

Granite Construction Company's Coalinga Mine Expansion Project

Traffic Impact Study Report November 2019

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Granite Construction Company's Coalinga Mine Expansion Project Traffic Impact Study

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1.0 Introduction

1.1 Description of the Region/Project

This Traffic Impact Study (TIS) has been prepared for the purpose of analyzing traffic conditions related to the proposed Granite Construction Company Coalinga Mine Expansion Project ("Project") in the County of Fresno. The Project is located to the west of State Route (SR) 33 and approximately $\frac{3}{4}$ miles north of Phelps Avenue.

The Project's primary purpose is a change (expansion) to the geographic area allowed for mining and reclamation at the Project site. The Project would not modify the current production levels, hours of operation, materials to be mined, equipment types, or mining methods. Sand and gravel mined within the Project area will be transported via conveyor and/or internal haul roads to the existing processing plants where it will be processed and/or sold for use in construction materials. Figures 1-1 and 1-2 show the location of the Project along with major roadways.

1.1.1 Project Access

Access to the site is provided along SR-33 via one (1) driveway located approximately $\frac{3}{4}$ miles north of Phelps Avenue. The lone driveway along SR-33 is a full access driveway with a one-way stop sign for vehicles exiting the site.

1.1.2 Study Area

The study intersections and street and highway segments included in this TIS are listed below. The study area outline below was developed in consultation with Fresno County and California Department of Transportation (Caltrans) staff. VRPA prepared a Traffic Scoping document that included the proposed methodology for the traffic analysis as well as the study area.

Intersections

- ✓ SR-33 / Project Driveway
- ✓ SR-33 / SR-198
- ✓ I-5 NB Off Ramp / SR-198
- ✓ I-5 SB Off Ramp / SR-198
- ✓ I-5 NB Off Ramp / Jayne Avenue (Trip Trace Only)
- ✓ SR-33 / Jayne Avenue (Trip Trace Only)
- ✓ SR-33 / Juniper Ridge Boulevard (Trip Trace Only)
- ✓ SR-33 / 5th Street (Trip Trace Only)
- ✓ SR-33 / 3rd Street (Trip Trace Only)

Roadway Segments

- ✓ SR-198 between the I-5 NB and SB off ramps

1.1.3 Study Scenarios

The TIS completed for the Project includes level of service (LOS) analysis for the following traffic scenarios:

- ✓ Existing Conditions
- ✓ Modified Existing Scenario 1 (omitting actual Granite Construction trips included in existing counts)
- ✓ Modified Existing Scenario 2 (including current Granite Construction operations of 1.5 million tons of sales)
- ✓ Cumulative Year 2040 Scenario 1 (omitting actual Granite Construction trips included in existing counts)
- ✓ Cumulative Year 2040 Scenario 2 (including Granite Construction trips associated with operations of 1.5 million tons of sales)

1.2 Methodology

When preparing a TIS, guidelines set by affected agencies are followed. In analyzing street and intersection capacities the Level of Service (LOS) methodologies are applied. LOS standards are applied by transportation agencies to quantitatively assess a street and highway system's performance. In addition, safety concerns are analyzed to determine the need for appropriate mitigation resulting from increased traffic near sensitive uses, the need for dedicated ingress and egress access lanes to the project, and other evaluations such as the need for signalized intersections or other improvements.

1.2.1 Intersection Analysis

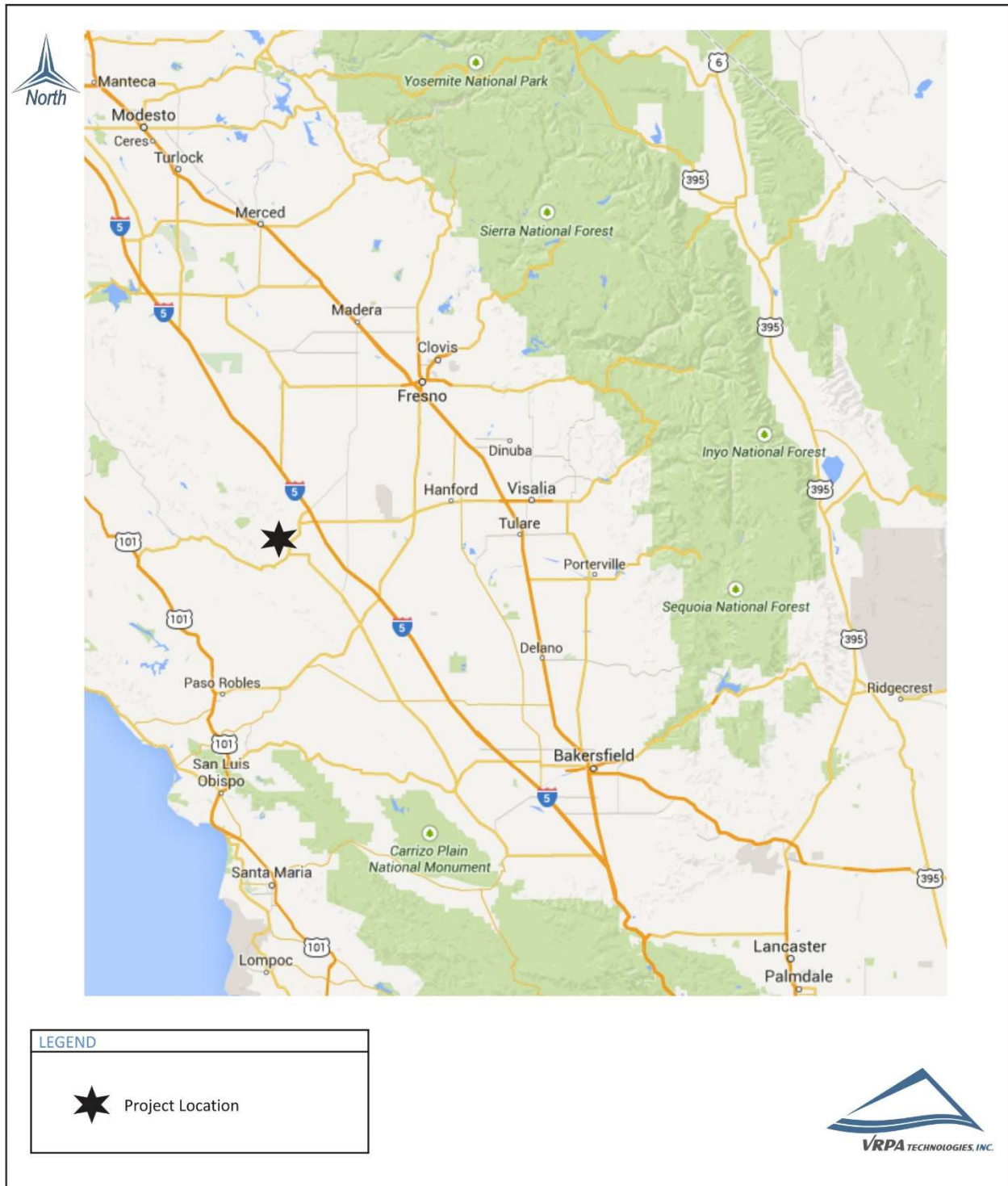
Intersection LOS analysis was conducted using the Synchro 9 software program. Synchro 9 supports the Highway Capacity Manual (HCM) 2010 and 2000 methodologies and is an acceptable program by City of Visalia and Caltrans staff for assessment of traffic impacts. Levels of Service can be determined for both signalized and unsignalized intersections. Seven (7) of the existing study intersections are currently signalized while ten (10) of the intersections are currently unsignalized.

Tables 1-1 and 1-2 indicate the ranges in the amounts of average delay for a vehicle at signalized and unsignalized intersections for the various levels of service ranging from LOS "A" to "F".

The signalized LOS standards applied to calculate intersection LOS are in accordance with the current edition of the Highway Capacity Manual (HCM). Intersection turning movement counts and roadway geometrics used to develop LOS calculations were obtained from field review findings and count data provided from the traffic count sources identified in Section 2.1.

