of additional recycled water produced at the Michelson WRP during periods of low demand (winter months) for use during periods of high demand (summer months). The Project would expand the reservoir's storage capacity from the current 500 Acre-Feet (AF) to approximately 5,000 AF and would help IRWD become more self-sufficient by reducing its dependence on costly and less-reliable imported water from both Northern California and the Colorado River. The Project would help IRWD to store more drought-proof recycled water during summer months and support the increased use of recycled water for public landscaping, agricultural, business and industrial uses. Every gallon of recycled water IRWD uses for non-drinking water purposes saves a gallon of drinking water, helping the region's existing and planned future development to better withstand future water shortages. By reducing IRWD's dependence on costly imported water, the Project would allow IRWD to replace an expensive source of water for one that is less expensive and a drought-resilient supply, which increases IRWD's water supply reliability.

The Project would be implemented within the IRWD service area at the location of the existing Syphon Reservoir, northeast of Portola Parkway between Bee Canyon Access Road and SR-133 in the County of Orange. The Crean Lutheran High School Athletic Complex is located between Portola Parkway and the toe of the existing dam. Residential neighborhoods are located on the southwest side of Portola Parkway.

As part of the Project, a private 2-lane roadway connection from the northern side of the Sand Canyon Avenue and Portola Parkway intersection to the Project site is proposed for construction vehicle access. This proposal will require reconstruction of the Sand Canyon Avenue and Portola Parkway intersection to accommodate the new northern leg and the associated traffic signals, lane striping, and signage changes. During the Project, this private roadway will be used by construction trips for ingress and egress of the construction site. Upon completion of the Project, this private roadway will be used by IRWD staff conducting maintenance and inspections as part of typical

operations. The trips by IRWD staff will be nominal and are not considered to have a significant effect on the future intersection operations.

Study Area Boundary

The study intersections selected represent the intersections where construction traffic is proposed to travel through. Two route options are proposed for the Project. Route Option 1 will be SR-133, north on Irvine Boulevard, and east on Sand Canyon Avenue for trucks traveling inbound and westbound on Sand Canyon Avenue and south on Irvine Boulevard to SR-133 for trucks traveling outbound. Route Option 2 will be I-5, east on Sand Canyon Avenue for trucks traveling inbound and westbound on Sand Canyon Avenue to I-5 for trucks traveling outbound. As presented in Figure 1, the following intersections have been selected for study:

1. Sand Canyon Avenue & Portola Parkway
2. Sand Canyon Avenue & Irvine Boulevard
3. Sand Canyon Avenue & Trabuco Rd
4. Sand Canyon Avenue & I-5 Northbound Ramps
5. Sand Canyon Avenue & Marine Way
6. Sand Canyon Avenue & I-5 Southbound Ramps
7. SR-133 Southbound Ramps & Irvine Boulevard
8. SR-133 Northbound Off-Ramp & Irvine Boulevard

Data Collection

Due to emergence of COVID-19 in southern California and the decision of local schools to end on-campus classes for the 2019-2020 academic year, it is not recommended to collect existing intersection counts in the study area. However, the City of Irvine has agreed to provide the most recent intersection counts available that can be used to estimate 2020 intersection volumes. As prescribed by the City of Irvine, a growth factor of 2% per year will be applied to previously counts collected to develop 2020 intersection volumes for the AM and PM peak hours.

III. Existing Conditions

Existing Lane Uses

Existing land uses on site will be identified. The existing site is the IRWD syphon reservoir.

Existing Roadways and Intersections

Fehr & Peers will collect the following information in a field visit to the study area:

- Lane & intersection configurations
- Traffic signal locations
- Signal phasing
- Land uses in the study area
- Existing pedestrian and bicycle facilities
- Transit service

IV. Performance Criteria

The performance criteria to determine potential impacts and mitigations will be consistent with the City's criteria, as outlined in the Traffic Study Guidelines. The City's Transportation Design Procedures (TDP) adopted February 2007 will be used as the performance criteria to evaluate the design features of the project access.

V. Proposed Project Impacts

Trip Generation

Construction of the Project is estimated to be approximately 41 months, depending on weather conditions and other variables. Construction is currently anticipated to begin in the Fall of 2022. Most construction activities would be limited to 7:00 AM to 4:00 PM Monday through Friday. Construction of the Project would include activities implemented in phases as outlined below.

- Access Routes/Intersection Improvements
- Excavation of Sediment/Existing Dam
- Construction of Dam/Spillway/Reservoir
- Construction of Filtration/Chlor/Dechlor Facilities
- Wetlands/Riparian Installation
- Installation of Recreation Facilities
- Demobilization

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Construction Vehicle Type

Haul Trucks

Hauling hours are anticipated to be 7:00 AM to 3:00 PM on weekdays. During the peak trip period, approximately 52 material delivery trucks would enter and exit the site per workday for approximately twelve months. During other times of construction, material deliveries would be expected in the range of 5 to 10 material delivery trucks per day. These trucks are assumed to arrive and depart evenly between 7:00 AM and 3:00 PM during an 8-hour shift.

Equipment and Delivery Trucks

In addition to haul trucks, the site is also expected to generate equipment and delivery trucks during each phase of construction. These materials would be delivered to the site and stored on-site. These deliveries are expected to occur in a variety of vehicles including small delivery trucks to cement mixer trucks and 18-wheel trucks. Additionally, construction equipment would also have to be delivered to the site. This equipment could include bulldozers, excavators, and other large items of machinery. Most of the heavy equipment is expected to be transported to the site on large trucks such as 18-wheelers or other similar vehicles. These trucks are assumed to arrive and depart evenly between 7:00 AM and 3:00 PM during an 8-hour shift.

Employee Vehicles

The number of construction workers would vary throughout the construction period. Parking for all construction workers will be provided on-site. Construction workers are assumed to arrive in single occupant vehicles.

Construction Period Trip Generation

Based on the aforementioned information, a construction period trip generation analysis was conducted to estimate daily, morning, and evening peak hour trips of the phase with the highest trip generation potential. As seen in Table 1, the construction of Dam/Spillway/Reservoir phase represents the day with the highest trip generation potential with approximately 116 vehicles.

Construction workers often travel to and from a worksite outside of the typical peak commute hours. Construction hours are anticipated to occur from 7:00 AM to 4:00 PM, with most worker trips and truck trips anticipated to occur outside of the AM and PM peak hours. For the purpose of the analysis, it was assumed that up to 40% of the construction workers would arrive at the construction

site during the peak morning commute hour and up to 40% would depart the construction site during the peak evening commute hour. Equipment trucks were assumed to arrive and depart evenly between 7:00 AM and 3:00 PM during an 8-hour shift.

Table 1 presents a summary of the construction trip generation on a peak day. As shown, on a peak construction activity day, approximately 232 daily trips are estimated, of which 36 trips (27 inbound/9 outbound) would occur during the AM peak hour and 18 trips (0 inbound/18 outbound) would occur during the PM peak hour. This trip generation is anticipated to occur for approximately two to three months. Trip generation outside of this phase would be reduced with approximately 30 daily to 154 daily trips being generated.

Adjustments to Trip Generation

No adjustments to the trip generation shall be made without prior written approval from the City.

Trip Distribution and Assignment

Two route options are proposed for the Project. Route Option 1 will be SR-133, north on Irvine Boulevard, and east on Sand Canyon Avenue for trucks traveling inbound and westbound on Sand Canyon Avenue and south on Irvine Boulevard to SR-133 for trucks traveling outbound. Route Option 2 will be I-5, east on Sand Canyon Avenue for trucks traveling inbound and westbound on Sand Canyon Avenue to I-5 for trucks traveling outbound.

Phasing

The proposed project will be constructed in a single phase and is assumed to be operational by early 2026.

Vehicle Miles Traveled Methodology and Approach

On September 27, 2013, Governor Jerry Brown signed Senate Bill (SB) 743 into law and started a process that will fundamentally change transportation impact analysis conducted as part of California Environmental Quality Act (CEQA) compliance. The Governor's Office of Planning and Research (OPR) was charged with developing new guidelines for evaluating transportation impacts under CEQA using methods that no longer focus on measuring automobile delay and level of service (LOS).

Sun-Sun T. Murillo 7/2/20

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OPR issued proposed updates to the CEQA guidelines in support of these goals in November 2017 and a supporting technical advisory in December 2018. The updates establish vehicle miles traveled (VMT) as the metric for evaluating a project's environmental impacts on the transportation system. Lead agencies, including the City of Irvine, have until July 1, 2020 to implement these new requirements. On June 23, 2020, the City of Irvine adopted the CEQA VMT Impact Analysis Guidelines. This project will include a VMT impact analysis section that follows the adopted CEQA VMT Impact Analysis Guidelines.

The City of Irvine's guidelines identify projects generating fewer than 250 daily trips as being screened out of VMT analysis. As identified in Table 1, all phases of construction have a daily trip generation less than 250 trips. Therefore, it can be assumed that all of the construction phases could be screened out of conducting a VMT analysis using the City of Irvine draft guidelines.

Many jurisdictions in Southern California have regarded construction-related traffic as causing adverse but not significant impacts because, while sometimes inconvenient, construction-related traffic effects are temporary. Therefore, due to all phases meeting the daily trip screening threshold of the City of Irvine and the temporary nature of the one phase that exceeds the threshold, this Project can be considered to be exempt from VMT and the traffic study will include a CEQA VMT Impact Analysis section and provide justification on how the project is exempt from VMT analysis.

Intersection Level of Service Analysis Methodology and Approach

The Intersection Capacity Utilization (ICU) methodology will be used to evaluate the intersection level of service (LOS) under the analysis scenarios identified below. The LOS will be reported at the study intersection for the AM and PM peak hours.

In addition, the Project's effect to non-automotive transportation will be evaluated based on the Project's consistency with existing or planned facilities in the study area

The following six scenarios will be analyzed:

- Existing Conditions – estimated intersection counts will be analyzed.
- Existing plus Project Conditions – the proposed construction trip generation (in passenger car equivilance) and route assignment estimates will be added to the Existing Conditions. Buildout of a private roadway connection from the northern side of the Sand Canyon Avenue and Portola Parkway intersection to the Project site will be included.

Sun-Sun T. Murillo 7/2/20
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- Short-Term Interim Year Approved Basline Conditions – the future (Short-Term Interim Year) conditions will be developed based on the latest verision of the Irvine Traffic Analysis Model (ITAM). Short-Term Interim Year Baseline Approved peak hour traffic volumes will be extracted for the study itnersections.

- Short-Term Interim Year Approved Baseline plus Project Conditions – the proposed construction trip generation (in passenger car equivilance) and route assignment estimates will be added to the Short-Term Interim Year Approved Basline Conditions . Buildout of a private roadway connection from the northern side of the Sand Canyon Avenue and Portola Parkway intersection to the Project site will be included.

- Short-Term Interim Year Pending Basline Conditions – the future (Short-Term Interim Year) conditions will be developed based on the latest verision of ITAM. Short-Term Interim Year Baseline Pending peak hour traffic volumes will be extracted for the study itnersections.

- Short-Term Interim Year Pending Baseline plus Project Conditions – the proposed construction trip generation (in passenger car equivilance) and route assignment estimates will be added to the Short-Term Interim Year Pending Basline Conditions . Buildout of a private roadway connection from the northern side of the Sand Canyon Avenue and Portola Parkway intersection to the Project site will be included.

The following parameters will be used in our operations analysis:

- Manual assignment of project trips added to the estimated intersection count volumes.
- Vistro v7.0 software and ICU methodology to analyze signalized study intersections.
- Volume to capacity (V/C) ratios and the associated LOS will be reported for the signalized Irvine study intersections under the ICU methodology.
- A VMT analysis will be prepared in accordance with adopted Traffic Impact Analysis Guidelines in effect at the time of project approval.
- Per the City of Irvine Traffic Impact Analysis Guidelines, lane capacities of 1,700 per hour per lane for through and turn lanes will be used for all volume/capacity calculations.
- Per the City of Irvine Traffic Impact Analysis Guidelines, lost time of 0.05 added to ICU calculation. Lost time represents the time in which no vehicles can pass through the intersection despite having a green signal (i.e. the delay from the driver in moving the vehicle as the signal changes from red to green)
- Inclusion of proposed private roadway under Plus Project condition

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VI. Special Analyses/Issues

Access Analysis

An analysis of the City's Transportation Design Procedures (TDPs) will be conducted for the primary access intersection (Sand Canyon Avenue/Portola) of the IRWD Syphon Reservoir. The TIA will identify the proposed lane geometry at this intersection to reflect this new access. The project is also responsible for restriping and other physical improvements necessary to implement the new access.

The specific TDPs to be evaluated include:

- TDP-1 (Turn lane pocket length) on eastbound Portola Parkway, if an eastbound left-turn lane is proposed
- TDP -14 (Driveway Lengths)
- TDP-15 (Gate Stacking), if applicable.

VII. Required Mitigation Measures

Based on the results and in accordance with the adopted Traffic Impact Analysis Guidelines, physical, operational, and alternative improvements required to mitigate unacceptable impacts due to the proposed project will be identified and analyzed.

VIII. Conclusions

A summary of the six analyzed scenarios, along with estimated effects of the mitigations, will be included in the TIA.

IX. Revisions to the Analysis

After a review and consolidated comments by city staff, Fehr & Peers will prepare one round of revisions to the TIA.

X. Signature

The TIA will be prepared under the supervision of, and signed, stamped, and dated by a registered traffic engineer or a registered professional civil engineer.

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Figure 1

Study Interesections

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TABLE 1
CONSTRUCTION PERIOD TRIP GENERATION

Phase	Duration (Months)	Peak Day Activity Under Each Phase			Total Vehicles	Total Daily Vehicle Trips
		Haul Trucks	Equipment and Delivery Trucks	Employee Vehicles		
Access Routes/Intersecction Improvements	5	8	3	10	21	42
Excavation of Sediment/ Existing Dam	6.6	0	6	31	37	74
Construction of Dam/Spillway/Reservoir	13.8	52	18	46	116	232
Construction of Filtration/Chlor/Dechlor Facility	12	0	29	48	77	154
Wetlands/Riparian Installation	12	0	5	20	25	50
Installation of Recreation Facilities	3	0	5	10	15	30
Demobilization	1	0	7	15	22	44

Construction of Dam/Spillway/Reservoir Trip Generation							
Trip Type	Daily Trips [a]	Morning Peak Hour Trips			Evening Peak Hour Trips		
		In	Out	Total	In	Out	Total
Haul Truck Trips [b]	104	7	7	14	0	0	0
Delivery and Equipment Truck Trips [b]	36	2	2	4	0	0	0
Construction Worker Trips [c]	92	18	0	18	0	18	18
Phase Total	**232**	**27**	**9**	**36**	**0**	**18**	**18**

Notes:

[a] - Daily trips were calculated by counting two trips, one inbound and one outbound trip for each vehicle

[b] - Daily haul and delivery/equipment truck trips were assumed to occur evenly throughout an 8-hour construction day. Therefore, the daily truck trips were divided by 8 hours to calculate morning and evening peak hour truck trips.

[c] - Up to 40% of the construction workers were assumed to arrive during the morning peak hour of adjacent street traffic. A total of up to 40% worker were assumed to depart during the evening peak hour.

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7/2/20

Appendix B:
Traffic Counts

Location: Irvine
N/S: Sand Canyon Avenue
E/W: Portola Parkway

ITAM: 300
Date: 3/27/2018
Day: Tuesday

TOTAL VEHICLES

	Sand Canyon Avenue Southbound			Portola Parkway Westbound			Sand Canyon Avenue Northbound			Portola Parkway Eastbound			
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
6:30 AM	0	0	0	47	26	0	10	0	28	0	92	67	270
6:45 AM	0	0	0	38	38	0	31	0	28	0	92	71	298
7:00 AM	0	0	0	58	68	0	32	0	16	0	98	82	354
7:15 AM	0	0	0	54	115	0	36	0	18	0	106	89	418
7:30 AM	0	0	0	114	223	0	69	0	29	0	82	105	622
7:45 AM	0	0	0	81	181	0	74	0	32	0	149	108	625
8:00 AM	0	0	0	72	138	0	37	0	35	0	155	87	524
8:15 AM	0	0	0	62	157	0	37	0	29	0	101	86	472
8:30 AM	0	0	0	95	140	0	43	0	32	0	117	78	505
8:45 AM	0	0	0	75	106	0	45	0	34	0	88	48	396
TOTAL VOLUMES:	0	0	0	696	1192	0	414	0	281	0	1080	821	4484

AM Peak Hr Begins at: 730 AM

	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
PEAK VOLUMES:	0	0	0	329	699	0	217	0	125	0	487	386	2243

PEAK HR FACTOR:	0.000	0.763	0.807	0.849	0.897

TOTAL VEHICLES

	Sand Canyon Avenue Southbound			Portola Parkway Westbound			Sand Canyon Avenue Northbound			Portola Parkway Eastbound			
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
4:00 PM	0	0	0	35	124	0	99	0	67	0	72	30	427
4:15 PM	0	0	0	40	117	0	152	0	65	0	73	46	493
4:30 PM	0	0	0	36	115	0	134	0	74	0	86	45	490
4:45 PM	0	0	0	37	127	0	160	0	79	0	76	37	516
5:00 PM	0	0	0	35	109	0	170	0	71	0	89	48	522
5:15 PM	0	0	0	31	131	0	171	0	99	0	102	47	581
5:30 PM	0	0	0	32	133	0	165	0	90	0	139	55	614
5:45 PM	0	0	0	44	138	0	113	0	87	0	110	33	525
6:00 PM	0	0	0	29	109	0	130	0	103	0	108	33	512
6:15 PM	0	0	0	37	110	0	100	0	76	0	120	26	469
6:30 PM	0	0	0	33	70	0	81	0	90	0	68	21	363
6:45 PM	0	0	0	37	73	0	57	0	85	0	105	23	380
TOTAL VOLUMES:	0	0	0	426	1356	0	1532	0	986	0	1148	444	5892

PM Peak Hr Begins at: 500 PM

	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
PEAK VOLUMES:	0	0	0	142	511	0	619	0	347	0	440	183	2242

PEAK HR FACTOR:	0.000	0.897	0.894	0.803	0.913

Counts Unlimited
P.O. Box 1178
Corona, CA 92878
(951) 268-6268

Location: Irvine
N/S: Sand Canyon Avenue
E/W: Irvine Boulevard

ITAM: 301
Date: 3/27/2018
Day: Tuesday

TOTAL VEHICLES

	Sand Canyon Avenue Southbound			Irvine Boulevard Westbound			Sand Canyon Avenue Northbound			Irvine Boulevard Eastbound			
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
7:00 AM	106	137	24	102	168	31	29	43	102	10	275	46	1073
7:15 AM	107	152	12	119	238	48	18	46	111	11	280	56	1198
7:30 AM	70	191	17	143	259	58	22	41	80	17	235	50	1183
7:45 AM	64	169	12	126	149	35	15	58	89	18	230	47	1012
8:00 AM	39	95	15	112	153	33	15	53	96	15	188	31	845
8:15 AM	60	133	19	119	103	61	19	46	89	25	131	40	845
8:30 AM	57	93	13	79	120	34	16	62	69	10	140	25	718
8:45 AM	50	79	9	84	101	21	17	47	66	12	136	43	665
TOTAL VOLUMES:	553	1049	121	884	1291	321	151	396	702	118	1615	338	7539

AM Peak Hr Begins at: 700 AM

	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
PEAK VOLUMES:	347	649	65	490	814	172	84	188	382	56	1020	199	4466