**Granite Construction Company Coalinga Mine Expansion
Regional Location**

**Figure
1-1**



**Granite Construction Company Coalinga Mine Expansion
Project Location**

**Figure
1-2**

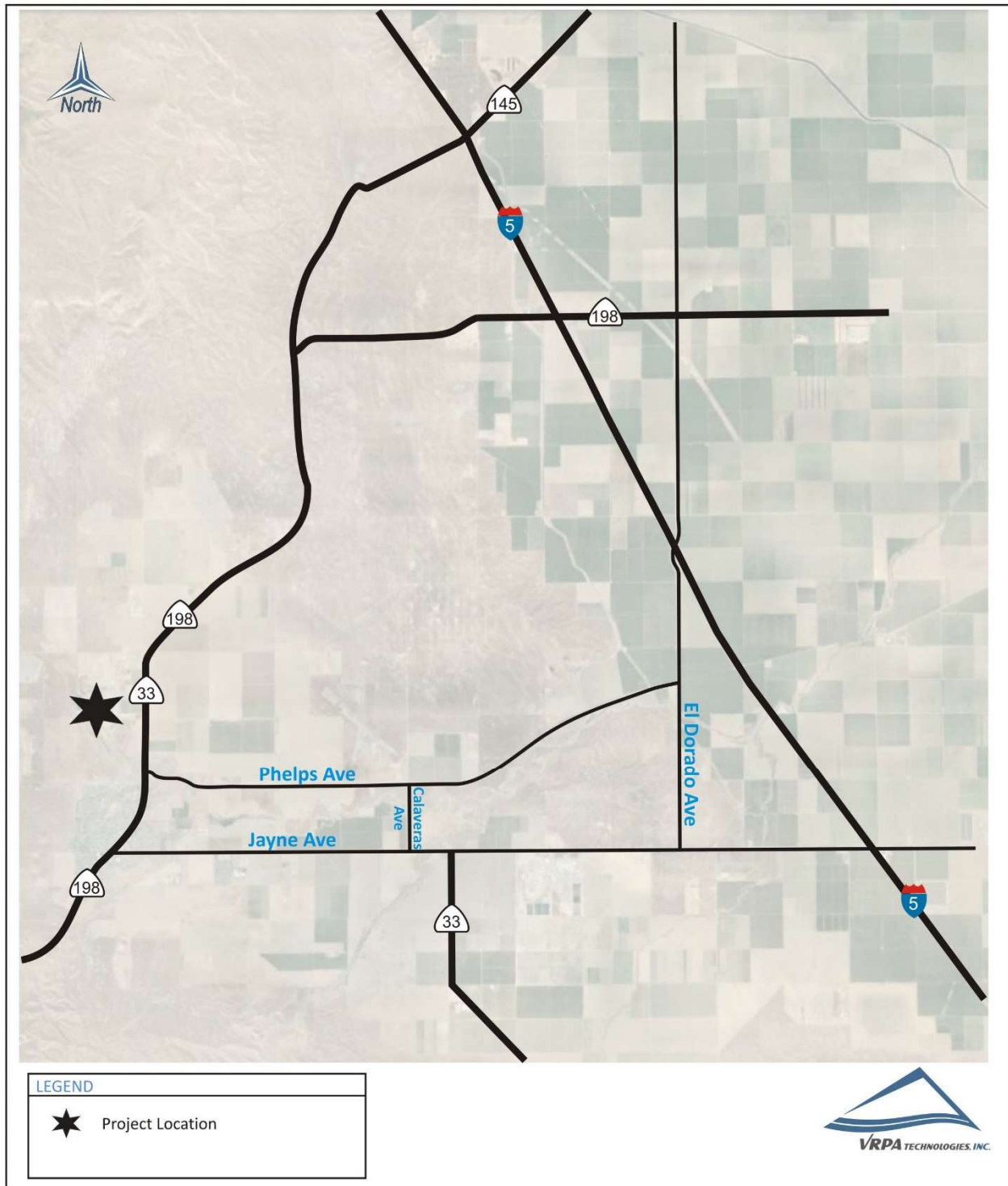


Table 1-1
Signalized Intersections
Level of Service Definitions
(Highway Capacity Manual)

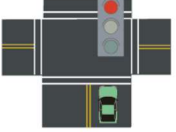
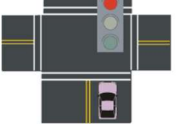
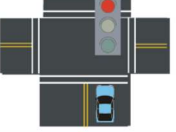
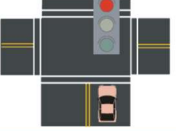
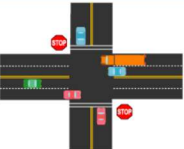
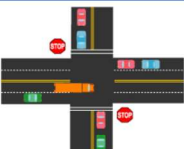
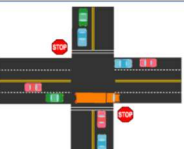
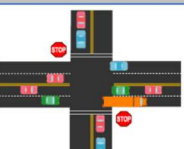
LEVEL OF SERVICE	DEFINITION		AVERAGE TOTAL DELAY (sec/veh)
A	Describes operations with very low delay. This level of service occurs when there is no conflicting traffic for a minor street.		≤ 10.0
B	Describes operations with moderately low delay. This level generally occurs with a small amount of conflicting traffic causing higher levels of average delay.		$> 10.0 - 20.0$
C	Describes operations with average delays. These higher delays may result from a moderate amount of minor street traffic. Queues begin to get longer.		$> 20.0 - 35.0$
D	Describes a crowded operation, with below average delays. At level D, the influence of congestion becomes more noticeable. Longer delays may result from shorter gaps on the mainline and an increase of minor street traffic. The queues of vehicles are increasing.		$> 35.0 - 55.0$
E	Describes operations at or near capacity. This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor gaps for the minor street to cross and large queues.		$> 55.0 - 80.0$
F	Describes operations that are at the failure point. This level, considered to be unacceptable to most drivers, often occurs with over-saturation, that is, when arrival flow rates exceed the capacity of the intersection. Insufficient gaps of suitable size exist to allow minor traffic to cross the intersection safely.		> 80.0

Table 1-2
Unsignalized Intersections
Level of Service Definitions
(Highway Capacity Manual)

LEVEL OF SERVICE	DEFINITION		AVERAGE TOTAL DELAY (sec/veh)
A	No delay for stop-controlled approaches.		0 - 10.0
B	Describes operations with minor delay.		> 10.0 - 15.0
C	Describes operations with moderate delays.		> 15.0 - 25.0
D	Describes operations with some delays.		> 25.0 - 35.0
E	Describes operations with high delays and long queues.		> 35.0 - 50.0
F	Describes operations with extreme congestion, with very high delays and long queues unacceptable to most drivers.		> 50.0

When an unsignalized intersection does not meet acceptable LOS standards, the investigation of the need for a traffic signal shall be evaluated. The California Manual on Uniform Traffic Control Devices for Streets and Highways (California MUTCD) dated November 7, 2014 introduces standards for determining the need for traffic signals. The California MUTCD indicates that the satisfaction of one or more traffic signal warrants does not in itself require the installation of a traffic signal. In addition to the warrant analysis, an engineering study of the current or expected traffic conditions should be conducted to determine whether the installation of a traffic signal is justified. The California MUTCD Peak Hour Warrant (Warrant 3) was used to determine if a traffic signal is warranted at unsignalized intersections that fall below current LOS standards.

1.2.2 Roadway Segment Analysis

According to the HCM, LOS is categorized by two parameters of traffic: uninterrupted and interrupted flow. Uninterrupted flow facilities do not have fixed elements such as traffic signals that cause interruptions in traffic flow. Interrupted flow facilities do have fixed elements that cause an interruption in the flow of traffic, such as stop signs and signalized intersections along arterial roads. A roadway segment is defined as a stretch of roadway generally located between signalized or controlled intersections.

Segment LOS is important in order to understand whether the capacity of a roadway can accommodate future traffic volumes. Table 1-3 provides a definition of segment LOS. The performance criteria used for evaluating volumes and capacities on the road and highway system for this study were estimated using the Modified HCM-Based LOS Tables (Florida Tables). The tables consider the capacity of individual road and highway segments based on numerous roadway variables (design speed, passing opportunities, signalized intersections per mile, number of lanes, saturation flow, etc.). These variables were identified and applied to reflect segment LOS conditions. Additional information is included in Appendix A. Street segment capacity was determined using information shown in Table 1-4, which comes from the Modified Arterial Level of Service Tables included in Appendix A.

1.3 Policies to Maintain Level of Service

An important goal is to maintain acceptable levels of service along the highway, street, and road network. To accomplish this, affected agencies adopt minimum levels of service in an attempt to control congestion that may result as new development occurs. As noted previously, LOS standards are applied by transportation agencies to quantitatively assess a street and highway system's performance. The affected level of service standards applicable to the traffic analysis are described below.

Fresno County

The Transportation and Circulation Element of the Fresno County General Plan guides the continued development and improvement of the circulation system to support existing and

planned development. The Circulation Element addresses the circulation improvements needed to provide adequate capacity for future land uses. The Element establishes a hierarchy of transportation routes with typical development standards described for each roadway category. The County also includes additional standards, plans and programs that apply to the evaluation of transportation impacts of the Project. These standards cover the primary aspects of the transportation system.

Fresno County's 2000 General Plan, policy number TR-A.2, identifies a minimum LOS standard of D on urban roadways within the spheres of influence of the cities of Fresno and Clovis and LOS C on all other roadways in the county.

Caltrans

Caltrans is responsible for planning, designing, building, operating, and maintaining California's State highway system, including rail and mass transit. Within the Project study area, Caltrans is responsible for State Route (SR) 33, SR 145, SR 198, and Interstate (I) 5.

Based on guidance from Caltrans, the LOS for operating State highway facilities is based on Measures of Effectiveness (MOE) identified in the Highway Capacity Manual (HCM). Caltrans endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities; however, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than this target LOS, the existing MOE should be maintained. In general, the region-wide goal for an acceptable LOS on all freeways, roadways segments, and intersections is "D". For undeveloped or not densely developed locations, the goal may be to achieve LOS "C".

Table 1-3
Roadway Segment
Level of Service Definitions
(Highway Capacity Manual)

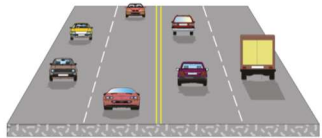
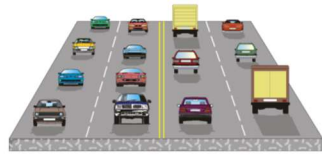
LEVEL OF SERVICE	DEFINITION	
A	Represents free flow. Individual vehicles are virtually unaffected by the presence of others in the traffic stream.	
B	Is in the range of stable flow, but the presence of other vehicles in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver.	
C	Is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual vehicles becomes significantly affected by interactions with other vehicles in the traffic stream.	
D	Is a crowded segment of roadway with a large number of vehicles restricting mobility and a stable flow. Speed and freedom to maneuver are severely restricted, and the driver experiences a generally poor level of comfort and convenience.	
E	Represents operating conditions at or near the level capacity. All speeds are reduced to a low, but relatively uniform value. Small increases in flow will cause breakdowns in traffic movement.	
F	Is used to define forced or breakdown flow (stop-and-go gridlock). This condition exists when the amount of traffic approaches a point where the amount of traffic exceeds the amount that can travel to a destination. Operations within the queues are characterized by stop and go waves, and they are extremely unstable.	

Table 1-4
Peak Hour Two-Way Volumes

Level of Service					
Lanes	Divided	B	C	D	E
Freeways					
4	Divided	3,020	4,510	5,490	6,300
6	Divided	4,510	6,720	8,220	9,720
8	Divided	6,040	8,970	10,960	12,970
State Class I Roadways					
2	Undivided	**	1,220	1,350	**
4	Divided	**	2,790	2,890	**
6	Divided	**	4,300	4,350	**
Non-State Class I Roadways					
2	Undivided	**	1,098	1,215	**
2	Divided	**	1,159	1,283	**
4	Undivided	**	2,372	2,457	**
4	Divided	**	2,511	2,601	**
6	Divided	**	3,870	3,915	**

** Not applicable for that level of service letter grade. Volumes greater than level of service D become F because intersection capacities have been reached.

2.0 Existing Conditions

2.1 Existing Traffic Counts and Roadway Geometrics

The first step toward assessing Project traffic impacts is to assess existing traffic conditions. Existing AM and PM peak hour turning movements were collected at each study intersection by National Data and Surveying Services. Intersection turning movement counts were conducted for the peak hour periods of 7:00-9:00 AM and 4:00-6:00 PM for all key intersections on Thursday, September 7th, 2017. Twenty-four (24) hour classification counts along Phelps Avenue, Calaveras Avenue, and Jayne Avenue, were taken on Thursday, September 19th, 2019. It should also be noted that 24-hour turning movement counts at the facility driveway were also collected on September 19th. The 24-hour driveway data was used to distinguish Project traffic from the traffic counts collected as described above.

Existing lane geometry is shown in Figure 2-1. Existing 2017 AM and PM peak hour traffic volumes are shown in Figures 2-2 and 2-3. Existing Daily Traffic segment volumes are shown in Figure 2-4. Figure 2-5 identifies the types of trucks observed during the 24-hour counts. Figures 2-6, 2-7, 2-8, and 2-9 represent Granite Construction Company truck trips at the Granite Construction Driveway along SR 33.

2.2 Affected Streets and Highways

Street and highway intersections and segments near and adjacent to the Project site were analyzed to determine levels of service utilizing HCM-based methodologies described previously. The study intersections and street and highway segments included in this TIS are listed below. The study area outline below was developed in consultation with Fresno County and Caltrans staff. VRPA prepared a scoping document that included the proposed methodology for the traffic analysis as well as the study area.

Intersections

- ✓ SR-33 / Project Driveway
- ✓ SR-33 / SR-198
- ✓ I-5 NB Off Ramp / SR-198
- ✓ I-5 SB Off Ramp / SR-198
- ✓ I-5 NB Off Ramp / Jayne Avenue (Trip Trace Only)
- ✓ SR-33 / Jayne Avenue (Trip Trace Only)
- ✓ SR-33 / Juniper Ridge Boulevard (Trip Trace Only)
- ✓ SR-33 / 5th Street (Trip Trace Only)
- ✓ SR-33 / 3rd Street (Trip Trace Only)

Roadway Segments

- ✓ SR-198 between the I-5 NB and SB off ramps

2.3 Modified Existing Scenario 1

A Modified Existing Scenario 1 was evaluated to assess existing conditions without trips generated by the Granite Construction facility. The travel surveys described above were used to identify Project trips and to develop Scenario 1 volumes. Scenario 1 AM and PM peak hour traffic volumes are shown in Figures 2-10 and 2-11 and daily volumes are shown in Figure 2-12.

2.4 Level of Service

2.4.1 Intersection Capacity Analysis

All intersection LOS analyses were estimated using Synchro 9 Software. Various roadway geometrics, traffic volumes, and properties (peak hour factors, storage pocket length, etc) were input into the Synchro 9 Software program in order to accurately determine the travel delay and LOS for each Study scenario. The intersection LOS and delays reported represent the 2010 HCM outputs.