PEAK HR FACTOR:	0.954	0.802	0.934	0.919	0.932

TOTAL VEHICLES

	Sand Canyon Avenue Southbound			Irvine Boulevard Westbound			Sand Canyon Avenue Northbound			Irvine Boulevard Eastbound			
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
4:00 PM	45	64	17	107	291	105	69	173	112	40	166	29	1218
4:15 PM	31	62	21	85	368	119	52	191	126	21	177	30	1283
4:30 PM	37	59	20	116	306	93	76	184	107	44	204	38	1284
4:45 PM	30	71	18	120	293	93	78	163	121	44	196	46	1273
5:00 PM	26	56	17	108	257	90	47	163	116	43	163	44	1130
5:15 PM	26	65	8	97	279	62	42	141	113	33	196	33	1095
5:30 PM	25	67	18	71	212	66	47	121	116	40	174	35	992
5:45 PM	22	62	19	98	168	43	45	105	88	30	150	35	865
6:00 PM	18	86	11	81	121	32	50	158	112	32	145	28	874
6:15 PM	19	60	15	87	127	41	36	102	72	42	132	28	761
6:30 PM	21	55	18	53	80	31	41	83	79	40	133	30	664
6:45 PM	11	47	13	75	77	25	34	76	69	32	124	30	613
TOTAL VOLUMES:	311	754	195	1098	2579	800	617	1660	1231	441	1960	406	12052

PM Peak Hr Begins at: 400 PM

	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
PEAK VOLUMES:	143	256	76	428	1258	410	275	711	466	149	743	143	5058

PEAK HR FACTOR:	0.942	0.916	0.984	0.905	0.985

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Location: Irvine
N/S: Sand Canyon Avenue
E/W: Trabuco Road

ITAM: 302
Date: 3/27/2018
Day: Tuesday

TOTAL VEHICLES

	Sand Canyon Avenue Southbound			Trabuco Road Westbound			Sand Canyon Avenue Northbound			Trabuco Road Eastbound			
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
5:30 AM	6	3	1	5	73	2	5	5	2	0	65	19	186
5:45 AM	5	3	4	10	106	8	13	4	0	1	92	28	274
6:00 AM	8	1	2	11	120	5	6	1	1	4	120	46	325
6:15 AM	11	18	3	9	143	7	15	2	1	1	150	73	433
6:30 AM	7	13	3	11	212	3	31	7	4	2	141	89	523
6:45 AM	10	16	1	17	251	6	27	9	5	4	160	93	599
7:00 AM	8	13	1	12	258	9	35	12	3	8	133	65	557
7:15 AM	11	14	1	13	335	24	44	12	8	10	141	39	652
7:30 AM	29	19	3	11	365	25	49	26	10	9	111	43	700
7:45 AM	19	26	4	18	400	68	46	44	11	11	110	35	792
8:00 AM	35	54	4	19	288	73	41	65	10	15	117	50	771
8:15 AM	38	53	2	38	317	55	48	55	13	11	116	56	802
8:30 AM	31	45	2	13	337	91	40	98	9	24	118	21	829
8:45 AM	49	55	3	13	360	78	47	52	8	9	118	23	815
TOTAL VOLUMES:	256	327	29	185	3386	444	429	383	83	108	1535	633	7798

AM Peak Hr Begins at: 800 AM

	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
PEAK VOLUMES:	153	207	11	83	1302	297	176	270	40	59	469	150	3217

PEAK HR FACTOR:	0.867	0.932	0.827	0.926	0.970

TOTAL VEHICLES

	Sand Canyon Avenue Southbound			Trabuco Road Westbound			Sand Canyon Avenue Northbound			Trabuco Road Eastbound			
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
4:00 PM	32	35	8	11	132	29	20	42	15	32	312	37	705
4:15 PM	20	21	8	9	150	19	26	33	15	35	402	37	775
4:30 PM	29	23	7	11	130	20	27	27	12	38	369	49	742
4:45 PM	29	25	11	13	127	58	16	35	7	46	421	44	832
5:00 PM	50	34	6	3	167	33	19	45	13	43	430	40	883
5:15 PM	38	30	10	11	146	25	35	34	11	73	456	54	923
5:30 PM	32	29	11	5	168	46	25	43	9	84	528	63	1043
5:45 PM	38	24	7	8	159	49	28	33	8	53	455	50	912
6:00 PM	33	29	9	15	167	51	22	26	13	33	385	55	838
6:15 PM	27	24	5	9	129	27	29	23	13	39	410	67	802
6:30 PM	34	32	7	12	171	41	21	22	14	27	385	43	809
6:45 PM	29	21	1	6	166	21	22	22	10	18	310	56	682
TOTAL VOLUMES:	391	327	90	113	1812	419	290	385	140	521	4863	595	9946

PM Peak Hr Begins at: 500 PM

	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
PEAK VOLUMES:	158	117	34	27	640	153	107	155	41	253	1869	207	3761

PEAK HR FACTOR:	0.858	0.936	0.947	0.863	0.901

Counts Unlimited
P.O. Box 1178
Corona, CA 92878
(951) 268-6268

Location: Irvine
N/S: Sand Canyon Avenue
E/W: I-5 NB Ramps

ITAM: 303
Date: 5/22/2018
Day: Tuesday

TOTAL VEHICLES

	Sand Canyon Avenue Southbound			I-5 NB Ramps Westbound			Sand Canyon Avenue Northbound			I-5 NB Ramps Eastbound			
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
7:00 AM	2	233	132	0	0	0	39	132	0	56	0	61	655
7:15 AM	1	356	152	1	1	0	41	121	1	67	0	72	813
7:30 AM	2	387	122	1	2	0	49	97	0	79	0	82	821
7:45 AM	0	447	95	0	0	0	42	111	0	73	0	131	899
8:00 AM	0	411	114	1	0	0	45	114	0	79	0	122	886
8:15 AM	0	436	105	0	0	0	42	99	1	53	0	95	831
8:30 AM	0	400	125	0	0	1	62	106	0	67	0	113	874
8:45 AM	0	428	128	0	0	0	51	120	0	49	0	102	878
TOTAL VOLUMES:	5	3098	973	3	3	1	371	900	2	523	0	778	6657

AM Peak Hr Begins at: 745 AM

	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
PEAK VOLUMES:	0	1694	439	1	0	1	191	430	1	272	0	461	3490

PEAK HR FACTOR:	0.984	0.500	0.926	0.898	0.971

TOTAL VEHICLES

	Sand Canyon Avenue Southbound			I-5 NB Ramps Westbound			Sand Canyon Avenue Northbound			I-5 NB Ramps Eastbound			
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
4:00 PM	0	199	68	5	2	0	110	273	0	133	0	39	829
4:15 PM	0	182	53	1	1	0	107	309	0	143	0	54	850
4:30 PM	0	179	43	4	1	0	108	313	0	163	0	43	854
4:45 PM	1	181	34	0	1	0	106	275	0	202	0	61	861
5:00 PM	0	158	34	0	0	0	135	303	1	205	0	43	879
5:15 PM	0	169	49	0	0	0	149	440	0	184	0	48	1039
5:30 PM	0	166	40	0	0	0	99	348	0	219	0	48	920
5:45 PM	3	185	34	0	0	0	114	404	0	207	0	46	993
6:00 PM	0	161	52	0	0	0	123	377	0	208	0	38	959
6:15 PM	0	163	56	1	0	0	139	379	1	170	0	48	957
6:30 PM	1	147	69	2	1	0	103	326	0	199	0	41	889
6:45 PM	0	139	69	0	0	0	122	296	8	150	0	52	836
TOTAL VOLUMES:	5	2029	601	13	6	0	1415	4043	10	2183	0	561	10866

PM Peak Hr Begins at: 515 PM

	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
PEAK VOLUMES:	3	681	175	0	0	0	485	1569	0	818	0	180	3911

PEAK HR FACTOR:	0.967	0.000	0.872	0.934	0.941

Counts Unlimited
P.O. Box 1178
Corona, CA 92878
(951) 268-6268

Location: Irvine
N/S: Sand Canyon Avenue
E/W: Marine Way

ITAM: 304
Date: 5/24/2018
Day: Thursday

	Sand Canyon Avenue Southbound			Marine Way Westbound			Sand Canyon Avenue Northbound			Marine Way Eastbound			
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
7:00 AM	17	298	0	44	0	16	0	153	78	0	0	0	606
7:15 AM	14	345	0	45	0	23	0	143	58	0	0	0	628
7:30 AM	19	465	0	75	0	29	0	135	39	0	0	0	762
7:45 AM	24	542	0	79	0	25	0	117	38	0	0	0	825
8:00 AM	17	489	0	93	0	26	0	118	50	0	0	0	793
8:15 AM	29	584	0	108	0	30	0	86	40	0	0	0	877
8:30 AM	26	486	0	92	0	20	0	134	34	0	0	0	792
8:45 AM	23	538	0	94	0	18	0	129	41	0	0	0	843
TOTAL VOLUMES:	169	3747	0	630	0	187	0	1015	378	0	0	0	6126

AM Peak Hr Begins at: 800 AM

	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
PEAK VOLUMES:	95	2097	0	387	0	94	0	467	165	0	0	0	3305
PEAK HR FACTOR:	0.894			0.871			0.929			0.000			0.942

	Sand Canyon Avenue Southbound			Marine Way Westbound			Sand Canyon Avenue Northbound			Marine Way Eastbound			
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
4:00 PM	30	171	0	51	0	23	0	313	43	0	0	0	631
4:15 PM	16	222	0	41	0	28	0	431	48	0	0	0	786
4:30 PM	25	189	0	51	0	18	0	382	52	0	0	0	717
4:45 PM	42	205	0	33	0	24	0	431	67	0	0	0	802
5:00 PM	20	207	0	36	0	29	0	471	83	0	0	0	846
5:15 PM	23	207	0	38	0	21	0	599	68	0	0	0	956
5:30 PM	27	170	0	36	0	18	0	503	71	0	0	0	825
5:45 PM	21	258	0	37	0	23	0	451	102	0	0	0	892
6:00 PM	23	166	0	38	0	23	0	492	98	0	0	0	840
6:15 PM	24	244	0	36	0	24	0	437	92	0	0	0	857
6:30 PM	18	171	0	29	0	22	0	398	80	0	0	0	718
6:45 PM	23	218	0	49	0	40	0	409	61	0	0	0	800
TOTAL VOLUMES:	292	2428	0	475	0	293	0	5317	865	0	0	0	9670

PM Peak Hr Begins at: 500 PM

	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
PEAK VOLUMES:	91	842	0	147	0	91	0	2024	324	0	0	0	3519
PEAK HR FACTOR:	0.836			0.915			0.880			0.000			0.920

Counts Unlimited
P.O. Box 1178
Corona, CA 92878
(951) 268-6268

Location: Irvine
N/S: Sand Canyon Avenue
E/W: I-5 SB Ramps

ITAM: 305
Date: 5/22/2018
Day: Tuesday

TOTAL VEHICLES

	Sand Canyon Avenue Southbound			I-5 SB Ramps Westbound			Sand Canyon Avenue Northbound			I-5 SB Ramps Eastbound			
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
7:00 AM	105	251	0	0	0	0	0	98	18	94	0	161	727
7:15 AM	129	337	0	0	0	0	0	96	21	82	1	203	869
7:30 AM	143	438	0	0	0	0	0	91	33	63	0	188	956
7:45 AM	161	486	0	0	0	0	0	102	34	48	0	194	1025
8:00 AM	154	455	0	0	0	0	0	83	29	51	2	255	1029
8:15 AM	175	407	0	0	0	0	0	108	22	52	1	234	999
8:30 AM	169	413	0	0	0	0	0	104	28	53	0	229	996
8:45 AM	163	439	0	0	0	0	0	118	23	44	0	221	1008
TOTAL VOLUMES:	1199	3226	0	0	0	0	0	800	208	487	4	1685	7609

AM Peak Hr Begins at: 745 AM

	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
PEAK VOLUMES:	659	1761	0	0	0	0	0	397	113	204	3	912	4049

PEAK HR FACTOR:	0.935	0.000	0.938	0.908	0.984

TOTAL VEHICLES

	Sand Canyon Avenue Southbound			I-5 SB Ramps Westbound			Sand Canyon Avenue Northbound			I-5 SB Ramps Eastbound			
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
4:00 PM	87	193	0	0	0	0	0	341	81	69	0	38	809
4:15 PM	73	181	0	0	0	0	0	358	94	82	2	55	845
4:30 PM	78	162	0	0	0	0	0	367	83	93	2	74	859
4:45 PM	64	155	0	0	0	0	0	351	78	84	1	75	808
5:00 PM	71	141	0	0	0	0	0	409	119	125	0	71	936
5:15 PM	66	123	0	0	0	0	0	474	113	133	2	77	988
5:30 PM	73	131	0	0	0	0	0	429	92	118	0	75	918
5:45 PM	62	154	0	0	0	0	0	396	76	163	0	59	910
6:00 PM	81	146	0	0	0	0	0	377	63	150	0	64	881
6:15 PM	82	166	0	0	0	0	0	395	54	123	0	55	875
6:30 PM	75	124	0	0	0	0	0	339	57	149	0	59	803
6:45 PM	78	117	0	0	0	0	0	315	44	195	0	61	810
TOTAL VOLUMES:	890	1793	0	0	0	0	0	4551	954	1484	7	763	10442

PM Peak Hr Begins at: 500 PM

	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
PEAK VOLUMES:	272	549	0	0	0	0	0	1708	400	539	2	282	3752

PEAK HR FACTOR:	0.950	0.000	0.898	0.927	0.949

Counts Unlimited
P.O. Box 1178
Corona, CA 92878
(951) 268-6268

Location: Irvine
N/S: SR-133 SB Ramps
E/W: Irvine Boulevard

ITAM: 316
Date: 3/29/2017
Day: Thursday

	SR-133 SB Ramps Southbound			Irvine Boulevard Westbound			SR-133 SB Ramps Northbound			Irvine Boulevard Eastbound			
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
7:00 AM	63	0	42	54	220	0	0	0	0	0	278	35	692
7:15 AM	38	0	54	70	241	0	0	0	0	0	267	36	706
7:30 AM	27	0	76	77	316	0	0	0	0	0	415	50	961
7:45 AM	37	1	71	76	354	0	0	0	0	0	396	79	1014
8:00 AM	38	0	48	91	439	0	0	0	0	0	262	70	948
8:15 AM	19	0	49	82	301	0	0	0	0	0	339	87	877
8:30 AM	27	1	32	76	258	0	0	0	0	0	284	70	748
8:45 AM	32	1	45	68	236	0	0	0	0	0	341	76	799
TOTAL VOLUMES:	281	3	417	594	2365	0	0	0	0	0	2582	503	6745

AM Peak Hr Begins at: 730 AM

	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
PEAK VOLUMES:	121	1	244	326	1410	0	0	0	0	0	1412	286	3800

PEAK HR FACTOR:	0.839	0.819	0.000	0.894	0.937

	SR-133 SB Ramps Southbound			Irvine Boulevard Westbound			SR-133 SB Ramps Northbound			Irvine Boulevard Eastbound			
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
4:00 PM	15	0	41	37	419	0	0	0	0	0	300	31	843
4:15 PM	9	0	30	27	448	0	0	0	0	0	267	29	810
4:30 PM	13	0	23	29	446	0	0	0	0	0	286	24	821
4:45 PM	11	1	20	29	524	0	0	0	0	0	311	27	923
5:00 PM	7	0	34	23	481	0	0	0	0	0	294	23	862
5:15 PM	8	0	45	35	585	0	0	0	0	0	305	36	1014
5:30 PM	12	0	36	41	525	0	0	0	0	0	293	26	933
5:45 PM	18	1	37	31	505	0	0	0	0	0	320	36	948
6:00 PM	9	1	35	24	460	0	0	0	0	0	304	25	858
6:15 PM	5	1	15	12	406	0	0	0	0	0	295	15	749
6:30 PM	7	0	27	25	303	0	0	0	0	0	276	22	660
6:45 PM	8	1	22	18	286	0	0	0	0	0	263	19	617
TOTAL VOLUMES:	122	5	365	331	5388	0	0	0	0	0	3514	313	10038

PM Peak Hr Begins at: 500 PM

	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
PEAK VOLUMES:	45	1	152	130	2096	0	0	0	0	0	1212	121	3757

PEAK HR FACTOR:	0.884	0.898	0.000	0.936	0.926

Counts Unlimited
P.O. Box 1178
Corona, CA 92878
(951) 268-6268

Location: Irvine
N/S: SR-133 NB Ramps
E/W: Irvine Boulevard

ITAM: 317
Date: 3/29/2018
Day: Thursday

	SR-133 NB Ramps Southbound			Irvine Boulevard Westbound			SR-133 NB Ramps Northbound			Irvine Boulevard Eastbound			
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
7:00 AM	0	0	0	0	264	17	13	0	21	0	311	37	663
7:15 AM	0	0	0	0	269	25	30	0	31	0	274	29	658
7:30 AM	0	0	0	0	394	23	27	0	22	0	403	33	902
7:45 AM	0	0	0	0	440	16	28	0	32	0	425	29	970
8:00 AM	0	0	0	0	487	21	22	0	23	0	278	36	867
8:15 AM	0	0	0	0	346	19	18	0	20	0	315	25	743
8:30 AM	0	0	0	0	305	21	24	0	20	0	272	30	672
8:45 AM	0	0	0	0	257	27	19	0	17	0	327	28	675
TOTAL VOLUMES:	0	0	0	0	2762	169	181	0	186	0	2605	247	6150

AM Peak Hr Begins at: 730 AM

	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
PEAK VOLUMES:	0	0	0	0	1667	79	95	0	97	0	1421	123	3482

PEAK HR FACTOR:	0.000	0.859	0.800	0.850	0.897

	SR-133 NB Ramps Southbound			Irvine Boulevard Westbound			SR-133 NB Ramps Northbound			Irvine Boulevard Eastbound			
	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
4:00 PM	0	0	0	0	406	37	46	0	42	0	234	63	828
4:15 PM	0	0	0	0	410	31	58	0	39	0	210	57	805
4:30 PM	0	0	0	0	492	34	44	0	51	0	240	55	916
4:45 PM	0	0	0	0	470	48	59	0	38	0	251	48	914
5:00 PM	0	0	0	0	461	37	55	0	58	0	249	49	909
5:15 PM	0	0	0	0	543	40	83	0	55	0	260	51	1032
5:30 PM	0	0	0	0	493	33	63	0	61	0	258	49	957
5:45 PM	0	0	0	0	429	31	64	0	54	0	313	48	939
6:00 PM	0	0	0	0	447	27	49	0	67	0	276	51	917
6:15 PM	0	0	0	0	376	28	52	0	55	0	290	38	839
6:30 PM	0	0	0	0	316	20	52	0	43	0	241	28	700
6:45 PM	0	0	0	0	301	18	28	0	53	0	229	35	664
TOTAL VOLUMES:	0	0	0	0	5144	384	653	0	616	0	3051	572	10420

PM Peak Hr Begins at: 515 PM

	SL	ST	SR	WL	WT	WR	NL	NT	NR	EL	ET	ER	TOTAL
PEAK VOLUMES:	0	0	0	0	1912	131	259	0	237	0	1107	199	3845

PEAK HR FACTOR:	0.000	0.876	0.899	0.904	0.931

Counts Unlimited
P.O. Box 1178
Corona, CA 92878
(951) 268-6268

Appendix C:
LOS Calculation Worksheets

Existing (2020) Conditions

Irvine Ranch Water District

Vistro File: N:\...\IRWD 2020 EX_Version 2.vistro
Report File: N:\...\2020 EX Base AM.pdf

Scenario 1 Base AM
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	WB Thru	0.366	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	SB Thru	0.580	-	A
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	WB Thru	0.496	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	SB Thru	0.538	-	A
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	SB Thru	0.596	-	A
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	SB Thru	0.600	-	B
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.556	-	A
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Right	0.465	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.366

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	1	0	1	2	0
Pocket Length [ft]	280.00	500.00	100.00	300.00	380.00	100.00
Speed [mph]	50.00		50.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	226	130	507	402	342	727
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	226	130	507	402	342	727
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	33	127	101	86	182
Total Analysis Volume [veh/h]	226	130	507	402	342	727
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Overlap	Permissive	Unsignalized	Protected	Permissive
Signal Group	6	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-

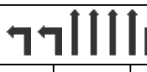
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.15	0.00	0.10	0.21
Intersection LOS	A					
Intersection V/C	0.366					

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.580

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	87	196	397	361	675	68	58	1061	207	510	847	179
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	87	196	397	361	675	68	58	1061	207	510	847	179
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	49	99	90	169	17	15	265	52	128	212	45
Total Analysis Volume [veh/h]	87	196	397	361	675	68	58	1061	207	510	847	179
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

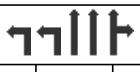
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.04	0.00	0.11	0.20	0.04	0.02	0.16	0.12	0.15	0.17	0.11
Intersection LOS	A											
Intersection V/C	0.580											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.496

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	183	281	42	159	215	11	61	488	156	86	1355	309
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	183	281	42	159	215	11	61	488	156	86	1355	309
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	70	11	40	54	3	15	122	39	22	339	77
Total Analysis Volume [veh/h]	183	281	42	159	215	11	61	488	156	86	1355	309
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

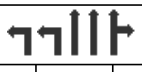
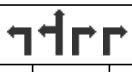
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.00	0.05	0.04	0.01	0.02	0.10	0.00	0.03	0.33	0.33
Intersection LOS	A											
Intersection V/C	0.496											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.538

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	199	447	1	0	1762	457	283	0	480	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	199	447	1	0	1762	457	283	0	480	1	0	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	112	0	0	441	114	71	0	120	0	0	0
Total Analysis Volume [veh/h]	199	447	1	0	1762	457	283	0	480	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.09	0.09	0.00	0.35	0.27	0.08	0.00	0.00	0.00	0.00	0.00
Intersection LOS	A											
Intersection V/C	0.538											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.596

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	486	172	99	2182	403	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	486	172	99	2182	403	98
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	122	43	25	546	101	25
Total Analysis Volume [veh/h]	486	172	99	2182	403	98
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.10	0.03	0.43	0.12	0.06
Intersection LOS	A					
Intersection V/C	0.596					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.600

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	413	118	686	1832	0	212	0	949	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	413	118	686	1832	0	212	0	949	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	103	30	172	458	0	53	0	237	0	0	0
Total Analysis Volume [veh/h]	0	413	118	686	1832	0	212	0	949	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.06	0.07	0.20	0.27	0.00	0.04	0.00	0.17	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.600											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.556

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	126	0	254	0	1469	298	339	1467	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	126	0	254	0	1469	298	339	1467	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	32	0	64	0	367	75	85	367	0
Total Analysis Volume [veh/h]	0	0	0	126	0	254	0	1469	298	339	1467	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.07	0.00	0.07	0.00	0.26	0.26	0.10	0.43	0.00
Intersection LOS	A											
Intersection V/C	0.556											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.465

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	99	0	101	0	0	0	0	1478	0	0	1734	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	99	0	101	0	0	0	0	1478	0	0	1734	82
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	0	25	0	0	0	0	370	0	0	434	21
Total Analysis Volume [veh/h]	99	0	101	0	0	0	0	1478	0	0	1734	82
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.06	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.36	0.36
Intersection LOS	A											
Intersection V/C	0.465											

Irvine Ranch Water District

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Scenario 2 Base PM
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	NB Left	0.418	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	WB Thru	0.541	-	A
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	EB Thru	0.519	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	NB Thru	0.622	-	B
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	NB Thru	0.547	-	A
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	NB Thru	0.520	-	A
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.738	-	C
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.625	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.418

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	1	0	1	2	0
Pocket Length [ft]	280.00	500.00	100.00	300.00	380.00	100.00
Speed [mph]	50.00		50.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	644	361	458	190	148	532
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	644	361	458	190	148	532
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	161	90	115	48	37	133
Total Analysis Volume [veh/h]	644	361	458	190	148	532
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Overlap	Permissive	Unsignalized	Protected	Permissive
Signal Group	6	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-

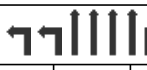
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.13	0.00	0.04	0.16
Intersection LOS	A					
Intersection V/C	0.418					

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.541

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	286	740	485	149	266	79	155	773	149	445	1309	427
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	286	740	485	149	266	79	155	773	149	445	1309	427
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	185	121	37	67	20	39	193	37	111	327	107
Total Analysis Volume [veh/h]	286	740	485	149	266	79	155	773	149	445	1309	427
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

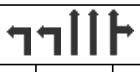
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.15	0.00	0.04	0.08	0.05	0.05	0.11	0.09	0.13	0.26	0.25
Intersection LOS	A											
Intersection V/C	0.541											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.519

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	111	161	43	164	122	35	263	1945	215	28	666	159
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	161	43	164	122	35	263	1945	215	28	666	159
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	40	11	41	31	9	66	486	54	7	167	40
Total Analysis Volume [veh/h]	111	161	43	164	122	35	263	1945	215	28	666	159
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

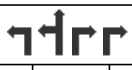
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.00	0.05	0.02	0.02	0.08	0.38	0.00	0.01	0.16	0.16
Intersection LOS	A											
Intersection V/C	0.519											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.622

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	505	1632	0	3	709	182	851	0	187	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	505	1632	0	3	709	182	851	0	187	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	126	408	0	1	177	46	213	0	47	0	0	0
Total Analysis Volume [veh/h]	505	1632	0	3	709	182	851	0	187	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.32	0.00	0.00	0.14	0.11	0.25	0.00	0.00	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.622											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.547

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2106	337	95	876	153	95
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2106	337	95	876	153	95
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	527	84	24	219	38	24
Total Analysis Volume [veh/h]	2106	337	95	876	153	95
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.41	0.20	0.03	0.17	0.05	0.06
Intersection LOS	A					
Intersection V/C	0.547					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.520

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	1777	416	283	571	0	561	0	293	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1777	416	283	571	0	561	0	293	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	444	104	71	143	0	140	0	73	0	0	0
Total Analysis Volume [veh/h]	0	1777	416	283	571	0	561	0	293	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.26	0.24	0.08	0.08	0.00	0.11	0.00	0.13	0.00	0.00	0.00
Intersection LOS	A											
Intersection V/C	0.520											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	47	0	158	0	1261	126	135	2181	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	47	0	158	0	1261	126	135	2181	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	12	0	40	0	315	32	34	545	0
Total Analysis Volume [veh/h]	0	0	0	47	0	158	0	1261	126	135	2181	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.05	0.00	0.20	0.20	0.04	0.64	0.00
Intersection LOS	C											
Intersection V/C	0.738											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.625

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	269	0	247	0	0	0	0	1152	0	0	1989	136
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	269	0	247	0	0	0	0	1152	0	0	1989	136
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	0	62	0	0	0	0	288	0	0	497	34
Total Analysis Volume [veh/h]	269	0	247	0	0	0	0	1152	0	0	1989	136
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.00	0.15	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.42	0.42
Intersection LOS	B											
Intersection V/C	0.625											

Irvine Ranch Water District

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Report File: N:\...\2020 EX PP AM_Route 1A through I-5 N.pdf

Scenario 3 Base Route 1A AM
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	WB Thru	0.396	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	SB Thru	0.588	-	A
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	WB Thru	0.505	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	SB Thru	0.538	-	A
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	SB Thru	0.596	-	A
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	SB Thru	0.600	-	B
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.556	-	A
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Right	0.465	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.396

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	226	0	130	0	0	0	0	507	402	342	727	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	226	45	130	0	27	0	0	507	402	342	727	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	11	33	0	7	0	0	127	101	86	182	0
Total Analysis Volume [veh/h]	226	45	130	0	27	0	0	507	402	342	727	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

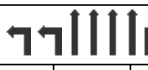
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.08	0.00	0.00	0.02	0.00	0.00	0.15	0.00	0.10	0.21	0.00
Intersection LOS	A											
Intersection V/C	0.396											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.588

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	87	196	397	361	675	68	58	1061	207	510	847	179
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	87	241	397	361	702	68	58	1061	207	510	847	179
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	60	99	90	176	17	15	265	52	128	212	45
Total Analysis Volume [veh/h]	87	241	397	361	702	68	58	1061	207	510	847	179
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

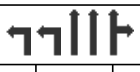
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.05	0.00	0.11	0.21	0.04	0.02	0.16	0.12	0.15	0.17	0.11
Intersection LOS	A											
Intersection V/C	0.588											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.505

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	183	281	42	159	215	11	61	488	156	86	1355	309
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	183	326	42	159	242	11	61	488	156	86	1355	309
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	82	11	40	61	3	15	122	39	22	339	77
Total Analysis Volume [veh/h]	183	326	42	159	242	11	61	488	156	86	1355	309
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

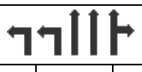
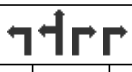
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.00	0.05	0.05	0.01	0.02	0.10	0.00	0.03	0.33	0.33
Intersection LOS	A											
Intersection V/C	0.505											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.538

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	199	447	1	0	1762	457	283	0	480	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	0	27	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	199	492	1	0	1762	484	283	0	480	1	0	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	123	0	0	441	121	71	0	120	0	0	0
Total Analysis Volume [veh/h]	199	492	1	0	1762	484	283	0	480	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.10	0.10	0.00	0.35	0.28	0.08	0.00	0.00	0.00	0.00	0.00
Intersection LOS	A											
Intersection V/C	0.538											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.596

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	486	172	99	2182	403	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	45	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	531	172	99	2182	403	98
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	133	43	25	546	101	25
Total Analysis Volume [veh/h]	531	172	99	2182	403	98
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.10	0.03	0.43	0.12	0.06
Intersection LOS	A					
Intersection V/C	0.596					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.600

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	413	118	686	1832	0	212	0	949	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	45	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	413	118	686	1832	0	257	0	949	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	103	30	172	458	0	64	0	237	0	0	0
Total Analysis Volume [veh/h]	0	413	118	686	1832	0	257	0	949	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.06	0.07	0.20	0.27	0.00	0.05	0.00	0.18	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.600											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.556

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	126	0	254	0	1469	298	339	1467	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	126	0	254	0	1469	298	339	1467	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	32	0	64	0	367	75	85	367	0
Total Analysis Volume [veh/h]	0	0	0	126	0	254	0	1469	298	339	1467	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.07	0.00	0.07	0.00	0.26	0.26	0.10	0.43	0.00
Intersection LOS	A											
Intersection V/C	0.556											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.465

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	99	0	101	0	0	0	0	1478	0	0	1734	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	99	0	101	0	0	0	0	1478	0	0	1734	82
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	0	25	0	0	0	0	370	0	0	434	21
Total Analysis Volume [veh/h]	99	0	101	0	0	0	0	1478	0	0	1734	82
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.06	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.36	0.36
Intersection LOS	A											
Intersection V/C	0.465											

Irvine Ranch Water District

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Report File: N:\...\2020 EX PP PM_Route 1A through I-5 N.pdf

Scenario 4 Base Route 1A PM
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	NB Left	0.429	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	WB Thru	0.541	-	A
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	EB Thru	0.519	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	NB Thru	0.622	-	B
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	NB Thru	0.547	-	A
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	NB Thru	0.520	-	A
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.738	-	C
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.625	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.429

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	644	0	361	0	0	0	0	458	190	148	532	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	644	0	361	0	18	0	0	458	190	148	532	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	161	0	90	0	5	0	0	115	48	37	133	0
Total Analysis Volume [veh/h]	644	0	361	0	18	0	0	458	190	148	532	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

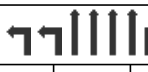
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.00	0.00	0.01	0.00	0.00	0.13	0.00	0.04	0.16	0.00
Intersection LOS	A											
Intersection V/C	0.429											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.541

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	286	740	485	149	266	79	155	773	149	445	1309	427
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	286	740	485	149	284	79	155	773	149	445	1309	427
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	185	121	37	71	20	39	193	37	111	327	107
Total Analysis Volume [veh/h]	286	740	485	149	284	79	155	773	149	445	1309	427
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

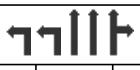
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.15	0.00	0.04	0.08	0.05	0.05	0.11	0.09	0.13	0.26	0.25
Intersection LOS	A											
Intersection V/C	0.541											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.519

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	111	161	43	164	122	35	263	1945	215	28	666	159
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	161	43	164	140	35	263	1945	215	28	666	159
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	40	11	41	35	9	66	486	54	7	167	40
Total Analysis Volume [veh/h]	111	161	43	164	140	35	263	1945	215	28	666	159
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

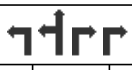
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.00	0.05	0.03	0.02	0.08	0.38	0.00	0.01	0.16	0.16
Intersection LOS	A											
Intersection V/C	0.519											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.622

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	505	1632	0	3	709	182	851	0	187	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	18	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	505	1632	0	3	709	200	851	0	187	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	126	408	0	1	177	50	213	0	47	0	0	0
Total Analysis Volume [veh/h]	505	1632	0	3	709	200	851	0	187	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.32	0.00	0.00	0.14	0.12	0.25	0.00	0.00	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.622											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.547

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2106	337	95	876	153	95
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2106	337	95	876	153	95
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	527	84	24	219	38	24
Total Analysis Volume [veh/h]	2106	337	95	876	153	95
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.41	0.20	0.03	0.17	0.05	0.06
Intersection LOS	A					
Intersection V/C	0.547					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.520

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	1777	416	283	571	0	561	0	293	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1777	416	283	571	0	561	0	293	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	444	104	71	143	0	140	0	73	0	0	0
Total Analysis Volume [veh/h]	0	1777	416	283	571	0	561	0	293	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.26	0.24	0.08	0.08	0.00	0.11	0.00	0.13	0.00	0.00	0.00
Intersection LOS	A											
Intersection V/C	0.520											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	47	0	158	0	1261	126	135	2181	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	47	0	158	0	1261	126	135	2181	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	12	0	40	0	315	32	34	545	0
Total Analysis Volume [veh/h]	0	0	0	47	0	158	0	1261	126	135	2181	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.05	0.00	0.20	0.20	0.04	0.64	0.00
Intersection LOS	C											
Intersection V/C	0.738											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.625

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	269	0	247	0	0	0	0	1152	0	0	1989	136
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	269	0	247	0	0	0	0	1152	0	0	1989	136
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	0	62	0	0	0	0	288	0	0	497	34
Total Analysis Volume [veh/h]	269	0	247	0	0	0	0	1152	0	0	1989	136
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.00	0.15	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.42	0.42
Intersection LOS	B											
Intersection V/C	0.625											

Irvine Ranch Water District

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Report File: N:\...\2020 EX PP AM_Route 1B through I-5 S.pdf

Scenario 5 Base Route 1B AM
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	WB Thru	0.396	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	SB Thru	0.588	-	A
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	WB Thru	0.505	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	SB Thru	0.556	-	A
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	SB Thru	0.602	-	B
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	SB Thru	0.608	-	B
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.556	-	A
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Right	0.465	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.396

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	226	0	130	0	0	0	0	507	402	342	727	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	226	45	130	0	27	0	0	507	402	342	727	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	11	33	0	7	0	0	127	101	86	182	0
Total Analysis Volume [veh/h]	226	45	130	0	27	0	0	507	402	342	727	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.08	0.00	0.00	0.02	0.00	0.00	0.15	0.00	0.10	0.21	0.00
Intersection LOS	A											
Intersection V/C	0.396											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.588

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	87	196	397	361	675	68	58	1061	207	510	847	179
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	87	241	397	361	702	68	58	1061	207	510	847	179
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	60	99	90	176	17	15	265	52	128	212	45
Total Analysis Volume [veh/h]	87	241	397	361	702	68	58	1061	207	510	847	179
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

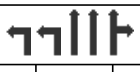
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.05	0.00	0.11	0.21	0.04	0.02	0.16	0.12	0.15	0.17	0.11
Intersection LOS	A											
Intersection V/C	0.588											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.505

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	183	281	42	159	215	11	61	488	156	86	1355	309
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	183	326	42	159	242	11	61	488	156	86	1355	309
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	82	11	40	61	3	15	122	39	22	339	77
Total Analysis Volume [veh/h]	183	326	42	159	242	11	61	488	156	86	1355	309
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

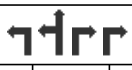
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.00	0.05	0.05	0.01	0.02	0.10	0.00	0.03	0.33	0.33
Intersection LOS	A											
Intersection V/C	0.505											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.556

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	199	447	1	0	1762	457	283	0	480	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	27	0	45	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	199	447	1	0	1789	457	328	0	480	1	0	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	112	0	0	447	114	82	0	120	0	0	0
Total Analysis Volume [veh/h]	199	447	1	0	1789	457	328	0	480	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.09	0.09	0.00	0.35	0.27	0.10	0.00	0.00	0.00	0.00	0.00
Intersection LOS	A											
Intersection V/C	0.556											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.602

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	486	172	99	2182	403	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	27	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	486	172	99	2209	403	98
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	122	43	25	552	101	25
Total Analysis Volume [veh/h]	486	172	99	2209	403	98
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.10	0.03	0.43	0.12	0.06
Intersection LOS	B					
Intersection V/C	0.602					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.608

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	413	118	686	1832	0	212	0	949	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	27	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	413	118	713	1832	0	212	0	949	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	103	30	178	458	0	53	0	237	0	0	0
Total Analysis Volume [veh/h]	0	413	118	713	1832	0	212	0	949	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.06	0.07	0.21	0.27	0.00	0.04	0.00	0.17	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.608											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.556

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	126	0	254	0	1469	298	339	1467	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	126	0	254	0	1469	298	339	1467	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	32	0	64	0	367	75	85	367	0
Total Analysis Volume [veh/h]	0	0	0	126	0	254	0	1469	298	339	1467	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.07	0.00	0.07	0.00	0.26	0.26	0.10	0.43	0.00
Intersection LOS	A											
Intersection V/C	0.556											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.465

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	99	0	101	0	0	0	0	1478	0	0	1734	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	99	0	101	0	0	0	0	1478	0	0	1734	82
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	0	25	0	0	0	0	370	0	0	434	21
Total Analysis Volume [veh/h]	99	0	101	0	0	0	0	1478	0	0	1734	82
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.06	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.36	0.36
Intersection LOS	A											
Intersection V/C	0.465											

Irvine Ranch Water District

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Report File: N:\...\2020 EX PP PM_Route 1B through I-5 S.pdf

Scenario 6 Base Route 1B PM
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	NB Left	0.429	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	WB Thru	0.541	-	A
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	EB Thru	0.519	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	NB Thru	0.622	-	B
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	NB Thru	0.547	-	A
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	NB Thru	0.525	-	A
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.738	-	C
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.625	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.429