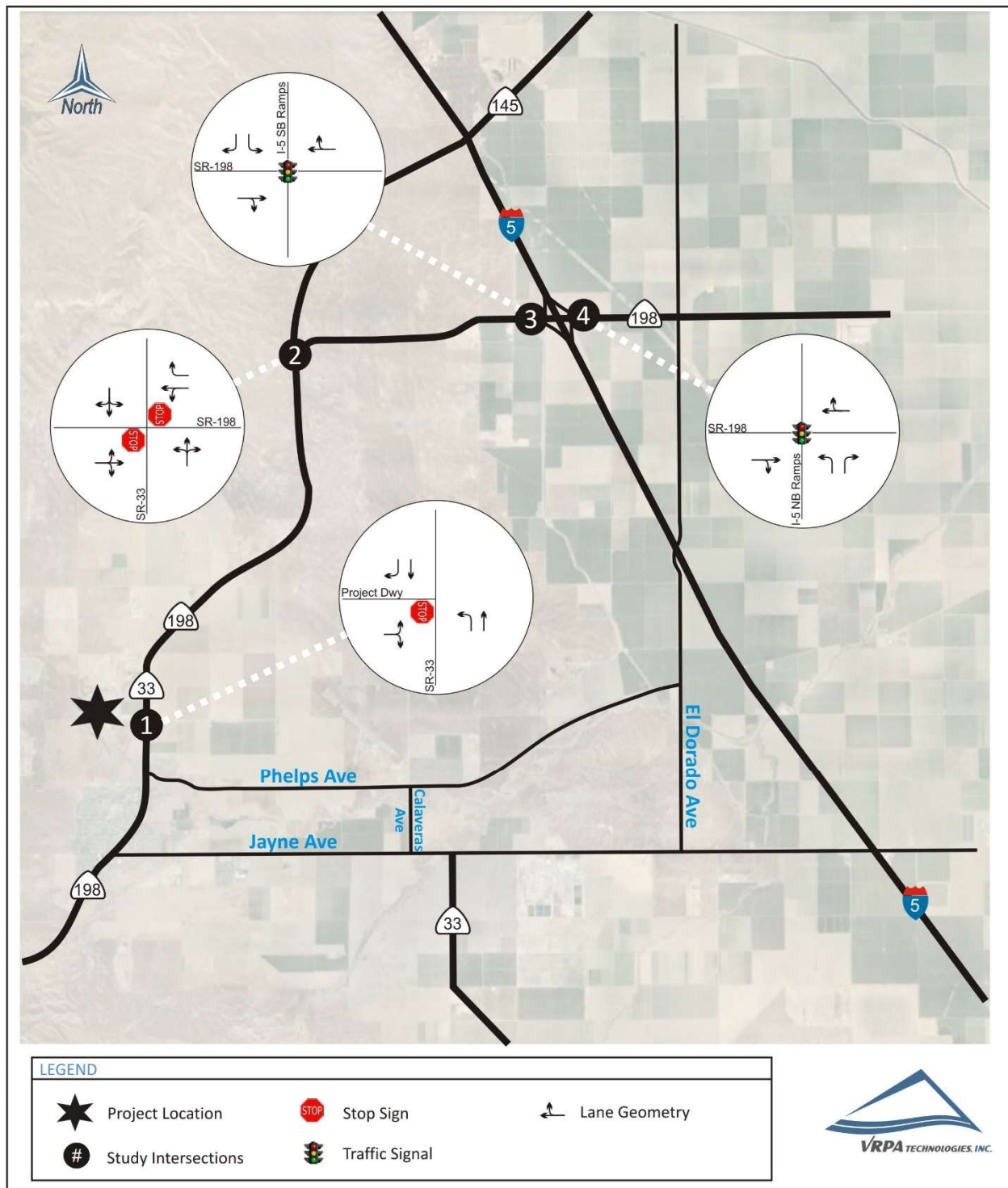
Results of the analysis show that study intersections are operating at or below the minimum level of service. Table 2-1 shows the intersection LOS for Existing conditions and the Modified Existing Scenario 1. Synchro Worksheets are provided in the appendices.

2.4.2 Roadway Segment Capacity Analysis

Results of the segment analysis along the existing street and highway system are reflected in Table 2-2. The performance criteria used for evaluating volumes and capacities on the road and highway system for this study were estimated using the Modified Arterial Level of Service Tables included in Table 1-4. Results of the analysis show that the study roadway segment is currently operating at acceptable levels of service.

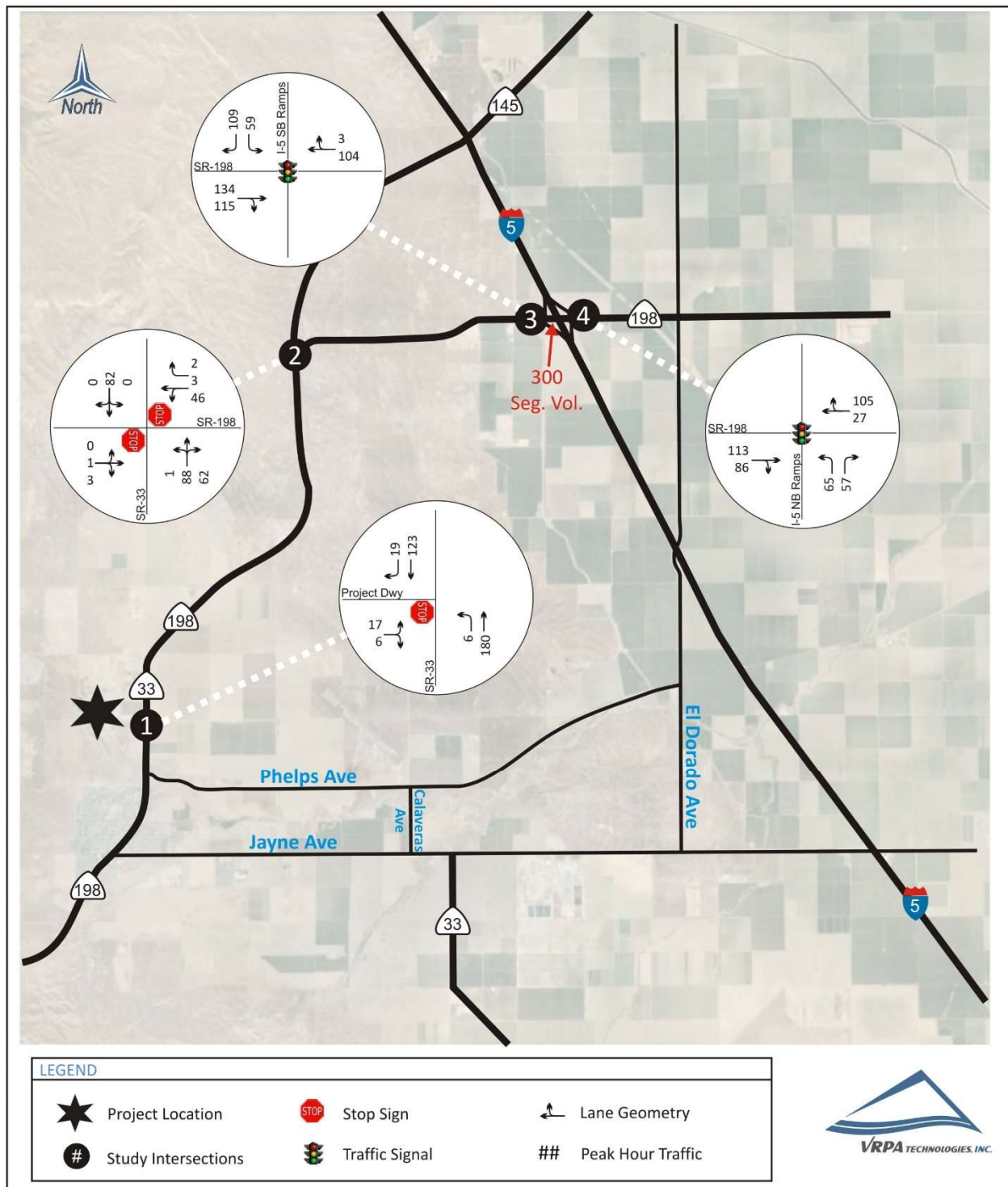
Granite Construction Company Coalinga Mine Expansion
Existing Lane Geometry

Figure
2-1



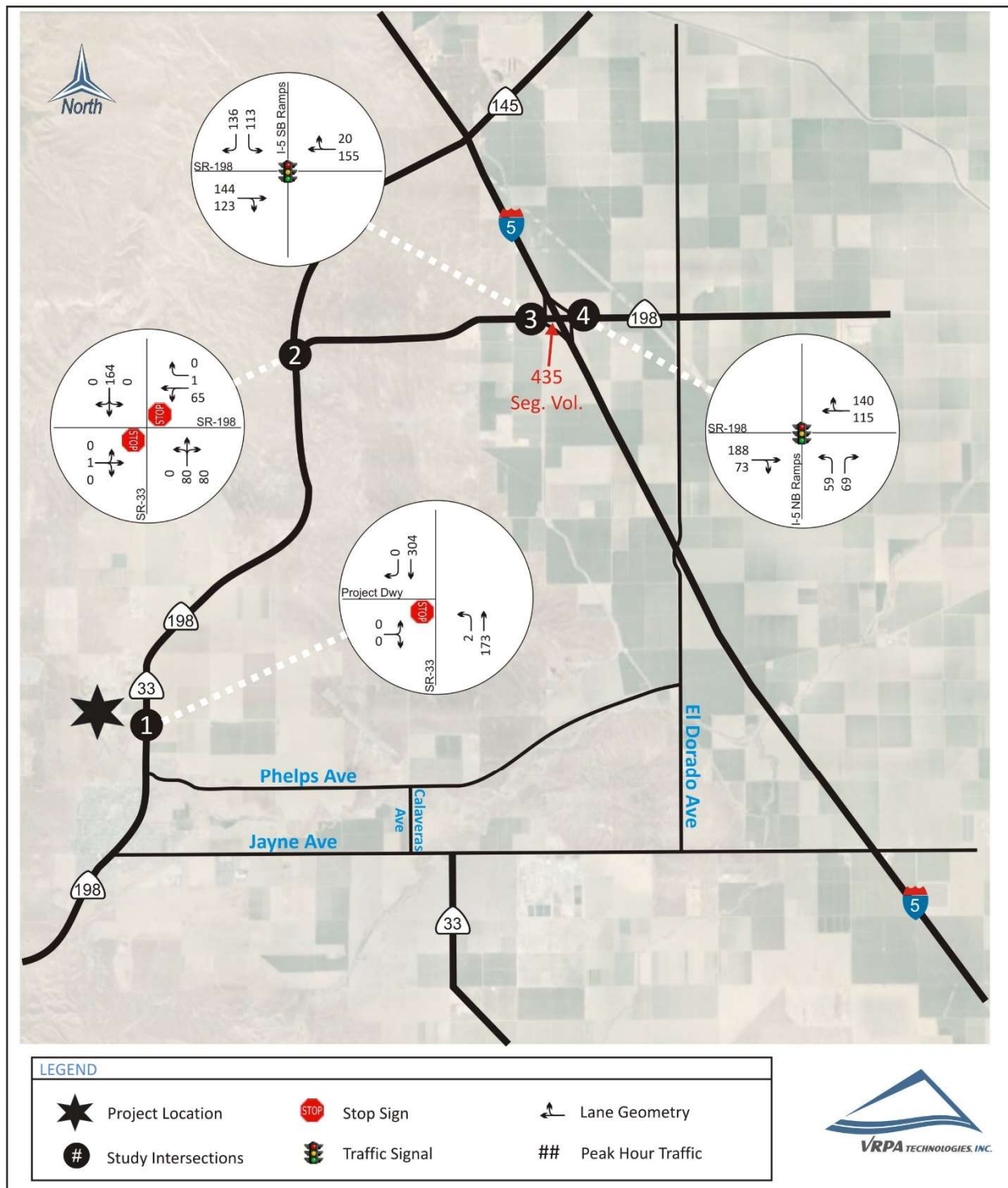
Granite Construction Company Coalinga Mine Expansion
Existing AM Peak Hour Traffic