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	644	0	361	0	0	0	0	458	190	148	532	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	644	0	361	0	18	0	0	458	190	148	532	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	161	0	90	0	5	0	0	115	48	37	133	0
Total Analysis Volume [veh/h]	644	0	361	0	18	0	0	458	190	148	532	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

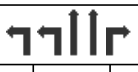
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.00	0.00	0.01	0.00	0.00	0.13	0.00	0.04	0.16	0.00
Intersection LOS	A											
Intersection V/C	0.429											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.541

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	286	740	485	149	266	79	155	773	149	445	1309	427
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	286	740	485	149	284	79	155	773	149	445	1309	427
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	185	121	37	71	20	39	193	37	111	327	107
Total Analysis Volume [veh/h]	286	740	485	149	284	79	155	773	149	445	1309	427
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

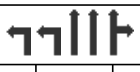
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.15	0.00	0.04	0.08	0.05	0.05	0.11	0.09	0.13	0.26	0.25
Intersection LOS	A											
Intersection V/C	0.541											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.519

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	111	161	43	164	122	35	263	1945	215	28	666	159
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	161	43	164	140	35	263	1945	215	28	666	159
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	40	11	41	35	9	66	486	54	7	167	40
Total Analysis Volume [veh/h]	111	161	43	164	140	35	263	1945	215	28	666	159
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

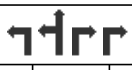
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.00	0.05	0.03	0.02	0.08	0.38	0.00	0.01	0.16	0.16
Intersection LOS	A											
Intersection V/C	0.519											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.622

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	505	1632	0	3	709	182	851	0	187	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	505	1632	0	3	727	182	851	0	187	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	126	408	0	1	182	46	213	0	47	0	0	0
Total Analysis Volume [veh/h]	505	1632	0	3	727	182	851	0	187	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.32	0.00	0.00	0.14	0.11	0.25	0.00	0.00	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.622											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.547

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2106	337	95	876	153	95
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2106	337	95	894	153	95
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	527	84	24	224	38	24
Total Analysis Volume [veh/h]	2106	337	95	894	153	95
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.41	0.20	0.03	0.18	0.05	0.06
Intersection LOS	A					
Intersection V/C	0.547					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.525

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	1777	416	283	571	0	561	0	293	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1777	416	301	571	0	561	0	293	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	444	104	75	143	0	140	0	73	0	0	0
Total Analysis Volume [veh/h]	0	1777	416	301	571	0	561	0	293	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.26	0.24	0.09	0.08	0.00	0.11	0.00	0.13	0.00	0.00	0.00
Intersection LOS	A											
Intersection V/C	0.525											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	47	0	158	0	1261	126	135	2181	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	47	0	158	0	1261	126	135	2181	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	12	0	40	0	315	32	34	545	0
Total Analysis Volume [veh/h]	0	0	0	47	0	158	0	1261	126	135	2181	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.05	0.00	0.20	0.20	0.04	0.64	0.00
Intersection LOS	C											
Intersection V/C	0.738											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.625

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	269	0	247	0	0	0	0	1152	0	0	1989	136
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	269	0	247	0	0	0	0	1152	0	0	1989	136
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	0	62	0	0	0	0	288	0	0	497	34
Total Analysis Volume [veh/h]	269	0	247	0	0	0	0	1152	0	0	1989	136
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.00	0.15	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.42	0.42
Intersection LOS	B											
Intersection V/C	0.625											

Irvine Ranch Water District

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Report File: N:\...\2020 EX PP AM_Route 2A through SR-133 N.pdf

Scenario 7 Base Route 2A AM
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	WB Thru	0.396	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	SB Thru	0.580	-	A
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	WB Thru	0.496	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	SB Thru	0.538	-	A
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	SB Thru	0.596	-	A
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	SB Thru	0.600	-	B
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.569	-	A
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Right	0.465	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.396

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	226	0	130	0	0	0	0	507	402	342	727	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	226	45	130	0	27	0	0	507	402	342	727	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	11	33	0	7	0	0	127	101	86	182	0
Total Analysis Volume [veh/h]	226	45	130	0	27	0	0	507	402	342	727	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

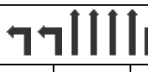
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.08	0.00	0.00	0.02	0.00	0.00	0.15	0.00	0.10	0.21	0.00
Intersection LOS	A											
Intersection V/C	0.396											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.580

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	87	196	397	361	675	68	58	1061	207	510	847	179
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	27	0	0	0	0	0	0	0	45
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	87	196	397	388	675	68	58	1061	207	510	847	224
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	49	99	97	169	17	15	265	52	128	212	56
Total Analysis Volume [veh/h]	87	196	397	388	675	68	58	1061	207	510	847	224
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

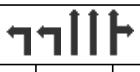
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.04	0.00	0.11	0.20	0.04	0.02	0.16	0.12	0.15	0.17	0.13
Intersection LOS	A											
Intersection V/C	0.580											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.496

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	183	281	42	159	215	11	61	488	156	86	1355	309
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	183	281	42	159	215	11	61	488	156	86	1355	309
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	70	11	40	54	3	15	122	39	22	339	77
Total Analysis Volume [veh/h]	183	281	42	159	215	11	61	488	156	86	1355	309
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

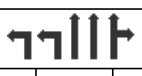
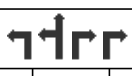
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.00	0.05	0.04	0.01	0.02	0.10	0.00	0.03	0.33	0.33
Intersection LOS	A											
Intersection V/C	0.496											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.538

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	199	447	1	0	1762	457	283	0	480	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	199	447	1	0	1762	457	283	0	480	1	0	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	112	0	0	441	114	71	0	120	0	0	0
Total Analysis Volume [veh/h]	199	447	1	0	1762	457	283	0	480	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.09	0.09	0.00	0.35	0.27	0.08	0.00	0.00	0.00	0.00	0.00
Intersection LOS	A											
Intersection V/C	0.538											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.596

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	486	172	99	2182	403	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	486	172	99	2182	403	98
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	122	43	25	546	101	25
Total Analysis Volume [veh/h]	486	172	99	2182	403	98
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.10	0.03	0.43	0.12	0.06
Intersection LOS	A					
Intersection V/C	0.596					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.600

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	413	118	686	1832	0	212	0	949	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	413	118	686	1832	0	212	0	949	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	103	30	172	458	0	53	0	237	0	0	0
Total Analysis Volume [veh/h]	0	413	118	686	1832	0	212	0	949	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.06	0.07	0.20	0.27	0.00	0.04	0.00	0.17	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.600											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.569

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	126	0	254	0	1469	298	339	1467	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	45	0	27	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	126	0	299	0	1496	298	339	1467	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	32	0	75	0	374	75	85	367	0
Total Analysis Volume [veh/h]	0	0	0	126	0	299	0	1496	298	339	1467	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.07	0.00	0.09	0.00	0.26	0.26	0.10	0.43	0.00
Intersection LOS	A											
Intersection V/C	0.569											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.465

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	99	0	101	0	0	0	0	1478	0	0	1734	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	99	0	101	0	0	0	0	1478	0	0	1734	82
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	0	25	0	0	0	0	370	0	0	434	21
Total Analysis Volume [veh/h]	99	0	101	0	0	0	0	1478	0	0	1734	82
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.00	0.06	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.36	0.36
Intersection LOS	A											
Intersection V/C	0.465											

Irvine Ranch Water District

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Report File: N:\...\2020 EX PP PM_Route 2A through SR-133 N.pdf

Scenario 8 Base Route 2A PM
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	NB Left	0.429	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	WB Thru	0.546	-	A
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	EB Thru	0.519	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	NB Thru	0.622	-	B
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	NB Thru	0.547	-	A
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	NB Thru	0.520	-	A
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.738	-	C
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.625	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.429

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	644	0	361	0	0	0	0	458	190	148	532	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	644	0	361	0	18	0	0	458	190	148	532	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	161	0	90	0	5	0	0	115	48	37	133	0
Total Analysis Volume [veh/h]	644	0	361	0	18	0	0	458	190	148	532	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

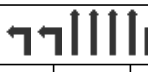
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.00	0.00	0.01	0.00	0.00	0.13	0.00	0.04	0.16	0.00
Intersection LOS	A											
Intersection V/C	0.429											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.546

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	286	740	485	149	266	79	155	773	149	445	1309	427
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	286	740	485	167	266	79	155	773	149	445	1309	427
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	185	121	42	67	20	39	193	37	111	327	107
Total Analysis Volume [veh/h]	286	740	485	167	266	79	155	773	149	445	1309	427
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

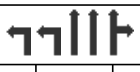
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.15	0.00	0.05	0.08	0.05	0.05	0.11	0.09	0.13	0.26	0.25
Intersection LOS	A											
Intersection V/C	0.546											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.519

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	111	161	43	164	122	35	263	1945	215	28	666	159
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	161	43	164	122	35	263	1945	215	28	666	159
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	40	11	41	31	9	66	486	54	7	167	40
Total Analysis Volume [veh/h]	111	161	43	164	122	35	263	1945	215	28	666	159
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

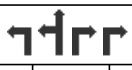
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.00	0.05	0.02	0.02	0.08	0.38	0.00	0.01	0.16	0.16
Intersection LOS	A											
Intersection V/C	0.519											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.622

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	505	1632	0	3	709	182	851	0	187	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	505	1632	0	3	709	182	851	0	187	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	126	408	0	1	177	46	213	0	47	0	0	0
Total Analysis Volume [veh/h]	505	1632	0	3	709	182	851	0	187	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.32	0.00	0.00	0.14	0.11	0.25	0.00	0.00	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.622											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.547

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2106	337	95	876	153	95
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2106	337	95	876	153	95
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	527	84	24	219	38	24
Total Analysis Volume [veh/h]	2106	337	95	876	153	95
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.41	0.20	0.03	0.17	0.05	0.06
Intersection LOS	A					
Intersection V/C	0.547					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.520

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	1777	416	283	571	0	561	0	293	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1777	416	283	571	0	561	0	293	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	444	104	71	143	0	140	0	73	0	0	0
Total Analysis Volume [veh/h]	0	1777	416	283	571	0	561	0	293	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.26	0.24	0.08	0.08	0.00	0.11	0.00	0.13	0.00	0.00	0.00
Intersection LOS	A											
Intersection V/C	0.520											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	47	0	158	0	1261	126	135	2181	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	18	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	47	0	158	0	1279	126	135	2181	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	12	0	40	0	320	32	34	545	0
Total Analysis Volume [veh/h]	0	0	0	47	0	158	0	1279	126	135	2181	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.05	0.00	0.21	0.21	0.04	0.64	0.00
Intersection LOS	C											
Intersection V/C	0.738											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.625

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	269	0	247	0	0	0	0	1152	0	0	1989	136
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	269	0	247	0	0	0	0	1152	0	0	1989	136
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	0	62	0	0	0	0	288	0	0	497	34
Total Analysis Volume [veh/h]	269	0	247	0	0	0	0	1152	0	0	1989	136
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.00	0.15	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.42	0.42
Intersection LOS	B											
Intersection V/C	0.625											

Irvine Ranch Water District

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Report File: N:\...\2020 EX PP AM_Route 2B through SR-133 S.pdf

Scenario 9 Base Route 2B AM
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	WB Thru	0.396	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	SB Thru	0.580	-	A
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	WB Thru	0.496	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	SB Thru	0.538	-	A
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	SB Thru	0.596	-	A
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	SB Thru	0.600	-	B
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.569	-	A
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Right	0.491	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.396

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	226	0	130	0	0	0	0	507	402	342	727	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	226	45	130	0	27	0	0	507	402	342	727	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	11	33	0	7	0	0	127	101	86	182	0
Total Analysis Volume [veh/h]	226	45	130	0	27	0	0	507	402	342	727	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

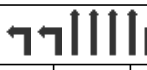
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.08	0.00	0.00	0.02	0.00	0.00	0.15	0.00	0.10	0.21	0.00
Intersection LOS	A											
Intersection V/C	0.396											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.580

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	87	196	397	361	675	68	58	1061	207	510	847	179
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	27	0	0	0	0	0	0	0	45
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	87	196	397	388	675	68	58	1061	207	510	847	224
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	22	49	99	97	169	17	15	265	52	128	212	56
Total Analysis Volume [veh/h]	87	196	397	388	675	68	58	1061	207	510	847	224
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

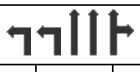
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.04	0.00	0.11	0.20	0.04	0.02	0.16	0.12	0.15	0.17	0.13
Intersection LOS	A											
Intersection V/C	0.580											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.496

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	183	281	42	159	215	11	61	488	156	86	1355	309
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	183	281	42	159	215	11	61	488	156	86	1355	309
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	70	11	40	54	3	15	122	39	22	339	77
Total Analysis Volume [veh/h]	183	281	42	159	215	11	61	488	156	86	1355	309
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

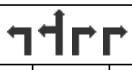
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.00	0.05	0.04	0.01	0.02	0.10	0.00	0.03	0.33	0.33
Intersection LOS	A											
Intersection V/C	0.496											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.538

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	199	447	1	0	1762	457	283	0	480	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	199	447	1	0	1762	457	283	0	480	1	0	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	112	0	0	441	114	71	0	120	0	0	0
Total Analysis Volume [veh/h]	199	447	1	0	1762	457	283	0	480	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.09	0.09	0.00	0.35	0.27	0.08	0.00	0.00	0.00	0.00	0.00
Intersection LOS	A											
Intersection V/C	0.538											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.596

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	486	172	99	2182	403	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	486	172	99	2182	403	98
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	122	43	25	546	101	25
Total Analysis Volume [veh/h]	486	172	99	2182	403	98
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.10	0.03	0.43	0.12	0.06
Intersection LOS	A					
Intersection V/C	0.596					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.600

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	413	118	686	1832	0	212	0	949	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	413	118	686	1832	0	212	0	949	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	103	30	172	458	0	53	0	237	0	0	0
Total Analysis Volume [veh/h]	0	413	118	686	1832	0	212	0	949	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.06	0.07	0.20	0.27	0.00	0.04	0.00	0.17	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.600											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.569

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	126	0	254	0	1469	298	339	1467	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	27	0	45	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	126	0	254	0	1469	325	339	1512	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	32	0	64	0	367	81	85	378	0
Total Analysis Volume [veh/h]	0	0	0	126	0	254	0	1469	325	339	1512	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.07	0.00	0.07	0.00	0.26	0.26	0.10	0.44	0.00
Intersection LOS	A											
Intersection V/C	0.569											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.491

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	99	0	101	0	0	0	0	1478	0	0	1734	82
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	45	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	144	0	101	0	0	0	0	1478	0	0	1734	82
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	0	25	0	0	0	0	370	0	0	434	21
Total Analysis Volume [veh/h]	144	0	101	0	0	0	0	1478	0	0	1734	82
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.06	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.36	0.36
Intersection LOS	A											
Intersection V/C	0.491											

Irvine Ranch Water District

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Scenario 10 Base Route 2B PM
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	NB Left	0.429	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	WB Thru	0.546	-	A
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	EB Thru	0.519	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	NB Thru	0.622	-	B
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	NB Thru	0.547	-	A
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	NB Thru	0.520	-	A
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.738	-	C
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.625	-	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.429

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	644	0	361	0	0	0	0	458	190	148	532	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	644	0	361	0	18	0	0	458	190	148	532	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	161	0	90	0	5	0	0	115	48	37	133	0
Total Analysis Volume [veh/h]	644	0	361	0	18	0	0	458	190	148	532	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

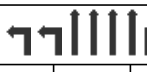
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.00	0.00	0.01	0.00	0.00	0.13	0.00	0.04	0.16	0.00
Intersection LOS	A											
Intersection V/C	0.429											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.546

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	286	740	485	149	266	79	155	773	149	445	1309	427
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	286	740	485	167	266	79	155	773	149	445	1309	427
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	72	185	121	42	67	20	39	193	37	111	327	107
Total Analysis Volume [veh/h]	286	740	485	167	266	79	155	773	149	445	1309	427
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

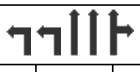
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.15	0.00	0.05	0.08	0.05	0.05	0.11	0.09	0.13	0.26	0.25
Intersection LOS	A											
Intersection V/C	0.546											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.519

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	111	161	43	164	122	35	263	1945	215	28	666	159
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	111	161	43	164	122	35	263	1945	215	28	666	159
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	40	11	41	31	9	66	486	54	7	167	40
Total Analysis Volume [veh/h]	111	161	43	164	122	35	263	1945	215	28	666	159
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

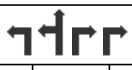
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.00	0.05	0.02	0.02	0.08	0.38	0.00	0.01	0.16	0.16
Intersection LOS	A											
Intersection V/C	0.519											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.622

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	505	1632	0	3	709	182	851	0	187	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	505	1632	0	3	709	182	851	0	187	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	126	408	0	1	177	46	213	0	47	0	0	0
Total Analysis Volume [veh/h]	505	1632	0	3	709	182	851	0	187	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.32	0.00	0.00	0.14	0.11	0.25	0.00	0.00	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.622											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.547

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2106	337	95	876	153	95
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2106	337	95	876	153	95
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	527	84	24	219	38	24
Total Analysis Volume [veh/h]	2106	337	95	876	153	95
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.41	0.20	0.03	0.17	0.05	0.06
Intersection LOS	A					
Intersection V/C	0.547					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.520

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	1777	416	283	571	0	561	0	293	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1777	416	283	571	0	561	0	293	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	444	104	71	143	0	140	0	73	0	0	0
Total Analysis Volume [veh/h]	0	1777	416	283	571	0	561	0	293	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.26	0.24	0.08	0.08	0.00	0.11	0.00	0.13	0.00	0.00	0.00
Intersection LOS	A											
Intersection V/C	0.520											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.738

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	47	0	158	0	1261	126	135	2181	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	18	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	47	0	158	0	1261	144	135	2181	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	12	0	40	0	315	36	34	545	0
Total Analysis Volume [veh/h]	0	0	0	47	0	158	0	1261	144	135	2181	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.05	0.00	0.21	0.21	0.04	0.64	0.00
Intersection LOS	C											
Intersection V/C	0.738											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.625

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	269	0	247	0	0	0	0	1152	0	0	1989	136
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	269	0	247	0	0	0	0	1152	0	0	1989	136
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	0	62	0	0	0	0	288	0	0	497	34
Total Analysis Volume [veh/h]	269	0	247	0	0	0	0	1152	0	0	1989	136
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.16	0.00	0.15	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.42	0.42
Intersection LOS	B											
Intersection V/C	0.625											

Interim Year (2023) Approved Project Conditions

Irvine Ranch Water District

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Report File: N:\...\2023 APP NB AM.pdf

Scenario 1 2023 APP NB AM
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	WB Thru	0.426	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	SB Thru	0.681	-	B
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	WB Thru	0.580	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	SB Thru	0.630	-	B
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	SB Thru	0.700	-	B
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	SB Thru	0.704	-	C
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.652	-	B
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.544	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.426

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	1	0	1	2	0
Pocket Length [ft]	280.00	500.00	100.00	300.00	380.00	100.00
Speed [mph]	50.00		50.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	268	155	602	477	407	865
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	268	155	602	477	407	865
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	39	151	119	102	216
Total Analysis Volume [veh/h]	268	155	602	477	407	865
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Overlap	Permissive	Unsignalized	Protected	Permissive
Signal Group	6	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-

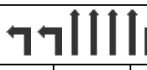
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.18	0.00	0.12	0.25
Intersection LOS	A					
Intersection V/C	0.426					

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.681

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	104	233	472	429	803	80	69	1262	246	606	1007	213
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	233	472	429	803	80	69	1262	246	606	1007	213
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	58	118	107	201	20	17	316	62	152	252	53
Total Analysis Volume [veh/h]	104	233	472	429	803	80	69	1262	246	606	1007	213
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.05	0.00	0.13	0.24	0.05	0.02	0.19	0.14	0.18	0.20	0.13
Intersection LOS	B											
Intersection V/C	0.681											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.580

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	218	334	49	189	256	14	73	580	186	103	1610	367
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	218	334	49	189	256	14	73	580	186	103	1610	367
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	84	12	47	64	4	18	145	47	26	403	92
Total Analysis Volume [veh/h]	218	334	49	189	256	14	73	580	186	103	1610	367
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

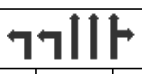
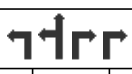
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.07	0.00	0.06	0.05	0.01	0.02	0.11	0.00	0.03	0.39	0.39
Intersection LOS	A											
Intersection V/C	0.580											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	236	532	1	0	2095	543	336	0	570	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	236	532	1	0	2095	543	336	0	570	1	0	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	133	0	0	524	136	84	0	143	0	0	0
Total Analysis Volume [veh/h]	236	532	1	0	2095	543	336	0	570	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.10	0.10	0.00	0.41	0.32	0.10	0.00	0.00	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.630											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.700

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	578	204	117	2594	479	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	578	204	117	2594	479	116
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	145	51	29	649	120	29
Total Analysis Volume [veh/h]	578	204	117	2594	479	116
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.12	0.03	0.51	0.14	0.07
Intersection LOS	B					
Intersection V/C	0.700					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.704

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	491	140	815	2178	0	252	0	1128	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	491	140	815	2178	0	252	0	1128	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	123	35	204	545	0	63	0	282	0	0	0
Total Analysis Volume [veh/h]	0	491	140	815	2178	0	252	0	1128	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.07	0.08	0.24	0.32	0.00	0.05	0.00	0.20	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.704											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.652

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	150	0	302	0	1746	354	403	1744	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	150	0	302	0	1746	354	403	1744	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	38	0	76	0	437	89	101	436	0
Total Analysis Volume [veh/h]	0	0	0	150	0	302	0	1746	354	403	1744	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.09	0.00	0.31	0.31	0.12	0.51	0.00
Intersection LOS	B											
Intersection V/C	0.652											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.544

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	117	0	120	0	0	0	0	1758	0	0	2062	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	117	0	120	0	0	0	0	1758	0	0	2062	98
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	0	30	0	0	0	0	440	0	0	516	25
Total Analysis Volume [veh/h]	117	0	120	0	0	0	0	1758	0	0	2062	98
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.07	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.42	0.42
Intersection LOS	A											
Intersection V/C	0.544											

Irvine Ranch Water District

Vistro File: N:\...\IRWD 2023 APP.vistro
Report File: N:\...\2023 APP NB PM.pdf

Scenario 2 2023 APP NB PM
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	NB Left	0.488	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	WB Thru	0.635	-	B
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	EB Thru	0.609	-	B
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	NB Thru	0.731	-	C
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	NB Thru	0.641	-	B
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	NB Thru	0.610	-	B
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.869	-	D
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Right	0.735	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.488

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	1	0	1	2	0
Pocket Length [ft]	280.00	500.00	100.00	300.00	380.00	100.00
Speed [mph]	50.00		50.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	767	430	545	227	176	633
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	767	430	545	227	176	633
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	192	108	136	57	44	158
Total Analysis Volume [veh/h]	767	430	545	227	176	633
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Overlap	Permissive	Unsignalized	Protected	Permissive
Signal Group	6	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-

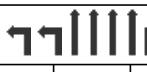
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.00	0.16	0.00	0.05	0.19
Intersection LOS	A					
Intersection V/C	0.488					

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.635

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	341	881	577	177	317	94	185	920	177	530	1558	508
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	341	881	577	177	317	94	185	920	177	530	1558	508
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	85	220	144	44	79	24	46	230	44	133	390	127
Total Analysis Volume [veh/h]	341	881	577	177	317	94	185	920	177	530	1558	508
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

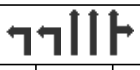
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.17	0.00	0.05	0.09	0.06	0.05	0.14	0.10	0.16	0.31	0.30
Intersection LOS	B											
Intersection V/C	0.635											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.609

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	133	192	51	196	145	42	313	2315	256	33	793	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	133	192	51	196	145	42	313	2315	256	33	793	190
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	48	13	49	36	11	78	579	64	8	198	48
Total Analysis Volume [veh/h]	133	192	51	196	145	42	313	2315	256	33	793	190
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

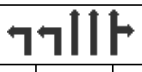
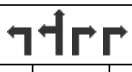
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.04	0.00	0.06	0.03	0.02	0.09	0.45	0.00	0.01	0.19	0.19
Intersection LOS	B											
Intersection V/C	0.609											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.731

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	601	1944	0	4	844	217	1013	0	223	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	601	1944	0	4	844	217	1013	0	223	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	150	486	0	1	211	54	253	0	56	0	0	0
Total Analysis Volume [veh/h]	601	1944	0	4	844	217	1013	0	223	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.18	0.38	0.00	0.00	0.17	0.13	0.30	0.00	0.00	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.731											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.641

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2507	401	113	1043	182	113
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2507	401	113	1043	182	113
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	627	100	28	261	46	28
Total Analysis Volume [veh/h]	2507	401	113	1043	182	113
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.49	0.24	0.03	0.20	0.05	0.07
Intersection LOS	B					
Intersection V/C	0.641					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.610

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	2116	496	337	680	0	668	0	349	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2116	496	337	680	0	668	0	349	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	529	124	84	170	0	167	0	87	0	0	0
Total Analysis Volume [veh/h]	0	2116	496	337	680	0	668	0	349	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.31	0.29	0.10	0.10	0.00	0.13	0.00	0.15	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.610											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.869

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	56	0	188	0	1501	150	161	2596	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	56	0	188	0	1501	150	161	2596	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	14	0	47	0	375	38	40	649	0
Total Analysis Volume [veh/h]	0	0	0	56	0	188	0	1501	150	161	2596	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.06	0.00	0.24	0.24	0.05	0.76	0.00
Intersection LOS	D											
Intersection V/C	0.869											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.735

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	321	0	294	0	0	0	0	1371	0	0	2369	162
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	321	0	294	0	0	0	0	1371	0	0	2369	162
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	0	74	0	0	0	0	343	0	0	592	41
Total Analysis Volume [veh/h]	321	0	294	0	0	0	0	1371	0	0	2369	162
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.17	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.50	0.50
Intersection LOS	C											
Intersection V/C	0.735											

Irvine Ranch Water District

Vistro File: N:\...\IRWD 2023 APP.vistro
Scenario 3 2023 APP PP Route 1A AM
Report File: N:\...\2023 APP PP Route 1A AM.pdf
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	WB Thru	0.456	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	SB Thru	0.689	-	B
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	WB Thru	0.589	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	SB Thru	0.630	-	B
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	SB Thru	0.700	-	B
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	SB Thru	0.704	-	C
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.652	-	B
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.544	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.456

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	268	0	155	0	0	0	0	602	477	407	865	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	268	45	155	0	27	0	0	602	477	407	865	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	11	39	0	7	0	0	151	119	102	216	0
Total Analysis Volume [veh/h]	268	45	155	0	27	0	0	602	477	407	865	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

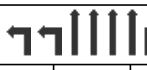
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.09	0.00	0.00	0.02	0.00	0.00	0.18	0.00	0.12	0.25	0.00
Intersection LOS	A											
Intersection V/C	0.456											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.689

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	104	233	472	429	803	80	69	1262	246	606	1007	213
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	278	472	429	830	80	69	1262	246	606	1007	213
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	70	118	107	208	20	17	316	62	152	252	53
Total Analysis Volume [veh/h]	104	278	472	429	830	80	69	1262	246	606	1007	213
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

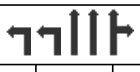
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.05	0.00	0.13	0.24	0.05	0.02	0.19	0.14	0.18	0.20	0.13
Intersection LOS	B											
Intersection V/C	0.689											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.589

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	218	334	49	189	256	14	73	580	186	103	1610	367
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	218	379	49	189	283	14	73	580	186	103	1610	367
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	95	12	47	71	4	18	145	47	26	403	92
Total Analysis Volume [veh/h]	218	379	49	189	283	14	73	580	186	103	1610	367
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

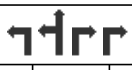
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.07	0.00	0.06	0.06	0.01	0.02	0.11	0.00	0.03	0.39	0.39
Intersection LOS	A											
Intersection V/C	0.589											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	236	532	1	0	2095	543	336	0	570	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	0	27	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	236	577	1	0	2095	570	336	0	570	1	0	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	144	0	0	524	143	84	0	143	0	0	0
Total Analysis Volume [veh/h]	236	577	1	0	2095	570	336	0	570	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.11	0.11	0.00	0.41	0.34	0.10	0.00	0.00	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.630											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.700

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	578	204	117	2594	479	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	45	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	623	204	117	2594	479	116
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	156	51	29	649	120	29
Total Analysis Volume [veh/h]	623	204	117	2594	479	116
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.12	0.03	0.51	0.14	0.07
Intersection LOS	B					
Intersection V/C	0.700					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.704

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	491	140	815	2178	0	252	0	1128	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	45	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	491	140	815	2178	0	297	0	1128	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	123	35	204	545	0	74	0	282	0	0	0
Total Analysis Volume [veh/h]	0	491	140	815	2178	0	297	0	1128	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.07	0.08	0.24	0.32	0.00	0.06	0.00	0.21	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.704											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.652

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	150	0	302	0	1746	354	403	1744	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	150	0	302	0	1746	354	403	1744	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	38	0	76	0	437	89	101	436	0
Total Analysis Volume [veh/h]	0	0	0	150	0	302	0	1746	354	403	1744	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.09	0.00	0.31	0.31	0.12	0.51	0.00
Intersection LOS	B											
Intersection V/C	0.652											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.544

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	117	0	120	0	0	0	0	1758	0	0	2062	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	117	0	120	0	0	0	0	1758	0	0	2062	98
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	0	30	0	0	0	0	440	0	0	516	25
Total Analysis Volume [veh/h]	117	0	120	0	0	0	0	1758	0	0	2062	98
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.07	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.42	0.42
Intersection LOS	A											
Intersection V/C	0.544											

Irvine Ranch Water District

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Report File: N:\...\2023 APP PP Route 1A PM.pdf 8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	NB Left	0.499	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	WB Thru	0.635	-	B
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	EB Thru	0.609	-	B
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	NB Thru	0.731	-	C
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	NB Thru	0.641	-	B
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	NB Thru	0.610	-	B
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.869	-	D
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Right	0.735	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.499

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	767	0	430	0	0	0	0	545	227	176	633	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	767	0	430	0	18	0	0	545	227	176	633	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	192	0	108	0	5	0	0	136	57	44	158	0
Total Analysis Volume [veh/h]	767	0	430	0	18	0	0	545	227	176	633	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

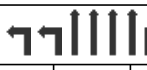
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.00	0.00	0.00	0.01	0.00	0.00	0.16	0.00	0.05	0.19	0.00
Intersection LOS	A											
Intersection V/C	0.499											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.635

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	341	881	577	177	317	94	185	920	177	530	1558	508
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	341	881	577	177	335	94	185	920	177	530	1558	508
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	85	220	144	44	84	24	46	230	44	133	390	127
Total Analysis Volume [veh/h]	341	881	577	177	335	94	185	920	177	530	1558	508
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

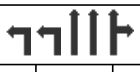
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.17	0.00	0.05	0.10	0.06	0.05	0.14	0.10	0.16	0.31	0.30
Intersection LOS	B											
Intersection V/C	0.635											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.609

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	133	192	51	196	145	42	313	2315	256	33	793	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	133	192	51	196	163	42	313	2315	256	33	793	190
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	48	13	49	41	11	78	579	64	8	198	48
Total Analysis Volume [veh/h]	133	192	51	196	163	42	313	2315	256	33	793	190
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

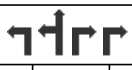
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.04	0.00	0.06	0.03	0.02	0.09	0.45	0.00	0.01	0.19	0.19
Intersection LOS	B											
Intersection V/C	0.609											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.731

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	601	1944	0	4	844	217	1013	0	223	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	18	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	601	1944	0	4	844	235	1013	0	223	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	150	486	0	1	211	59	253	0	56	0	0	0
Total Analysis Volume [veh/h]	601	1944	0	4	844	235	1013	0	223	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.18	0.38	0.00	0.00	0.17	0.14	0.30	0.00	0.00	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.731											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.641

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2507	401	113	1043	182	113
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2507	401	113	1043	182	113
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	627	100	28	261	46	28
Total Analysis Volume [veh/h]	2507	401	113	1043	182	113
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.49	0.24	0.03	0.20	0.05	0.07
Intersection LOS	B					
Intersection V/C	0.641					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.610

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	2116	496	337	680	0	668	0	349	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2116	496	337	680	0	668	0	349	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	529	124	84	170	0	167	0	87	0	0	0
Total Analysis Volume [veh/h]	0	2116	496	337	680	0	668	0	349	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.31	0.29	0.10	0.10	0.00	0.13	0.00	0.15	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.610											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.869

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		Yes			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	56	0	188	0	1501	150	161	2596	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	56	0	188	0	1501	150	161	2596	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	14	0	47	0	375	38	40	649	0
Total Analysis Volume [veh/h]	0	0	0	56	0	188	0	1501	150	161	2596	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.06	0.00	0.24	0.24	0.05	0.76	0.00
Intersection LOS	D											
Intersection V/C	0.869											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.735

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	321	0	294	0	0	0	0	1371	0	0	2369	162
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	321	0	294	0	0	0	0	1371	0	0	2369	162
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	0	74	0	0	0	0	343	0	0	592	41
Total Analysis Volume [veh/h]	321	0	294	0	0	0	0	1371	0	0	2369	162
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.17	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.50	0.50
Intersection LOS	C											
Intersection V/C	0.735											

Irvine Ranch Water District

Vistro File: N:\...\IRWD 2023 APP.vistro
Scenario 5 2023 APP PP Route 1B AM
Report File: N:\...\2023 APP PP Route 1B AM.pdf
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	WB Thru	0.456	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	SB Thru	0.689	-	B
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	WB Thru	0.589	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	SB Thru	0.648	-	B
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	SB Thru	0.705	-	C
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	SB Thru	0.712	-	C
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.652	-	B
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.544	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.456

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	268	0	155	0	0	0	0	602	477	407	865	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	268	45	155	0	27	0	0	602	477	407	865	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	11	39	0	7	0	0	151	119	102	216	0
Total Analysis Volume [veh/h]	268	45	155	0	27	0	0	602	477	407	865	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

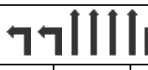
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.09	0.00	0.00	0.02	0.00	0.00	0.18	0.00	0.12	0.25	0.00
Intersection LOS	A											
Intersection V/C	0.456											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.689

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	104	233	472	429	803	80	69	1262	246	606	1007	213
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	278	472	429	830	80	69	1262	246	606	1007	213
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	70	118	107	208	20	17	316	62	152	252	53
Total Analysis Volume [veh/h]	104	278	472	429	830	80	69	1262	246	606	1007	213
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

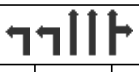
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.05	0.00	0.13	0.24	0.05	0.02	0.19	0.14	0.18	0.20	0.13
Intersection LOS	B											
Intersection V/C	0.689											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.589

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	218	334	49	189	256	14	73	580	186	103	1610	367
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	218	379	49	189	283	14	73	580	186	103	1610	367
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	95	12	47	71	4	18	145	47	26	403	92
Total Analysis Volume [veh/h]	218	379	49	189	283	14	73	580	186	103	1610	367
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

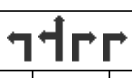
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.07	0.00	0.06	0.06	0.01	0.02	0.11	0.00	0.03	0.39	0.39
Intersection LOS	A											
Intersection V/C	0.589											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.648

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	236	532	1	0	2095	543	336	0	570	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	27	0	45	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	236	532	1	0	2122	543	381	0	570	1	0	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	133	0	0	531	136	95	0	143	0	0	0
Total Analysis Volume [veh/h]	236	532	1	0	2122	543	381	0	570	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.10	0.10	0.00	0.42	0.32	0.11	0.00	0.00	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.648											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.705

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	578	204	117	2594	479	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	27	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	578	204	117	2621	479	116
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	145	51	29	655	120	29
Total Analysis Volume [veh/h]	578	204	117	2621	479	116
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.12	0.03	0.51	0.14	0.07
Intersection LOS	C					
Intersection V/C	0.705					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.712

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	491	140	815	2178	0	252	0	1128	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	27	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	491	140	842	2178	0	252	0	1128	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	123	35	211	545	0	63	0	282	0	0	0
Total Analysis Volume [veh/h]	0	491	140	842	2178	0	252	0	1128	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.07	0.08	0.25	0.32	0.00	0.05	0.00	0.20	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.712											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.652

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	150	0	302	0	1746	354	403	1744	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	150	0	302	0	1746	354	403	1744	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	38	0	76	0	437	89	101	436	0
Total Analysis Volume [veh/h]	0	0	0	150	0	302	0	1746	354	403	1744	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.09	0.00	0.31	0.31	0.12	0.51	0.00
Intersection LOS	B											
Intersection V/C	0.652											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.544

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	117	0	120	0	0	0	0	1758	0	0	2062	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	117	0	120	0	0	0	0	1758	0	0	2062	98
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	0	30	0	0	0	0	440	0	0	516	25
Total Analysis Volume [veh/h]	117	0	120	0	0	0	0	1758	0	0	2062	98
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.07	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.42	0.42
Intersection LOS	A											
Intersection V/C	0.544											

Irvine Ranch Water District

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Scenario 6 2023 APP PP Route 1B PM
Report File: N:\...\2023 APP PP Route 1B PM.pdf
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	NB Left	0.499	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	WB Thru	0.635	-	B
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	EB Thru	0.609	-	B
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	NB Thru	0.731	-	C
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	NB Thru	0.641	-	B
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	NB Thru	0.615	-	B
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.869	-	D
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Right	0.735	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.499

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	767	0	430	0	0	0	0	545	227	176	633	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	767	0	430	0	18	0	0	545	227	176	633	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	192	0	108	0	5	0	0	136	57	44	158	0
Total Analysis Volume [veh/h]	767	0	430	0	18	0	0	545	227	176	633	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

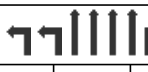
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.00	0.00	0.00	0.01	0.00	0.00	0.16	0.00	0.05	0.19	0.00
Intersection LOS	A											
Intersection V/C	0.499											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.635

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	341	881	577	177	317	94	185	920	177	530	1558	508
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	341	881	577	177	335	94	185	920	177	530	1558	508
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	85	220	144	44	84	24	46	230	44	133	390	127
Total Analysis Volume [veh/h]	341	881	577	177	335	94	185	920	177	530	1558	508
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

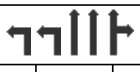
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.17	0.00	0.05	0.10	0.06	0.05	0.14	0.10	0.16	0.31	0.30
Intersection LOS	B											
Intersection V/C	0.635											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.609

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	133	192	51	196	145	42	313	2315	256	33	793	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	133	192	51	196	163	42	313	2315	256	33	793	190
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	48	13	49	41	11	78	579	64	8	198	48
Total Analysis Volume [veh/h]	133	192	51	196	163	42	313	2315	256	33	793	190
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