Figure
2-2



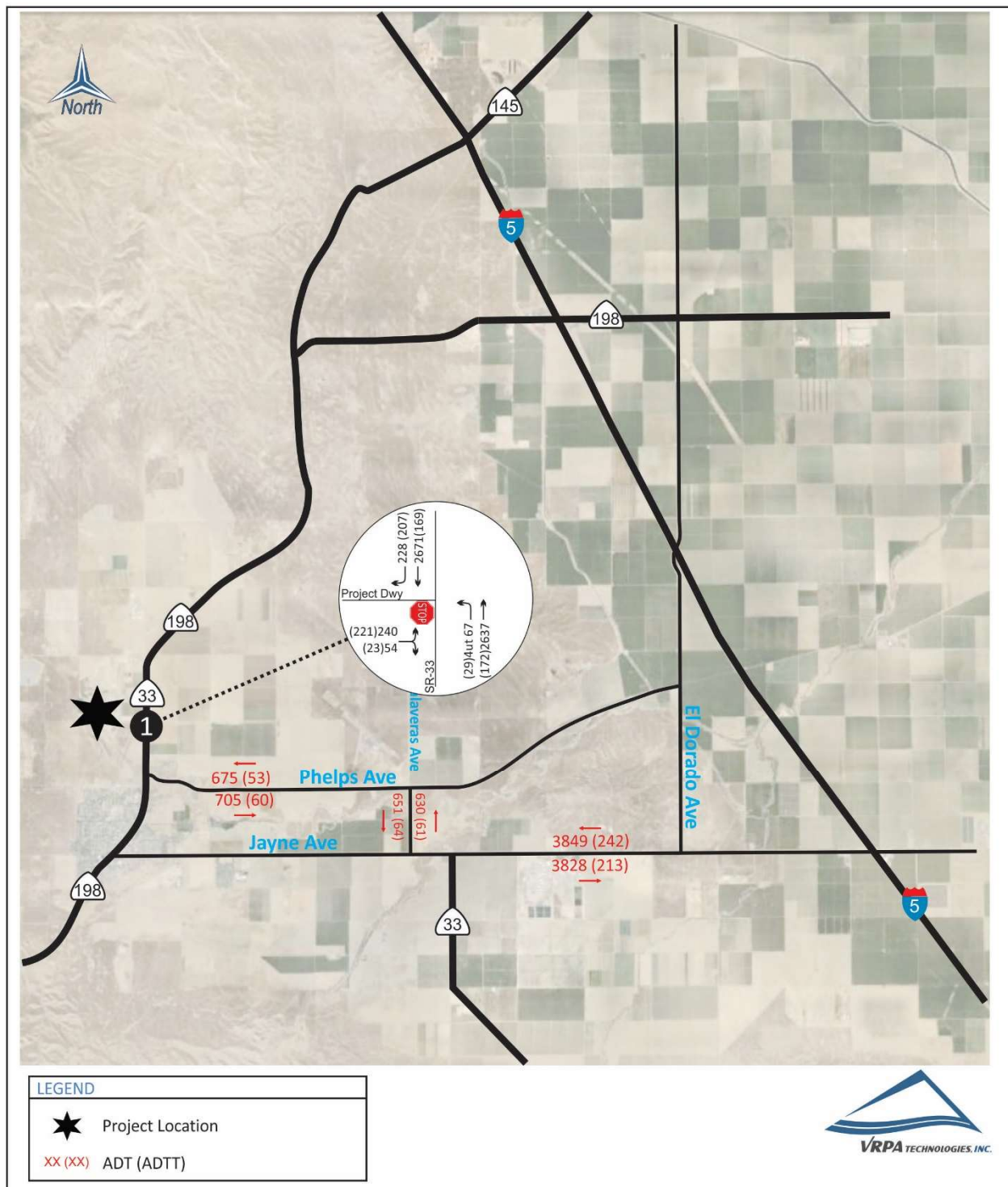
Granite Construction Company Coalinga Mine Expansion
Existing PM Peak Hour Traffic

Figure
2-3



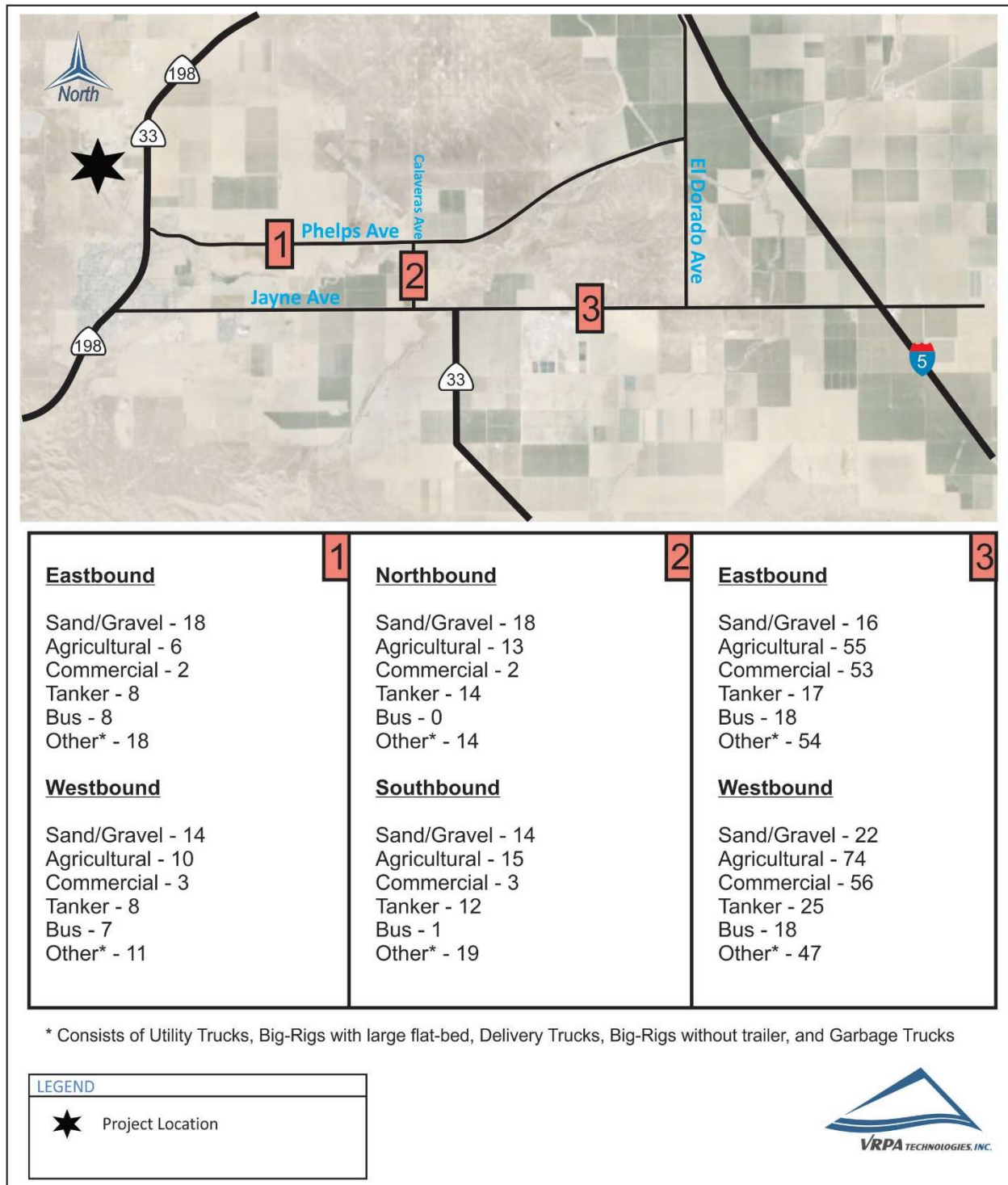
Granite Construction Company Coalinga Mine Expansion Daily Segment Volumes