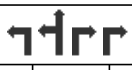
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.04	0.00	0.06	0.03	0.02	0.09	0.45	0.00	0.01	0.19	0.19
Intersection LOS	B											
Intersection V/C	0.609											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.731

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	601	1944	0	4	844	217	1013	0	223	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	601	1944	0	4	862	217	1013	0	223	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	150	486	0	1	216	54	253	0	56	0	0	0
Total Analysis Volume [veh/h]	601	1944	0	4	862	217	1013	0	223	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.18	0.38	0.00	0.00	0.17	0.13	0.30	0.00	0.00	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.731											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.641

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2507	401	113	1043	182	113
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2507	401	113	1061	182	113
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	627	100	28	265	46	28
Total Analysis Volume [veh/h]	2507	401	113	1061	182	113
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.49	0.24	0.03	0.21	0.05	0.07
Intersection LOS	B					
Intersection V/C	0.641					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.615

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	2116	496	337	680	0	668	0	349	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2116	496	355	680	0	668	0	349	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	529	124	89	170	0	167	0	87	0	0	0
Total Analysis Volume [veh/h]	0	2116	496	355	680	0	668	0	349	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.31	0.29	0.10	0.10	0.00	0.13	0.00	0.15	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.615											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.869

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	56	0	188	0	1501	150	161	2596	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	56	0	188	0	1501	150	161	2596	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	14	0	47	0	375	38	40	649	0
Total Analysis Volume [veh/h]	0	0	0	56	0	188	0	1501	150	161	2596	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.06	0.00	0.24	0.24	0.05	0.76	0.00
Intersection LOS	D											
Intersection V/C	0.869											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.735

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	321	0	294	0	0	0	0	1371	0	0	2369	162
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	321	0	294	0	0	0	0	1371	0	0	2369	162
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	0	74	0	0	0	0	343	0	0	592	41
Total Analysis Volume [veh/h]	321	0	294	0	0	0	0	1371	0	0	2369	162
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.17	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.50	0.50
Intersection LOS	C											
Intersection V/C	0.735											

Irvine Ranch Water District

Vistro File: N:\...\IRWD 2023 APP.vistro
Scenario 7 2023 APP PP Route 2A AM
Report File: N:\...\2023 APP PP Route 2A AM.pdf
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	WB Thru	0.456	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	SB Thru	0.681	-	B
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	WB Thru	0.580	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	SB Thru	0.630	-	B
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	SB Thru	0.700	-	B
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	SB Thru	0.704	-	C
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.665	-	B
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.544	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.456

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	268	0	155	0	0	0	0	602	477	407	865	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	268	45	155	0	27	0	0	602	477	407	865	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	11	39	0	7	0	0	151	119	102	216	0
Total Analysis Volume [veh/h]	268	45	155	0	27	0	0	602	477	407	865	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

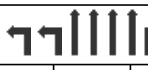
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.09	0.00	0.00	0.02	0.00	0.00	0.18	0.00	0.12	0.25	0.00
Intersection LOS	A											
Intersection V/C	0.456											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.681

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	104	233	472	429	803	80	69	1262	246	606	1007	213
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	27	0	0	0	0	0	0	0	45
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	233	472	456	803	80	69	1262	246	606	1007	258
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	58	118	114	201	20	17	316	62	152	252	65
Total Analysis Volume [veh/h]	104	233	472	456	803	80	69	1262	246	606	1007	258
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

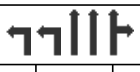
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.05	0.00	0.13	0.24	0.05	0.02	0.19	0.14	0.18	0.20	0.15
Intersection LOS	B											
Intersection V/C	0.681											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.580

Intersection Setup

Name											
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	218	334	49	189	256	14	73	580	186	103	1610	367
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	218	334	49	189	256	14	73	580	186	103	1610	367
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	84	12	47	64	4	18	145	47	26	403	92
Total Analysis Volume [veh/h]	218	334	49	189	256	14	73	580	186	103	1610	367
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

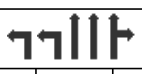
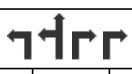
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.07	0.00	0.06	0.05	0.01	0.02	0.11	0.00	0.03	0.39	0.39
Intersection LOS	A											
Intersection V/C	0.580											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	236	532	1	0	2095	543	336	0	570	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	236	532	1	0	2095	543	336	0	570	1	0	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	133	0	0	524	136	84	0	143	0	0	0
Total Analysis Volume [veh/h]	236	532	1	0	2095	543	336	0	570	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.10	0.10	0.00	0.41	0.32	0.10	0.00	0.00	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.630											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.700

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	578	204	117	2594	479	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	578	204	117	2594	479	116
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	145	51	29	649	120	29
Total Analysis Volume [veh/h]	578	204	117	2594	479	116
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.12	0.03	0.51	0.14	0.07
Intersection LOS	B					
Intersection V/C	0.700					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.704

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	491	140	815	2178	0	252	0	1128	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	491	140	815	2178	0	252	0	1128	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	123	35	204	545	0	63	0	282	0	0	0
Total Analysis Volume [veh/h]	0	491	140	815	2178	0	252	0	1128	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.07	0.08	0.24	0.32	0.00	0.05	0.00	0.20	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.704											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.665

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	150	0	302	0	1746	354	403	1744	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	45	0	27	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	150	0	347	0	1773	354	403	1744	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	38	0	87	0	443	89	101	436	0
Total Analysis Volume [veh/h]	0	0	0	150	0	347	0	1773	354	403	1744	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.10	0.00	0.31	0.31	0.12	0.51	0.00
Intersection LOS	B											
Intersection V/C	0.665											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.544

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	117	0	120	0	0	0	0	1758	0	0	2062	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	117	0	120	0	0	0	0	1758	0	0	2062	98
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	0	30	0	0	0	0	440	0	0	516	25
Total Analysis Volume [veh/h]	117	0	120	0	0	0	0	1758	0	0	2062	98
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.07	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.42	0.42
Intersection LOS	A											
Intersection V/C	0.544											

Irvine Ranch Water District

Vistro File: N:\...\IRWD 2023 APP.vistro
Scenario 8 2023 APP PP Route 2A PM
Report File: N:\...\2023 APP PP Route 2A PM.pdf
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	NB Left	0.499	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	WB Thru	0.640	-	B
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	EB Thru	0.609	-	B
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	NB Thru	0.731	-	C
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	NB Thru	0.641	-	B
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	NB Thru	0.610	-	B
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.869	-	D
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Right	0.735	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.499

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	767	0	430	0	0	0	0	545	227	176	633	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	767	0	430	0	18	0	0	545	227	176	633	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	192	0	108	0	5	0	0	136	57	44	158	0
Total Analysis Volume [veh/h]	767	0	430	0	18	0	0	545	227	176	633	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

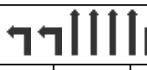
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.00	0.00	0.00	0.01	0.00	0.00	0.16	0.00	0.05	0.19	0.00
Intersection LOS	A											
Intersection V/C	0.499											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.640

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	341	881	577	177	317	94	185	920	177	530	1558	508
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	341	881	577	195	317	94	185	920	177	530	1558	508
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	85	220	144	49	79	24	46	230	44	133	390	127
Total Analysis Volume [veh/h]	341	881	577	195	317	94	185	920	177	530	1558	508
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

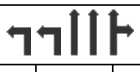
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.17	0.00	0.06	0.09	0.06	0.05	0.14	0.10	0.16	0.31	0.30
Intersection LOS	B											
Intersection V/C	0.640											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.609

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	133	192	51	196	145	42	313	2315	256	33	793	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	133	192	51	196	145	42	313	2315	256	33	793	190
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	48	13	49	36	11	78	579	64	8	198	48
Total Analysis Volume [veh/h]	133	192	51	196	145	42	313	2315	256	33	793	190
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

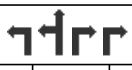
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.04	0.00	0.06	0.03	0.02	0.09	0.45	0.00	0.01	0.19	0.19
Intersection LOS	B											
Intersection V/C	0.609											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.731

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	601	1944	0	4	844	217	1013	0	223	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	601	1944	0	4	844	217	1013	0	223	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	150	486	0	1	211	54	253	0	56	0	0	0
Total Analysis Volume [veh/h]	601	1944	0	4	844	217	1013	0	223	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.18	0.38	0.00	0.00	0.17	0.13	0.30	0.00	0.00	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.731											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.641

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2507	401	113	1043	182	113
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2507	401	113	1043	182	113
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	627	100	28	261	46	28
Total Analysis Volume [veh/h]	2507	401	113	1043	182	113
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.49	0.24	0.03	0.20	0.05	0.07
Intersection LOS	B					
Intersection V/C	0.641					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.610

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	2116	496	337	680	0	668	0	349	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2116	496	337	680	0	668	0	349	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	529	124	84	170	0	167	0	87	0	0	0
Total Analysis Volume [veh/h]	0	2116	496	337	680	0	668	0	349	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.31	0.29	0.10	0.10	0.00	0.13	0.00	0.15	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.610											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.869

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		Yes			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	56	0	188	0	1501	150	161	2596	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	18	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	56	0	188	0	1519	150	161	2596	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	14	0	47	0	380	38	40	649	0
Total Analysis Volume [veh/h]	0	0	0	56	0	188	0	1519	150	161	2596	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.06	0.00	0.25	0.25	0.05	0.76	0.00
Intersection LOS	D											
Intersection V/C	0.869											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.735

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	321	0	294	0	0	0	0	1371	0	0	2369	162
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	321	0	294	0	0	0	0	1371	0	0	2369	162
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	0	74	0	0	0	0	343	0	0	592	41
Total Analysis Volume [veh/h]	321	0	294	0	0	0	0	1371	0	0	2369	162
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.17	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.50	0.50
Intersection LOS	C											
Intersection V/C	0.735											

Irvine Ranch Water District

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Scenario 9 2023 APP PP Route 2B AM
Report File: N:\...\2023 APP PP Route 2B AM.pdf
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	WB Thru	0.456	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	SB Thru	0.681	-	B
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	WB Thru	0.580	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	SB Thru	0.630	-	B
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	SB Thru	0.700	-	B
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	SB Thru	0.704	-	C
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.665	-	B
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.569	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.456

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	268	0	155	0	0	0	0	602	477	407	865	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	268	45	155	0	27	0	0	602	477	407	865	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	11	39	0	7	0	0	151	119	102	216	0
Total Analysis Volume [veh/h]	268	45	155	0	27	0	0	602	477	407	865	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

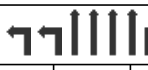
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.09	0.00	0.00	0.02	0.00	0.00	0.18	0.00	0.12	0.25	0.00
Intersection LOS	A											
Intersection V/C	0.456											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.681

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	104	233	472	429	803	80	69	1262	246	606	1007	213
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	27	0	0	0	0	0	0	0	45
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	233	472	456	803	80	69	1262	246	606	1007	258
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	58	118	114	201	20	17	316	62	152	252	65
Total Analysis Volume [veh/h]	104	233	472	456	803	80	69	1262	246	606	1007	258
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

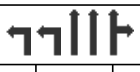
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.05	0.00	0.13	0.24	0.05	0.02	0.19	0.14	0.18	0.20	0.15
Intersection LOS	B											
Intersection V/C	0.681											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.580

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	218	334	49	189	256	14	73	580	186	103	1610	367
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	218	334	49	189	256	14	73	580	186	103	1610	367
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	84	12	47	64	4	18	145	47	26	403	92
Total Analysis Volume [veh/h]	218	334	49	189	256	14	73	580	186	103	1610	367
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

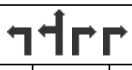
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.07	0.00	0.06	0.05	0.01	0.02	0.11	0.00	0.03	0.39	0.39
Intersection LOS	A											
Intersection V/C	0.580											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.630

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	236	532	1	0	2095	543	336	0	570	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	236	532	1	0	2095	543	336	0	570	1	0	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	59	133	0	0	524	136	84	0	143	0	0	0
Total Analysis Volume [veh/h]	236	532	1	0	2095	543	336	0	570	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.10	0.10	0.00	0.41	0.32	0.10	0.00	0.00	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.630											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.700

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	578	204	117	2594	479	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	578	204	117	2594	479	116
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	145	51	29	649	120	29
Total Analysis Volume [veh/h]	578	204	117	2594	479	116
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.12	0.03	0.51	0.14	0.07
Intersection LOS	B					
Intersection V/C	0.700					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.704

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	491	140	815	2178	0	252	0	1128	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	491	140	815	2178	0	252	0	1128	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	123	35	204	545	0	63	0	282	0	0	0
Total Analysis Volume [veh/h]	0	491	140	815	2178	0	252	0	1128	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.07	0.08	0.24	0.32	0.00	0.05	0.00	0.20	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.704											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.665

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	150	0	302	0	1746	354	403	1744	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	27	0	45	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	150	0	302	0	1746	381	403	1789	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	38	0	76	0	437	95	101	447	0
Total Analysis Volume [veh/h]	0	0	0	150	0	302	0	1746	381	403	1789	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.09	0.00	0.31	0.31	0.12	0.53	0.00
Intersection LOS	B											
Intersection V/C	0.665											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.569

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	117	0	120	0	0	0	0	1758	0	0	2062	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	45	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	162	0	120	0	0	0	0	1758	0	0	2062	98
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	0	30	0	0	0	0	440	0	0	516	25
Total Analysis Volume [veh/h]	162	0	120	0	0	0	0	1758	0	0	2062	98
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.07	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.42	0.42
Intersection LOS	A											
Intersection V/C	0.569											

Irvine Ranch Water District

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Report File: N:\...\2023 APP PP Route 2B PM.pdf 8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	NB Left	0.499	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	WB Thru	0.640	-	B
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	EB Thru	0.609	-	B
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	NB Thru	0.731	-	C
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	NB Thru	0.641	-	B
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	NB Thru	0.610	-	B
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.869	-	D
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Right	0.735	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.499

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	767	0	430	0	0	0	0	545	227	176	633	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	767	0	430	0	18	0	0	545	227	176	633	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	192	0	108	0	5	0	0	136	57	44	158	0
Total Analysis Volume [veh/h]	767	0	430	0	18	0	0	545	227	176	633	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

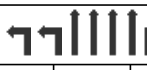
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.00	0.00	0.00	0.01	0.00	0.00	0.16	0.00	0.05	0.19	0.00
Intersection LOS	A											
Intersection V/C	0.499											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.640

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	341	881	577	177	317	94	185	920	177	530	1558	508
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	341	881	577	195	317	94	185	920	177	530	1558	508
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	85	220	144	49	79	24	46	230	44	133	390	127
Total Analysis Volume [veh/h]	341	881	577	195	317	94	185	920	177	530	1558	508
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

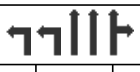
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.17	0.00	0.06	0.09	0.06	0.05	0.14	0.10	0.16	0.31	0.30
Intersection LOS	B											
Intersection V/C	0.640											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.609

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	133	192	51	196	145	42	313	2315	256	33	793	190
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	133	192	51	196	145	42	313	2315	256	33	793	190
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	33	48	13	49	36	11	78	579	64	8	198	48
Total Analysis Volume [veh/h]	133	192	51	196	145	42	313	2315	256	33	793	190
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

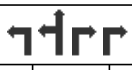
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.04	0.00	0.06	0.03	0.02	0.09	0.45	0.00	0.01	0.19	0.19
Intersection LOS	B											
Intersection V/C	0.609											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.731

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	601	1944	0	4	844	217	1013	0	223	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	601	1944	0	4	844	217	1013	0	223	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	150	486	0	1	211	54	253	0	56	0	0	0
Total Analysis Volume [veh/h]	601	1944	0	4	844	217	1013	0	223	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.18	0.38	0.00	0.00	0.17	0.13	0.30	0.00	0.00	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.731											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.641

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2507	401	113	1043	182	113
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2507	401	113	1043	182	113
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	627	100	28	261	46	28
Total Analysis Volume [veh/h]	2507	401	113	1043	182	113
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.49	0.24	0.03	0.20	0.05	0.07
Intersection LOS	B					
Intersection V/C	0.641					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.610

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	2116	496	337	680	0	668	0	349	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2116	496	337	680	0	668	0	349	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	529	124	84	170	0	167	0	87	0	0	0
Total Analysis Volume [veh/h]	0	2116	496	337	680	0	668	0	349	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.31	0.29	0.10	0.10	0.00	0.13	0.00	0.15	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.610											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.869

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	56	0	188	0	1501	150	161	2596	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	18	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	56	0	188	0	1501	168	161	2596	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	14	0	47	0	375	42	40	649	0
Total Analysis Volume [veh/h]	0	0	0	56	0	188	0	1501	168	161	2596	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.06	0.00	0.25	0.25	0.05	0.76	0.00
Intersection LOS	D											
Intersection V/C	0.869											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.735

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	321	0	294	0	0	0	0	1371	0	0	2369	162
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	321	0	294	0	0	0	0	1371	0	0	2369	162
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	80	0	74	0	0	0	0	343	0	0	592	41
Total Analysis Volume [veh/h]	321	0	294	0	0	0	0	1371	0	0	2369	162
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.17	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.50	0.50
Intersection LOS	C											
Intersection V/C	0.735											

Interim Year (2023) Pending Project Conditions

Irvine Ranch Water District

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Report File: N:\...\2023 PEN NB AM.pdf

Scenario 1 2023 PEN NB AM
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	WB Thru	0.439	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	SB Thru	0.704	-	C
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	WB Thru	0.600	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	SB Thru	0.651	-	B
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	SB Thru	0.723	-	C
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	SB Thru	0.728	-	C
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.674	-	B
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Right	0.562	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.439

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	1	0	1	2	0
Pocket Length [ft]	280.00	500.00	100.00	300.00	380.00	100.00
Speed [mph]	50.00		50.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	278	160	624	495	422	896
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	278	160	624	495	422	896
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	40	156	124	106	224
Total Analysis Volume [veh/h]	278	160	624	495	422	896
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Overlap	Permissive	Unsignalized	Protected	Permissive
Signal Group	6	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-

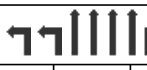
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.00	0.18	0.00	0.12	0.26
Intersection LOS	A					
Intersection V/C	0.439					

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.704

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	108	241	490	445	832	83	72	1308	255	628	1044	221
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	241	490	445	832	83	72	1308	255	628	1044	221
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	60	123	111	208	21	18	327	64	157	261	55
Total Analysis Volume [veh/h]	108	241	490	445	832	83	72	1308	255	628	1044	221
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

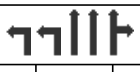
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.05	0.00	0.13	0.24	0.05	0.02	0.19	0.15	0.18	0.20	0.13
Intersection LOS	C											
Intersection V/C	0.704											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.600

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	226	346	51	196	265	14	76	601	192	106	1669	381
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	226	346	51	196	265	14	76	601	192	106	1669	381
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	87	13	49	66	4	19	150	48	27	417	95
Total Analysis Volume [veh/h]	226	346	51	196	265	14	76	601	192	106	1669	381
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

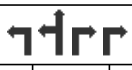
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.07	0.00	0.06	0.05	0.01	0.02	0.12	0.00	0.03	0.40	0.40
Intersection LOS	A											
Intersection V/C	0.600											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	245	551	1	0	2172	563	349	0	591	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	245	551	1	0	2172	563	349	0	591	1	0	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	138	0	0	543	141	87	0	148	0	0	0
Total Analysis Volume [veh/h]	245	551	1	0	2172	563	349	0	591	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.11	0.11	0.00	0.43	0.33	0.10	0.00	0.00	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.651											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.723

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	599	212	122	2689	496	121
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	599	212	122	2689	496	121
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	150	53	31	672	124	30
Total Analysis Volume [veh/h]	599	212	122	2689	496	121
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.12	0.04	0.53	0.15	0.07
Intersection LOS	C					
Intersection V/C	0.723					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.728

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	509	145	845	2258	0	262	0	1169	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	509	145	845	2258	0	262	0	1169	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	127	36	211	565	0	66	0	292	0	0	0
Total Analysis Volume [veh/h]	0	509	145	845	2258	0	262	0	1169	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.07	0.09	0.25	0.33	0.00	0.05	0.00	0.21	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.728											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.674

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	155	0	313	0	1810	367	418	1808	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	155	0	313	0	1810	367	418	1808	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	39	0	78	0	453	92	105	452	0
Total Analysis Volume [veh/h]	0	0	0	155	0	313	0	1810	367	418	1808	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.09	0.00	0.32	0.32	0.12	0.53	0.00
Intersection LOS	B											
Intersection V/C	0.674											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.562

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	122	0	124	0	0	0	0	1822	0	0	2137	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	0	124	0	0	0	0	1822	0	0	2137	101
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	0	31	0	0	0	0	456	0	0	534	25
Total Analysis Volume [veh/h]	122	0	124	0	0	0	0	1822	0	0	2137	101
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.07	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.44	0.44
Intersection LOS	A											
Intersection V/C	0.562											

Irvine Ranch Water District

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Report File: N:\...\2023 PEN NB PM.pdf

Scenario 2 2023 PEN NB PM
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	NB Left	0.495	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	WB Thru	0.644	-	B
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	EB Thru	0.618	-	B
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	NB Thru	0.743	-	C
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	NB Thru	0.651	-	B
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	NB Thru	0.619	-	B
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.883	-	D
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.746	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.495

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	1	0	1	2	0
Pocket Length [ft]	280.00	500.00	100.00	300.00	380.00	100.00
Speed [mph]	50.00		50.00		55.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		Yes	

Volumes

Name						
Base Volume Input [veh/h]	780	437	554	230	179	644
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	780	437	554	230	179	644
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	195	109	139	58	45	161
Total Analysis Volume [veh/h]	780	437	554	230	179	644
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Overlap	Permissive	Unsignalized	Protected	Permissive
Signal Group	6	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-

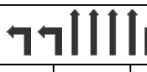
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.00	0.16	0.00	0.05	0.19
Intersection LOS	A					
Intersection V/C	0.495					

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.644

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	346	895	587	180	322	96	188	936	180	539	1584	516
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	346	895	587	180	322	96	188	936	180	539	1584	516
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	87	224	147	45	81	24	47	234	45	135	396	129
Total Analysis Volume [veh/h]	346	895	587	180	322	96	188	936	180	539	1584	516
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

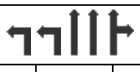
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.18	0.00	0.05	0.09	0.06	0.06	0.14	0.11	0.16	0.31	0.30
Intersection LOS	B											
Intersection V/C	0.644											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.618

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	135	195	52	199	147	43	319	2354	261	34	806	193
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	135	195	52	199	147	43	319	2354	261	34	806	193
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	49	13	50	37	11	80	589	65	9	202	48
Total Analysis Volume [veh/h]	135	195	52	199	147	43	319	2354	261	34	806	193
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

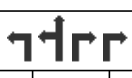
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.04	0.00	0.06	0.03	0.03	0.09	0.46	0.00	0.01	0.20	0.20
Intersection LOS	B											
Intersection V/C	0.618											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.743

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	611	1976	0	4	858	220	1030	0	227	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	611	1976	0	4	858	220	1030	0	227	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	153	494	0	1	215	55	258	0	57	0	0	0
Total Analysis Volume [veh/h]	611	1976	0	4	858	220	1030	0	227	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.18	0.39	0.00	0.00	0.17	0.13	0.30	0.00	0.00	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.743											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2549	408	115	1060	185	115
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2549	408	115	1060	185	115
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	637	102	29	265	46	29
Total Analysis Volume [veh/h]	2549	408	115	1060	185	115
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.50	0.24	0.03	0.21	0.05	0.07
Intersection LOS	B					
Intersection V/C	0.651					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.619

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	2151	504	343	691	0	679	0	355	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2151	504	343	691	0	679	0	355	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	538	126	86	173	0	170	0	89	0	0	0
Total Analysis Volume [veh/h]	0	2151	504	343	691	0	679	0	355	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.32	0.30	0.10	0.10	0.00	0.13	0.00	0.15	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.619											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.883

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]		30.00			30.00			30.00			30.00	
Grade [%]		0.00			0.00			0.00			0.00	
Crosswalk		Yes			Yes			No			No	

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	57	0	191	0	1526	152	164	2640	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	57	0	191	0	1526	152	164	2640	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	14	0	48	0	382	38	41	660	0
Total Analysis Volume [veh/h]	0	0	0	57	0	191	0	1526	152	164	2640	0
Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			0			0			0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.06	0.00	0.25	0.25	0.05	0.78	0.00
Intersection LOS	D											
Intersection V/C	0.883											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.746

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	326	0	298	0	0	0	0	1394	0	0	2408	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	0	298	0	0	0	0	1394	0	0	2408	165
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	82	0	75	0	0	0	0	349	0	0	602	41
Total Analysis Volume [veh/h]	326	0	298	0	0	0	0	1394	0	0	2408	165
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.18	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.50	0.50
Intersection LOS	C											
Intersection V/C	0.746											

Irvine Ranch Water District

Vistro File: N:\...\IRWD 2023 APP.vistro
Scenario 3 2023 PEN PP Route 1A AM
Report File: N:\...\2023 PEN PP Route 1A AM.pdf
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	WB Thru	0.470	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	SB Thru	0.711	-	C
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	WB Thru	0.609	-	B
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	SB Thru	0.651	-	B
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	SB Thru	0.723	-	C
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	SB Thru	0.728	-	C
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.674	-	B
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Right	0.562	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.470

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	278	0	160	0	0	0	0	624	495	422	896	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	278	45	160	0	27	0	0	624	495	422	896	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	11	40	0	7	0	0	156	124	106	224	0
Total Analysis Volume [veh/h]	278	45	160	0	27	0	0	624	495	422	896	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

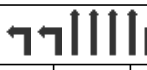
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.10	0.00	0.00	0.02	0.00	0.00	0.18	0.00	0.12	0.26	0.00
Intersection LOS	A											
Intersection V/C	0.470											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.711

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	108	241	490	445	832	83	72	1308	255	628	1044	221
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	286	490	445	859	83	72	1308	255	628	1044	221
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	72	123	111	215	21	18	327	64	157	261	55
Total Analysis Volume [veh/h]	108	286	490	445	859	83	72	1308	255	628	1044	221
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

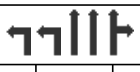
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.06	0.00	0.13	0.25	0.05	0.02	0.19	0.15	0.18	0.20	0.13
Intersection LOS	C											
Intersection V/C	0.711											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.609

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	226	346	51	196	265	14	76	601	192	106	1669	381
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	226	391	51	196	292	14	76	601	192	106	1669	381
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	98	13	49	73	4	19	150	48	27	417	95
Total Analysis Volume [veh/h]	226	391	51	196	292	14	76	601	192	106	1669	381
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

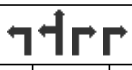
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.08	0.00	0.06	0.06	0.01	0.02	0.12	0.00	0.03	0.40	0.40
Intersection LOS	B											
Intersection V/C	0.609											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	245	551	1	0	2172	563	349	0	591	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	0	27	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	245	596	1	0	2172	590	349	0	591	1	0	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	149	0	0	543	148	87	0	148	0	0	0
Total Analysis Volume [veh/h]	245	596	1	0	2172	590	349	0	591	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.12	0.12	0.00	0.43	0.35	0.10	0.00	0.00	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.651											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.723

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	599	212	122	2689	496	121
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	45	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	644	212	122	2689	496	121
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	161	53	31	672	124	30
Total Analysis Volume [veh/h]	644	212	122	2689	496	121
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.12	0.04	0.53	0.15	0.07
Intersection LOS	C					
Intersection V/C	0.723					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.728

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	509	145	845	2258	0	262	0	1169	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	45	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	509	145	845	2258	0	307	0	1169	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	127	36	211	565	0	77	0	292	0	0	0
Total Analysis Volume [veh/h]	0	509	145	845	2258	0	307	0	1169	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.07	0.09	0.25	0.33	0.00	0.06	0.00	0.22	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.728											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.674

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	155	0	313	0	1810	367	418	1808	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	155	0	313	0	1810	367	418	1808	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	39	0	78	0	453	92	105	452	0
Total Analysis Volume [veh/h]	0	0	0	155	0	313	0	1810	367	418	1808	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.09	0.00	0.32	0.32	0.12	0.53	0.00
Intersection LOS	B											
Intersection V/C	0.674											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.562

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	122	0	124	0	0	0	0	1822	0	0	2137	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	0	124	0	0	0	0	1822	0	0	2137	101
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	0	31	0	0	0	0	456	0	0	534	25
Total Analysis Volume [veh/h]	122	0	124	0	0	0	0	1822	0	0	2137	101
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.07	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.44	0.44
Intersection LOS	A											
Intersection V/C	0.562											

Irvine Ranch Water District

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Scenario 4 2023 PEN PP Route 1A PM
Report File: N:\...\2023 PEN PP Route 1A PM.pdf
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	NB Left	0.506	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	WB Thru	0.644	-	B
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	EB Thru	0.618	-	B
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	NB Thru	0.743	-	C
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	NB Thru	0.651	-	B
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	NB Thru	0.619	-	B
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.883	-	D
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.746	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.506

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	780	0	437	0	0	0	0	554	230	179	644	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	780	0	437	0	18	0	0	554	230	179	644	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	195	0	109	0	5	0	0	139	58	45	161	0
Total Analysis Volume [veh/h]	780	0	437	0	18	0	0	554	230	179	644	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

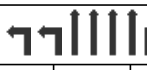
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.00	0.00	0.00	0.01	0.00	0.00	0.16	0.00	0.05	0.19	0.00
Intersection LOS	A											
Intersection V/C	0.506											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.644

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	346	895	587	180	322	96	188	936	180	539	1584	516
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	346	895	587	180	340	96	188	936	180	539	1584	516
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	87	224	147	45	85	24	47	234	45	135	396	129
Total Analysis Volume [veh/h]	346	895	587	180	340	96	188	936	180	539	1584	516
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

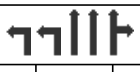
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.18	0.00	0.05	0.10	0.06	0.06	0.14	0.11	0.16	0.31	0.30
Intersection LOS	B											
Intersection V/C	0.644											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.618

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	135	195	52	199	147	43	319	2354	261	34	806	193
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	135	195	52	199	165	43	319	2354	261	34	806	193
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	49	13	50	41	11	80	589	65	9	202	48
Total Analysis Volume [veh/h]	135	195	52	199	165	43	319	2354	261	34	806	193
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

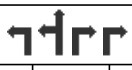
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.04	0.00	0.06	0.03	0.03	0.09	0.46	0.00	0.01	0.20	0.20
Intersection LOS	B											
Intersection V/C	0.618											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.743

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	611	1976	0	4	858	220	1030	0	227	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	18	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	611	1976	0	4	858	238	1030	0	227	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	153	494	0	1	215	60	258	0	57	0	0	0
Total Analysis Volume [veh/h]	611	1976	0	4	858	238	1030	0	227	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.18	0.39	0.00	0.00	0.17	0.14	0.30	0.00	0.00	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.743											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2549	408	115	1060	185	115
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2549	408	115	1060	185	115
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	637	102	29	265	46	29
Total Analysis Volume [veh/h]	2549	408	115	1060	185	115
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.50	0.24	0.03	0.21	0.05	0.07
Intersection LOS	B					
Intersection V/C	0.651					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.619

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	2151	504	343	691	0	679	0	355	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2151	504	343	691	0	679	0	355	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	538	126	86	173	0	170	0	89	0	0	0
Total Analysis Volume [veh/h]	0	2151	504	343	691	0	679	0	355	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.32	0.30	0.10	0.10	0.00	0.13	0.00	0.15	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.619											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.883

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	57	0	191	0	1526	152	164	2640	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	57	0	191	0	1526	152	164	2640	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	14	0	48	0	382	38	41	660	0
Total Analysis Volume [veh/h]	0	0	0	57	0	191	0	1526	152	164	2640	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.06	0.00	0.25	0.25	0.05	0.78	0.00
Intersection LOS	D											
Intersection V/C	0.883											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.746

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	326	0	298	0	0	0	0	1394	0	0	2408	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	0	298	0	0	0	0	1394	0	0	2408	165
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	82	0	75	0	0	0	0	349	0	0	602	41
Total Analysis Volume [veh/h]	326	0	298	0	0	0	0	1394	0	0	2408	165
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.18	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.50	0.50
Intersection LOS	C											
Intersection V/C	0.746											

Irvine Ranch Water District

Vistro File: N:\...\IRWD 2023 APP.vistro Scenario 5 2023 PEN PP Route 1B AM
Report File: N:\...\2023 PEN PP Route 1B AM.pdf 8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	WB Thru	0.470	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	SB Thru	0.711	-	C
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	WB Thru	0.609	-	B
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	SB Thru	0.670	-	B
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	SB Thru	0.728	-	C
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	SB Thru	0.736	-	C
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.674	-	B
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Right	0.562	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.470

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	278	0	160	0	0	0	0	624	495	422	896	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	278	45	160	0	27	0	0	624	495	422	896	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	11	40	0	7	0	0	156	124	106	224	0
Total Analysis Volume [veh/h]	278	45	160	0	27	0	0	624	495	422	896	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

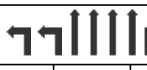
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.10	0.00	0.00	0.02	0.00	0.00	0.18	0.00	0.12	0.26	0.00
Intersection LOS	A											
Intersection V/C	0.470											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.711

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	108	241	490	445	832	83	72	1308	255	628	1044	221
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	286	490	445	859	83	72	1308	255	628	1044	221
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	72	123	111	215	21	18	327	64	157	261	55
Total Analysis Volume [veh/h]	108	286	490	445	859	83	72	1308	255	628	1044	221
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

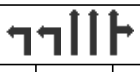
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.06	0.00	0.13	0.25	0.05	0.02	0.19	0.15	0.18	0.20	0.13
Intersection LOS	C											
Intersection V/C	0.711											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.609

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	226	346	51	196	265	14	76	601	192	106	1669	381
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	226	391	51	196	292	14	76	601	192	106	1669	381
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	98	13	49	73	4	19	150	48	27	417	95
Total Analysis Volume [veh/h]	226	391	51	196	292	14	76	601	192	106	1669	381
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

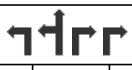
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.08	0.00	0.06	0.06	0.01	0.02	0.12	0.00	0.03	0.40	0.40
Intersection LOS	B											
Intersection V/C	0.609											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.670

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	245	551	1	0	2172	563	349	0	591	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	27	0	45	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	245	551	1	0	2199	563	394	0	591	1	0	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	138	0	0	550	141	99	0	148	0	0	0
Total Analysis Volume [veh/h]	245	551	1	0	2199	563	394	0	591	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.11	0.11	0.00	0.43	0.33	0.12	0.00	0.00	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.670											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.728

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	599	212	122	2689	496	121
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	27	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	599	212	122	2716	496	121
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	150	53	31	679	124	30
Total Analysis Volume [veh/h]	599	212	122	2716	496	121
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.12	0.04	0.53	0.15	0.07
Intersection LOS	C					
Intersection V/C	0.728					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.736

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	509	145	845	2258	0	262	0	1169	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	27	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	509	145	872	2258	0	262	0	1169	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	127	36	218	565	0	66	0	292	0	0	0
Total Analysis Volume [veh/h]	0	509	145	872	2258	0	262	0	1169	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.07	0.09	0.26	0.33	0.00	0.05	0.00	0.21	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.736											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.674

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	155	0	313	0	1810	367	418	1808	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	155	0	313	0	1810	367	418	1808	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	39	0	78	0	453	92	105	452	0
Total Analysis Volume [veh/h]	0	0	0	155	0	313	0	1810	367	418	1808	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.09	0.00	0.32	0.32	0.12	0.53	0.00
Intersection LOS	B											
Intersection V/C	0.674											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.562

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	122	0	124	0	0	0	0	1822	0	0	2137	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	0	124	0	0	0	0	1822	0	0	2137	101
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	0	31	0	0	0	0	456	0	0	534	25
Total Analysis Volume [veh/h]	122	0	124	0	0	0	0	1822	0	0	2137	101
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.07	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.44	0.44
Intersection LOS	A											
Intersection V/C	0.562											

Irvine Ranch Water District

Vistro File: N:\...\IRWD 2023 APP.vistro
Scenario 6 2023 PEN PP Route 1B PM
Report File: N:\...\2023 PEN PP Route 1B PM.pdf
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	NB Left	0.506	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	WB Thru	0.644	-	B
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	EB Thru	0.618	-	B
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	NB Thru	0.743	-	C
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	NB Thru	0.651	-	B
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	NB Thru	0.625	-	B
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.883	-	D
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.746	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.506

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	780	0	437	0	0	0	0	554	230	179	644	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	780	0	437	0	18	0	0	554	230	179	644	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	195	0	109	0	5	0	0	139	58	45	161	0
Total Analysis Volume [veh/h]	780	0	437	0	18	0	0	554	230	179	644	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

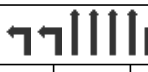
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.00	0.00	0.00	0.01	0.00	0.00	0.16	0.00	0.05	0.19	0.00
Intersection LOS	A											
Intersection V/C	0.506											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.644

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	346	895	587	180	322	96	188	936	180	539	1584	516
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	346	895	587	180	340	96	188	936	180	539	1584	516
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	87	224	147	45	85	24	47	234	45	135	396	129
Total Analysis Volume [veh/h]	346	895	587	180	340	96	188	936	180	539	1584	516
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

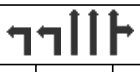
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.18	0.00	0.05	0.10	0.06	0.06	0.14	0.11	0.16	0.31	0.30
Intersection LOS	B											
Intersection V/C	0.644											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.618

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	135	195	52	199	147	43	319	2354	261	34	806	193
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	135	195	52	199	165	43	319	2354	261	34	806	193
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	49	13	50	41	11	80	589	65	9	202	48
Total Analysis Volume [veh/h]	135	195	52	199	165	43	319	2354	261	34	806	193
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

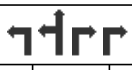
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.04	0.00	0.06	0.03	0.03	0.09	0.46	0.00	0.01	0.20	0.20
Intersection LOS	B											
Intersection V/C	0.618											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.743

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	611	1976	0	4	858	220	1030	0	227	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	611	1976	0	4	876	220	1030	0	227	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	153	494	0	1	219	55	258	0	57	0	0	0
Total Analysis Volume [veh/h]	611	1976	0	4	876	220	1030	0	227	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.18	0.39	0.00	0.00	0.17	0.13	0.30	0.00	0.00	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.743											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2549	408	115	1060	185	115
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2549	408	115	1078	185	115
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	637	102	29	270	46	29
Total Analysis Volume [veh/h]	2549	408	115	1078	185	115
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.50	0.24	0.03	0.21	0.05	0.07
Intersection LOS	B					
Intersection V/C	0.651					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.625

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	2151	504	343	691	0	679	0	355	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2151	504	361	691	0	679	0	355	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	538	126	90	173	0	170	0	89	0	0	0
Total Analysis Volume [veh/h]	0	2151	504	361	691	0	679	0	355	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.32	0.30	0.11	0.10	0.00	0.13	0.00	0.15	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.625											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.883