Figure
2-4



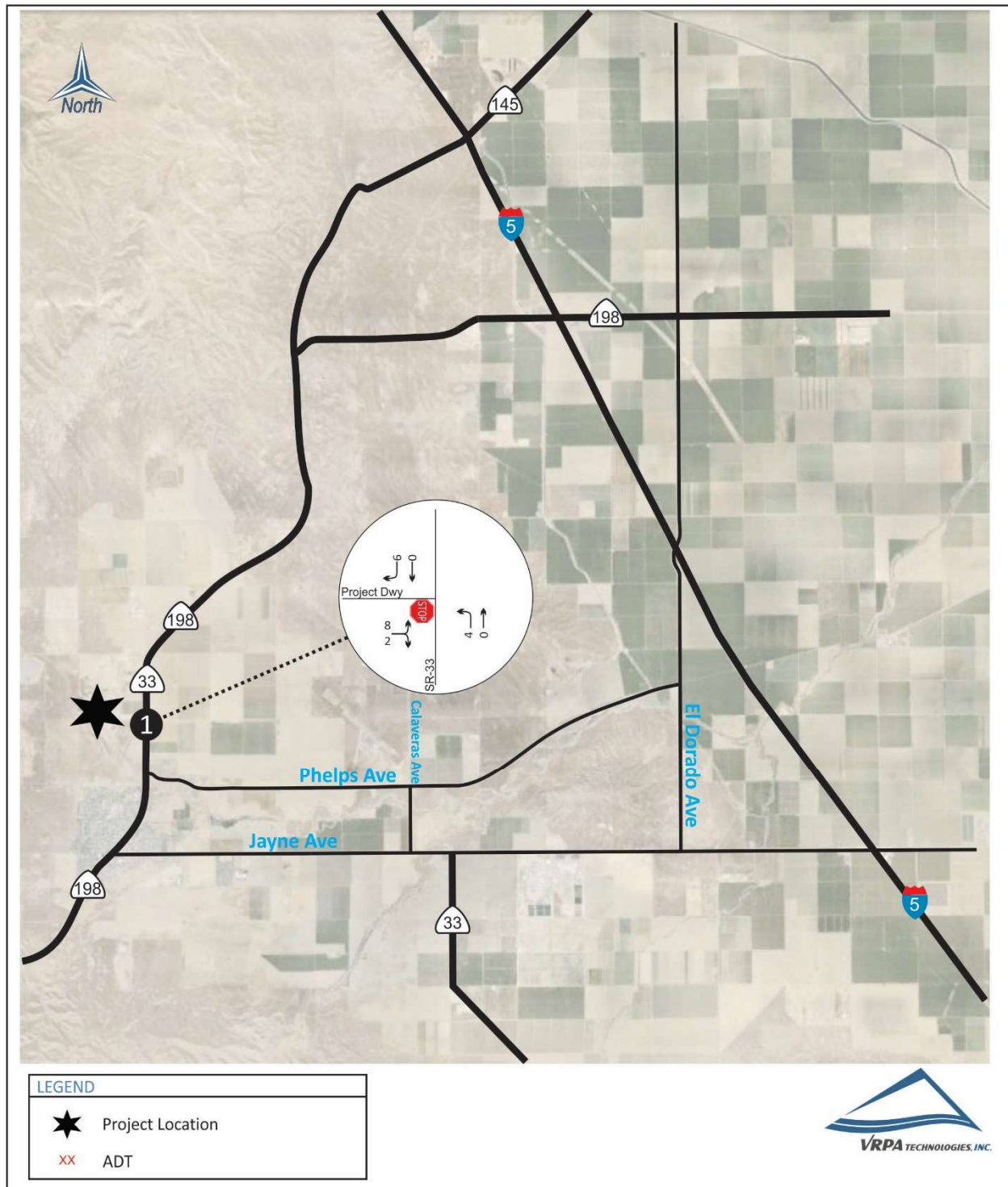
Granite Construction Company Coalinga Mine Expansion Types of Trucks Observed in 24-Hour Counts

Figure
2-5



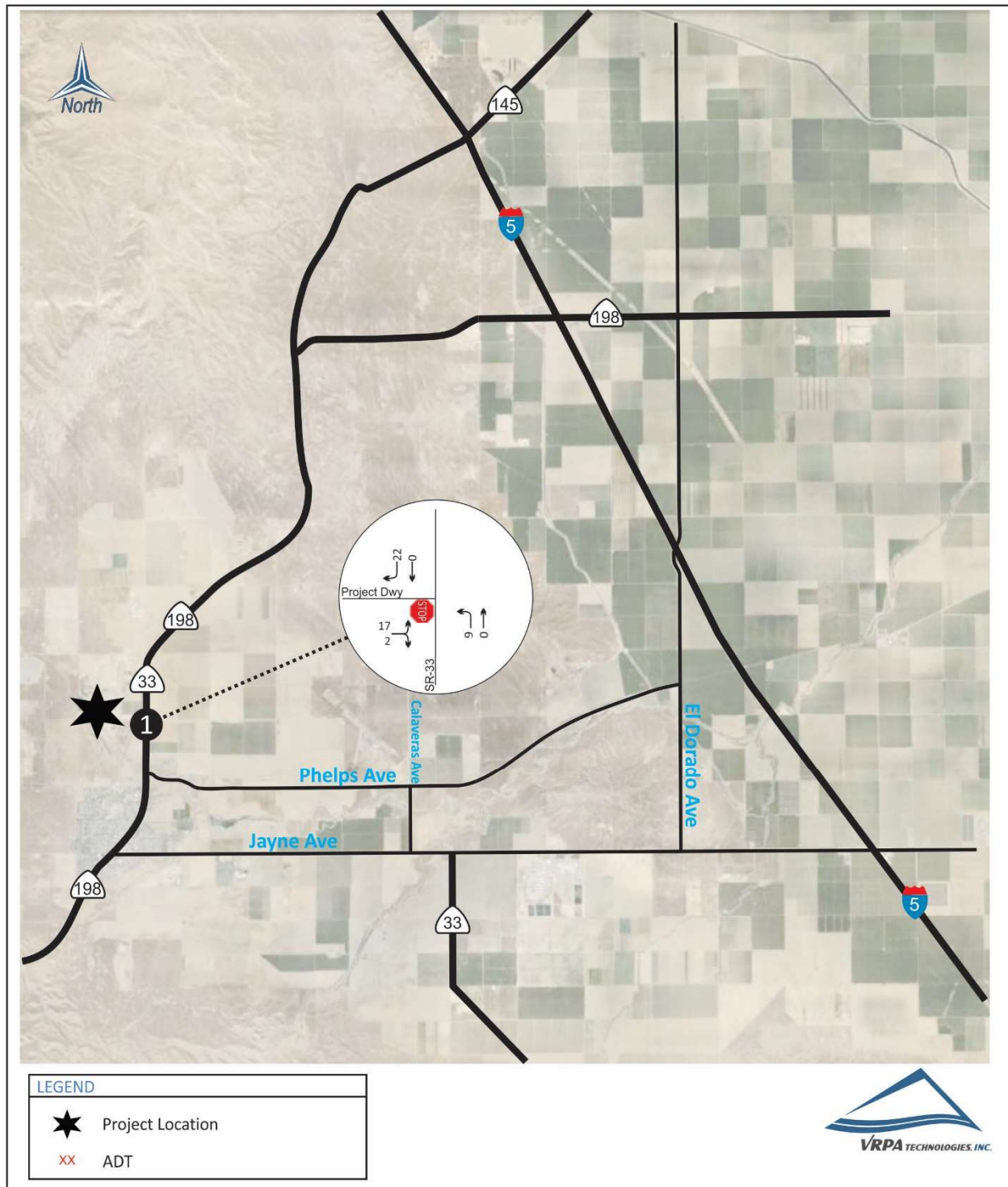
Granite Construction Company Coalinga Mine Expansion
Granite Construction Company 2-Axle Truck Volumes