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	57	0	191	0	1526	152	164	2640	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	57	0	191	0	1526	152	164	2640	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	14	0	48	0	382	38	41	660	0
Total Analysis Volume [veh/h]	0	0	0	57	0	191	0	1526	152	164	2640	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.06	0.00	0.25	0.25	0.05	0.78	0.00
Intersection LOS	D											
Intersection V/C	0.883											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.746

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	326	0	298	0	0	0	0	1394	0	0	2408	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	0	298	0	0	0	0	1394	0	0	2408	165
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	82	0	75	0	0	0	0	349	0	0	602	41
Total Analysis Volume [veh/h]	326	0	298	0	0	0	0	1394	0	0	2408	165
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.18	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.50	0.50
Intersection LOS	C											
Intersection V/C	0.746											

Irvine Ranch Water District

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Report File: N:\...\2023 PEN PP Route 2A AM.pdf

Scenario 7 2023 PEN Route 2A AM
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	WB Thru	0.470	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	SB Thru	0.704	-	C
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	WB Thru	0.600	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	SB Thru	0.651	-	B
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	SB Thru	0.723	-	C
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	SB Thru	0.728	-	C
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.687	-	B
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Right	0.562	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.470

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	278	0	160	0	0	0	0	624	495	422	896	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	278	45	160	0	27	0	0	624	495	422	896	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	11	40	0	7	0	0	156	124	106	224	0
Total Analysis Volume [veh/h]	278	45	160	0	27	0	0	624	495	422	896	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

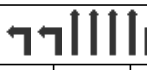
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.10	0.00	0.00	0.02	0.00	0.00	0.18	0.00	0.12	0.26	0.00
Intersection LOS	A											
Intersection V/C	0.470											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.704

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	108	241	490	445	832	83	72	1308	255	628	1044	221
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	27	0	0	0	0	0	0	0	45
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	241	490	472	832	83	72	1308	255	628	1044	266
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	60	123	118	208	21	18	327	64	157	261	67
Total Analysis Volume [veh/h]	108	241	490	472	832	83	72	1308	255	628	1044	266
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

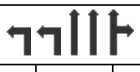
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.05	0.00	0.14	0.24	0.05	0.02	0.19	0.15	0.18	0.20	0.16
Intersection LOS	C											
Intersection V/C	0.704											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.600

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	226	346	51	196	265	14	76	601	192	106	1669	381
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	226	346	51	196	265	14	76	601	192	106	1669	381
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	87	13	49	66	4	19	150	48	27	417	95
Total Analysis Volume [veh/h]	226	346	51	196	265	14	76	601	192	106	1669	381
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

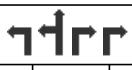
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.07	0.00	0.06	0.05	0.01	0.02	0.12	0.00	0.03	0.40	0.40
Intersection LOS	A											
Intersection V/C	0.600											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	245	551	1	0	2172	563	349	0	591	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	245	551	1	0	2172	563	349	0	591	1	0	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	138	0	0	543	141	87	0	148	0	0	0
Total Analysis Volume [veh/h]	245	551	1	0	2172	563	349	0	591	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.11	0.11	0.00	0.43	0.33	0.10	0.00	0.00	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.651											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.723

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	599	212	122	2689	496	121
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	599	212	122	2689	496	121
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	150	53	31	672	124	30
Total Analysis Volume [veh/h]	599	212	122	2689	496	121
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.12	0.04	0.53	0.15	0.07
Intersection LOS	C					
Intersection V/C	0.723					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.728

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	509	145	845	2258	0	262	0	1169	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	509	145	845	2258	0	262	0	1169	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	127	36	211	565	0	66	0	292	0	0	0
Total Analysis Volume [veh/h]	0	509	145	845	2258	0	262	0	1169	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.07	0.09	0.25	0.33	0.00	0.05	0.00	0.21	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.728											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.687

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	155	0	313	0	1810	367	418	1808	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	45	0	27	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	155	0	358	0	1837	367	418	1808	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	39	0	90	0	459	92	105	452	0
Total Analysis Volume [veh/h]	0	0	0	155	0	358	0	1837	367	418	1808	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.11	0.00	0.32	0.32	0.12	0.53	0.00
Intersection LOS	B											
Intersection V/C	0.687											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.562

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	122	0	124	0	0	0	0	1822	0	0	2137	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	122	0	124	0	0	0	0	1822	0	0	2137	101
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	0	31	0	0	0	0	456	0	0	534	25
Total Analysis Volume [veh/h]	122	0	124	0	0	0	0	1822	0	0	2137	101
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.00	0.07	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.44	0.44
Intersection LOS	A											
Intersection V/C	0.562											

Irvine Ranch Water District

Vistro File: N:\...\IRWD 2023 APP.vistro
Scenario 8 2023 PEN PP Route 2A PM
Report File: N:\...\2023 PEN PP Route 2A PM.pdf
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	NB Left	0.506	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	WB Thru	0.650	-	B
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	EB Thru	0.618	-	B
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	NB Thru	0.743	-	C
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	NB Thru	0.651	-	B
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	NB Thru	0.619	-	B
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.883	-	D
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.746	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.506

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	780	0	437	0	0	0	0	554	230	179	644	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	780	0	437	0	18	0	0	554	230	179	644	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	195	0	109	0	5	0	0	139	58	45	161	0
Total Analysis Volume [veh/h]	780	0	437	0	18	0	0	554	230	179	644	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

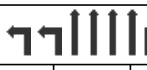
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.00	0.00	0.00	0.01	0.00	0.00	0.16	0.00	0.05	0.19	0.00
Intersection LOS	A											
Intersection V/C	0.506											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.650

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	346	895	587	180	322	96	188	936	180	539	1584	516
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	346	895	587	198	322	96	188	936	180	539	1584	516
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	87	224	147	50	81	24	47	234	45	135	396	129
Total Analysis Volume [veh/h]	346	895	587	198	322	96	188	936	180	539	1584	516
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

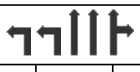
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.18	0.00	0.06	0.09	0.06	0.06	0.14	0.11	0.16	0.31	0.30
Intersection LOS	B											
Intersection V/C	0.650											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.618

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	135	195	52	199	147	43	319	2354	261	34	806	193
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	135	195	52	199	147	43	319	2354	261	34	806	193
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	49	13	50	37	11	80	589	65	9	202	48
Total Analysis Volume [veh/h]	135	195	52	199	147	43	319	2354	261	34	806	193
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

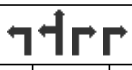
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.04	0.00	0.06	0.03	0.03	0.09	0.46	0.00	0.01	0.20	0.20
Intersection LOS	B											
Intersection V/C	0.618											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.743

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	611	1976	0	4	858	220	1030	0	227	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	611	1976	0	4	858	220	1030	0	227	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	153	494	0	1	215	55	258	0	57	0	0	0
Total Analysis Volume [veh/h]	611	1976	0	4	858	220	1030	0	227	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.18	0.39	0.00	0.00	0.17	0.13	0.30	0.00	0.00	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.743											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2549	408	115	1060	185	115
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2549	408	115	1060	185	115
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	637	102	29	265	46	29
Total Analysis Volume [veh/h]	2549	408	115	1060	185	115
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.50	0.24	0.03	0.21	0.05	0.07
Intersection LOS	B					
Intersection V/C	0.651					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.619

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	2151	504	343	691	0	679	0	355	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2151	504	343	691	0	679	0	355	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	538	126	86	173	0	170	0	89	0	0	0
Total Analysis Volume [veh/h]	0	2151	504	343	691	0	679	0	355	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.32	0.30	0.10	0.10	0.00	0.13	0.00	0.15	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.619											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.883

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	57	0	191	0	1526	152	164	2640	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	18	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	57	0	191	0	1544	152	164	2640	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	14	0	48	0	386	38	41	660	0
Total Analysis Volume [veh/h]	0	0	0	57	0	191	0	1544	152	164	2640	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.06	0.00	0.25	0.25	0.05	0.78	0.00
Intersection LOS	D											
Intersection V/C	0.883											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.746

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	326	0	298	0	0	0	0	1394	0	0	2408	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	0	298	0	0	0	0	1394	0	0	2408	165
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	82	0	75	0	0	0	0	349	0	0	602	41
Total Analysis Volume [veh/h]	326	0	298	0	0	0	0	1394	0	0	2408	165
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.18	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.50	0.50
Intersection LOS	C											
Intersection V/C	0.746											

Irvine Ranch Water District

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Scenario 9 2023 PEN PP Route 2B AM
Report File: N:\...\2023 PEN PP Route 2B AM.pdf
8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	WB Thru	0.470	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	SB Thru	0.704	-	C
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	WB Thru	0.600	-	A
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	SB Thru	0.651	-	B
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	SB Thru	0.723	-	C
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	SB Thru	0.728	-	C
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.687	-	B
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Right	0.587	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.470

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	278	0	160	0	0	0	0	624	495	422	896	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	45	0	0	27	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	278	45	160	0	27	0	0	624	495	422	896	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	11	40	0	7	0	0	156	124	106	224	0
Total Analysis Volume [veh/h]	278	45	160	0	27	0	0	624	495	422	896	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

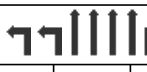
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.10	0.00	0.00	0.02	0.00	0.00	0.18	0.00	0.12	0.26	0.00
Intersection LOS	A											
Intersection V/C	0.470											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.704

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	108	241	490	445	832	83	72	1308	255	628	1044	221
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	27	0	0	0	0	0	0	0	45
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	108	241	490	472	832	83	72	1308	255	628	1044	266
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	60	123	118	208	21	18	327	64	157	261	67
Total Analysis Volume [veh/h]	108	241	490	472	832	83	72	1308	255	628	1044	266
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

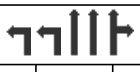
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.05	0.00	0.14	0.24	0.05	0.02	0.19	0.15	0.18	0.20	0.16
Intersection LOS	C											
Intersection V/C	0.704											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.600

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	226	346	51	196	265	14	76	601	192	106	1669	381
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	226	346	51	196	265	14	76	601	192	106	1669	381
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	87	13	49	66	4	19	150	48	27	417	95
Total Analysis Volume [veh/h]	226	346	51	196	265	14	76	601	192	106	1669	381
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

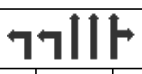
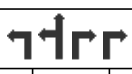
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.07	0.00	0.06	0.05	0.01	0.02	0.12	0.00	0.03	0.40	0.40
Intersection LOS	A											
Intersection V/C	0.600											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	245	551	1	0	2172	563	349	0	591	1	0	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	245	551	1	0	2172	563	349	0	591	1	0	1
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	61	138	0	0	543	141	87	0	148	0	0	0
Total Analysis Volume [veh/h]	245	551	1	0	2172	563	349	0	591	1	0	1
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.11	0.11	0.00	0.43	0.33	0.10	0.00	0.00	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.651											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.723

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	599	212	122	2689	496	121
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	599	212	122	2689	496	121
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	150	53	31	672	124	30
Total Analysis Volume [veh/h]	599	212	122	2689	496	121
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.12	0.04	0.53	0.15	0.07
Intersection LOS	C					
Intersection V/C	0.723					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.728

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	509	145	845	2258	0	262	0	1169	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	509	145	845	2258	0	262	0	1169	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	127	36	211	565	0	66	0	292	0	0	0
Total Analysis Volume [veh/h]	0	509	145	845	2258	0	262	0	1169	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.07	0.09	0.25	0.33	0.00	0.05	0.00	0.21	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.728											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.687

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	155	0	313	0	1810	367	418	1808	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	27	0	45	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	155	0	313	0	1810	394	418	1853	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	39	0	78	0	453	99	105	463	0
Total Analysis Volume [veh/h]	0	0	0	155	0	313	0	1810	394	418	1853	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.09	0.00	0.32	0.32	0.12	0.55	0.00
Intersection LOS	B											
Intersection V/C	0.687											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.587

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	122	0	124	0	0	0	0	1822	0	0	2137	101
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	45	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	167	0	124	0	0	0	0	1822	0	0	2137	101
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	0	31	0	0	0	0	456	0	0	534	25
Total Analysis Volume [veh/h]	167	0	124	0	0	0	0	1822	0	0	2137	101
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.00	0.07	0.00	0.00	0.00	0.00	0.36	0.00	0.00	0.44	0.44
Intersection LOS	A											
Intersection V/C	0.587											

Irvine Ranch Water District

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Report File: N:\...\2023 PEN PP Route 2B PM.pdf 8/19/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Sand Canyon Ave and Portola Pkwy	Signalized	ICU 1	NB Left	0.506	-	A
2	Sand Canyon Ave and Irvine Blvd	Signalized	ICU 1	WB Thru	0.650	-	B
3	Sand Canyon Ave and Trabuco Rd	Signalized	ICU 1	EB Thru	0.618	-	B
4	Sand Canyon Ave and I-5 NB Ramps	Signalized	ICU 1	NB Thru	0.743	-	C
5	Sand Canyon Ave and Marine Way	Signalized	ICU 1	NB Thru	0.651	-	B
6	Sand Canyon Ave and I-5 SB Ramps	Signalized	ICU 1	NB Thru	0.619	-	B
7	SR-133 SB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.883	-	D
8	SR-133 NB Ramps and Irvine Blvd	Signalized	ICU 1	WB Thru	0.746	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report

Intersection 1: Sand Canyon Ave and Portola Pkwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.506

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	1	0	1	0	0	0	0	0	1	2	0	0
Pocket Length [ft]	280.00	100.00	500.00	100.00	100.00	100.00	100.00	100.00	300.00	380.00	100.00	100.00
Speed [mph]	50.00			30.00			50.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			Yes			No			Yes		

Volumes

Name												
Base Volume Input [veh/h]	780	0	437	0	0	0	0	554	230	179	644	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	18	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	780	0	437	0	18	0	0	554	230	179	644	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	195	0	109	0	5	0	0	139	58	45	161	0
Total Analysis Volume [veh/h]	780	0	437	0	18	0	0	554	230	179	644	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Split	Split	Overla	Split	Split	Split	Permis	Permis	Unsign	Protect	Permis	Permis
Signal Group	6	6	0	0	2	0	0	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	Lead	-	-

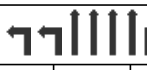
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.00	0.00	0.00	0.01	0.00	0.00	0.16	0.00	0.05	0.19	0.00
Intersection LOS	A											
Intersection V/C	0.506											

Intersection Level Of Service Report
Intersection 2: Sand Canyon Ave and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.650

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	2	2	0	1	2	0	1	2	0	1
Pocket Length [ft]	200.00	100.00	350.00	170.00	100.00	310.00	150.00	100.00	310.00	280.00	100.00	350.00
Speed [mph]	50.00			50.00			55.00			55.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	346	895	587	180	322	96	188	936	180	539	1584	516
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	18	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	346	895	587	198	322	96	188	936	180	539	1584	516
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	87	224	147	50	81	24	47	234	45	135	396	129
Total Analysis Volume [veh/h]	346	895	587	198	322	96	188	936	180	539	1584	516
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Overla	Protect	Permis	Permis	Protect	Permis	Permis	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

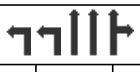
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.18	0.00	0.06	0.09	0.06	0.06	0.14	0.11	0.16	0.31	0.30
Intersection LOS	B											
Intersection V/C	0.650											

Intersection Level Of Service Report
Intersection 3: Sand Canyon Ave and Trabuco Rd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.618

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	2	0	0	2	0	1	2	0	1	2	0	0
Pocket Length [ft]	250.00	100.00	100.00	200.00	100.00	280.00	150.00	100.00	430.00	320.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	135	195	52	199	147	43	319	2354	261	34	806	193
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	135	195	52	199	147	43	319	2354	261	34	806	193
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	34	49	13	50	37	11	80	589	65	9	202	48
Total Analysis Volume [veh/h]	135	195	52	199	147	43	319	2354	261	34	806	193
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Protect	Permis	Unsign	Protect	Permis	Permis	Protect	Permis	Unsign	Protect	Permis	Permis
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-

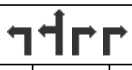
Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.04	0.00	0.06	0.03	0.03	0.09	0.46	0.00	0.01	0.20	0.20
Intersection LOS	B											
Intersection V/C	0.618											

Intersection Level Of Service Report
Intersection 4: Sand Canyon Ave and I-5 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.743

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	1	0	1	0	0	1	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	190.00	100.00	220.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			50.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	611	1976	0	4	858	220	1030	0	227	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	611	1976	0	4	858	220	1030	0	227	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	153	494	0	1	215	55	258	0	57	0	0	0
Total Analysis Volume [veh/h]	611	1976	0	4	858	220	1030	0	227	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Split	Split	Overla	Split	Split	Split
Signal Group	0	6	0	0	2	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.18	0.39	0.00	0.00	0.17	0.13	0.30	0.00	0.00	0.00	0.00	0.00
Intersection LOS	C											
Intersection V/C	0.743											

Intersection Level Of Service Report
Intersection 5: Sand Canyon Ave and Marine Way

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.651

Intersection Setup

Name						
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	380.00	100.00
Speed [mph]	50.00		50.00		50.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	2549	408	115	1060	185	115
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2549	408	115	1060	185	115
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	637	102	29	265	46	29
Total Analysis Volume [veh/h]	2549	408	115	1060	185	115
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	6	0	0	2	4	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.50	0.24	0.03	0.21	0.05	0.07
Intersection LOS	B					
Intersection V/C	0.651					

Intersection Level Of Service Report
Intersection 6: Sand Canyon Ave and I-5 SB Ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.619

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	2	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	100.00	240.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	50.00			50.00			50.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	2151	504	343	691	0	679	0	355	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2151	504	343	691	0	679	0	355	0	0	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	538	126	86	173	0	170	0	89	0	0	0
Total Analysis Volume [veh/h]	0	2151	504	343	691	0	679	0	355	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Protect	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	6	0	5	2	0	0	8	0	0	0	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.32	0.30	0.10	0.10	0.00	0.13	0.00	0.15	0.00	0.00	0.00
Intersection LOS	B											
Intersection V/C	0.619											

Intersection Level Of Service Report
Intersection 7: SR-133 SB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.883

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	530.00	100.00	100.00	100.00	140.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	57	0	191	0	1526	152	164	2640	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	18	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	57	0	191	0	1526	170	164	2640	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	14	0	48	0	382	43	41	660	0
Total Analysis Volume [veh/h]	0	0	0	57	0	191	0	1526	170	164	2640	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	0	0	0	4	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lag	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.03	0.00	0.06	0.00	0.25	0.25	0.05	0.78	0.00
Intersection LOS	D											
Intersection V/C	0.883											

Intersection Level Of Service Report
Intersection 8: SR-133 NB Ramps and Irvine Blvd

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.746

Intersection Setup

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

Volumes

Name												
Base Volume Input [veh/h]	326	0	298	0	0	0	0	1394	0	0	2408	165
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	326	0	298	0	0	0	0	1394	0	0	2408	165
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	82	0	75	0	0	0	0	349	0	0	602	41
Total Analysis Volume [veh/h]	326	0	298	0	0	0	0	1394	0	0	2408	165
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	100
Lost time [s]	5.00

Phasing & Timing

Control Type	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis	Permis
Signal Group	8	2	0	0	0	0	0	2	0	0	6	0
Auxiliary Signal Groups												
Lead / Lag	Lag	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.18	0.00	0.00	0.00	0.00	0.27	0.00	0.00	0.50	0.50
Intersection LOS	C											
Intersection V/C	0.746											