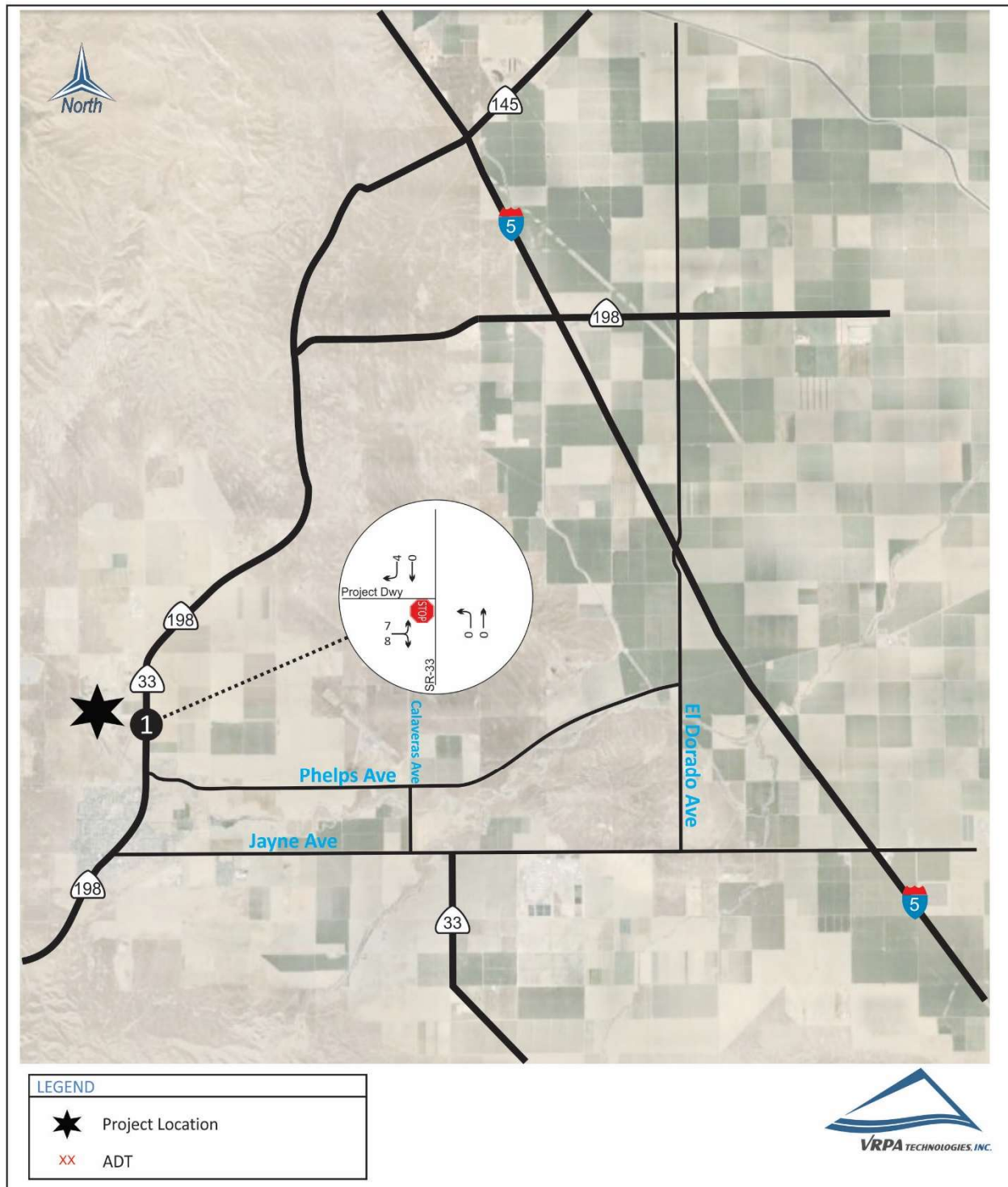
Figure
2-6



Granite Construction Company Coalinga Mine Expansion
Granite Construction Company 3-Axle Truck Volumes

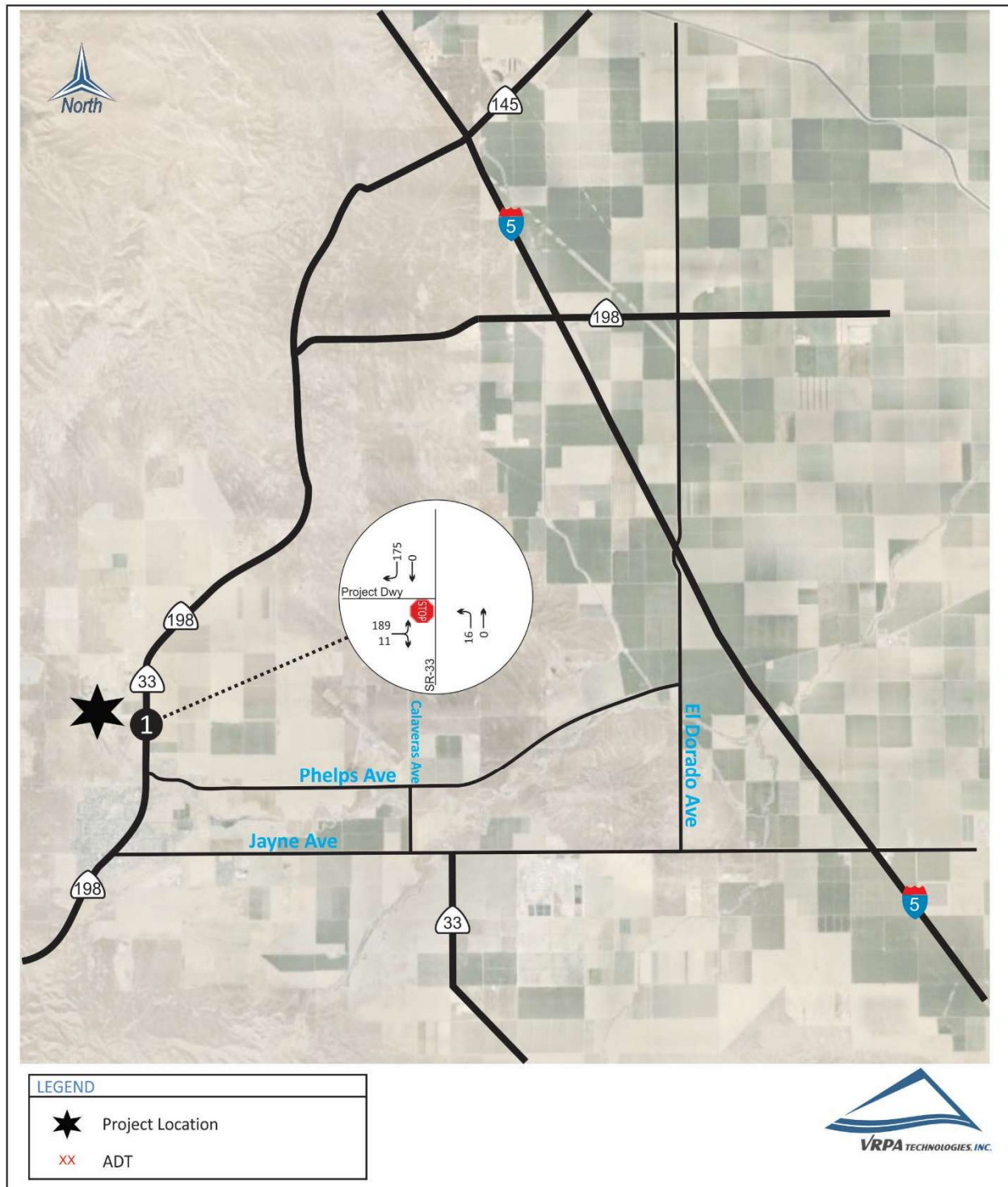
Figure
2-7



Granite Construction Company Coalinga Mine Expansion
Granite Construction Company 4-Axle Truck Volumes**Figure**
2-8

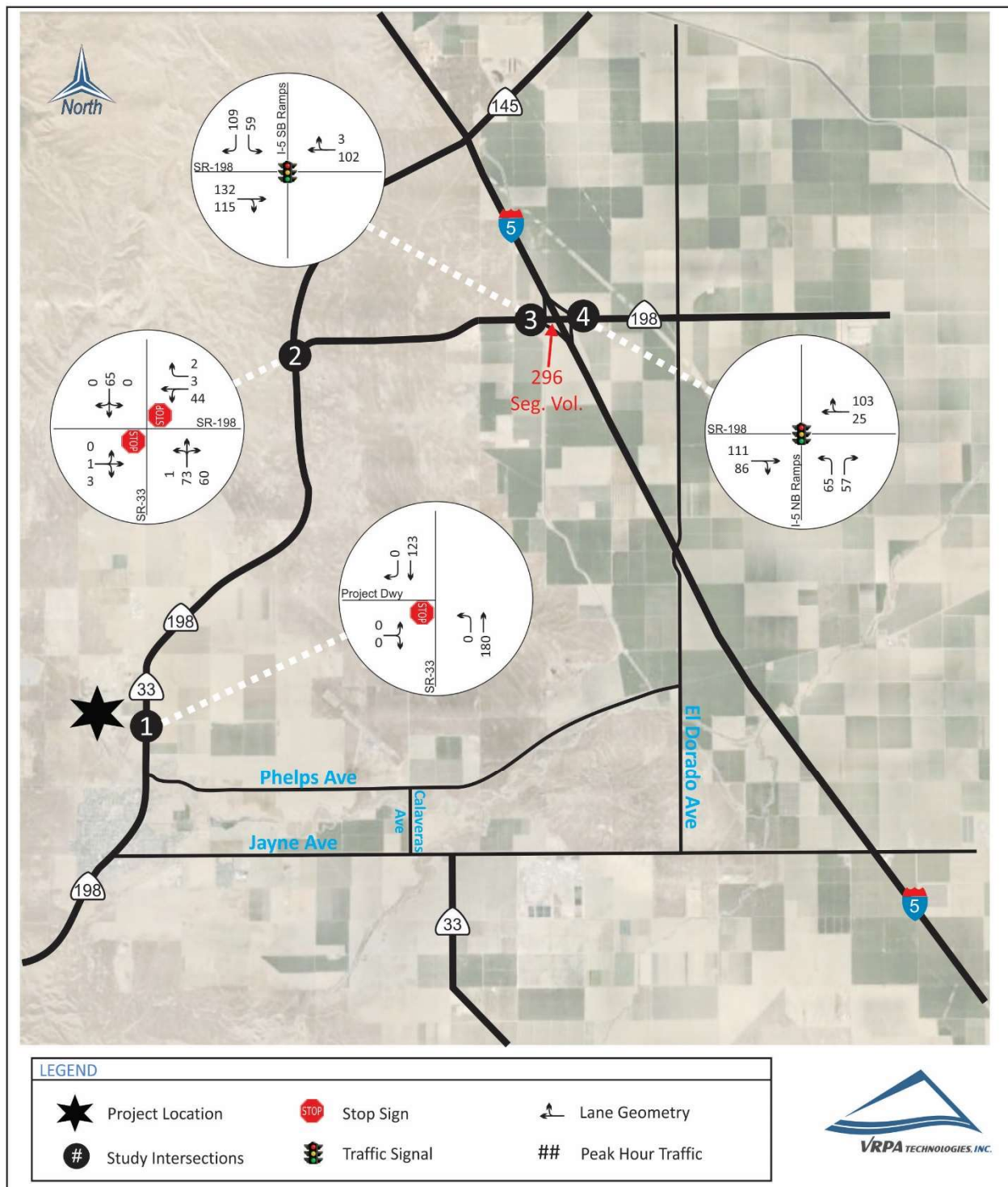
Granite Construction Company Coalinga Mine Expansion
Granite Construction Company 5-Axle or greater Truck Volumes

Figure
2-9



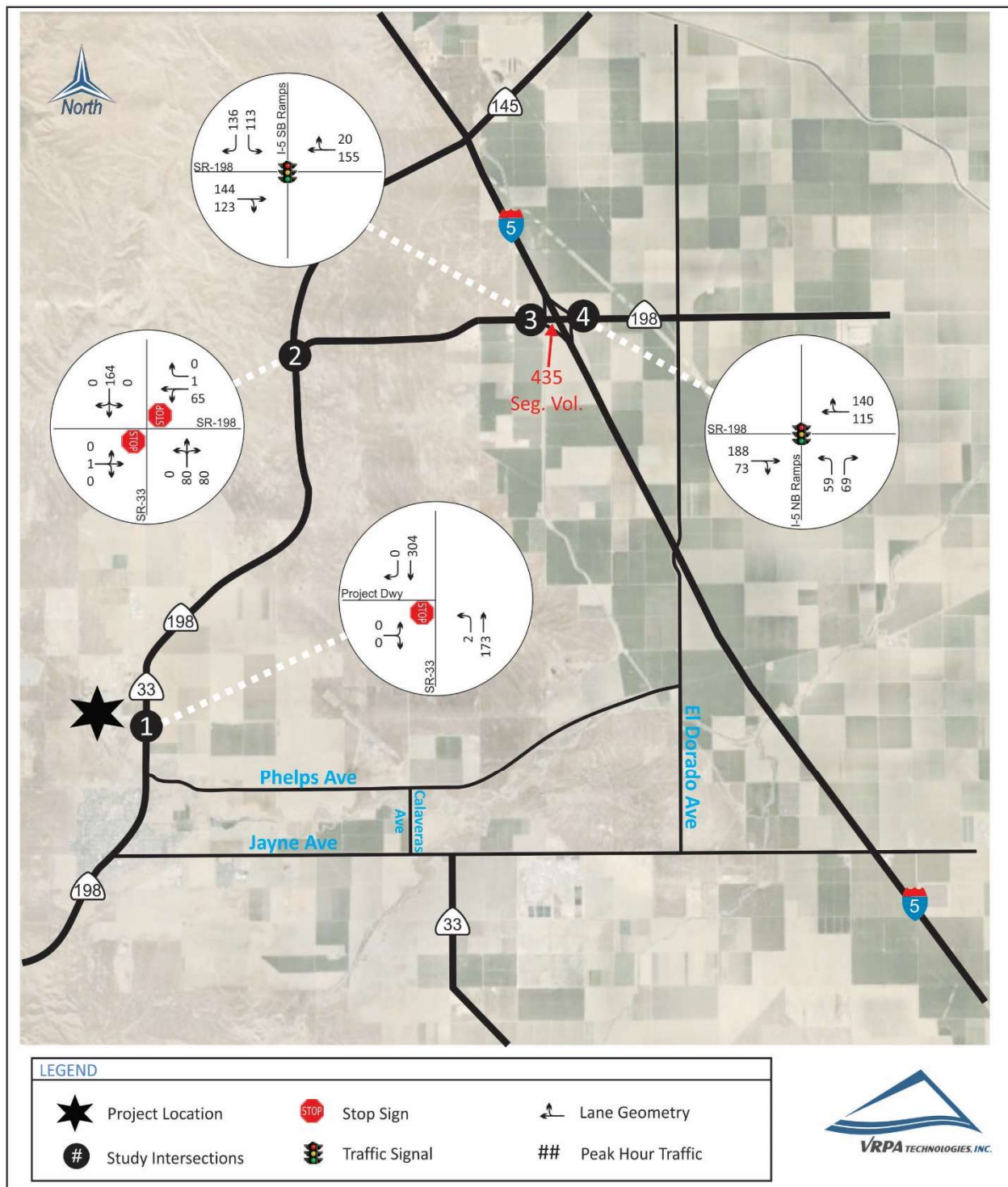
Granite Construction Company Coalinga Mine Expansion
Existing AM Peak Hour Traffic - Scenario 1

Figure
2-10



Granite Construction Company Coalinga Mine Expansion
Existing PM Peak Hour Traffic - Scenario 1

Figure
2-11



Granite Construction Company Coalinga Mine Expansion
Daily Segment Volumes - Scenario 1

Figure
2-12

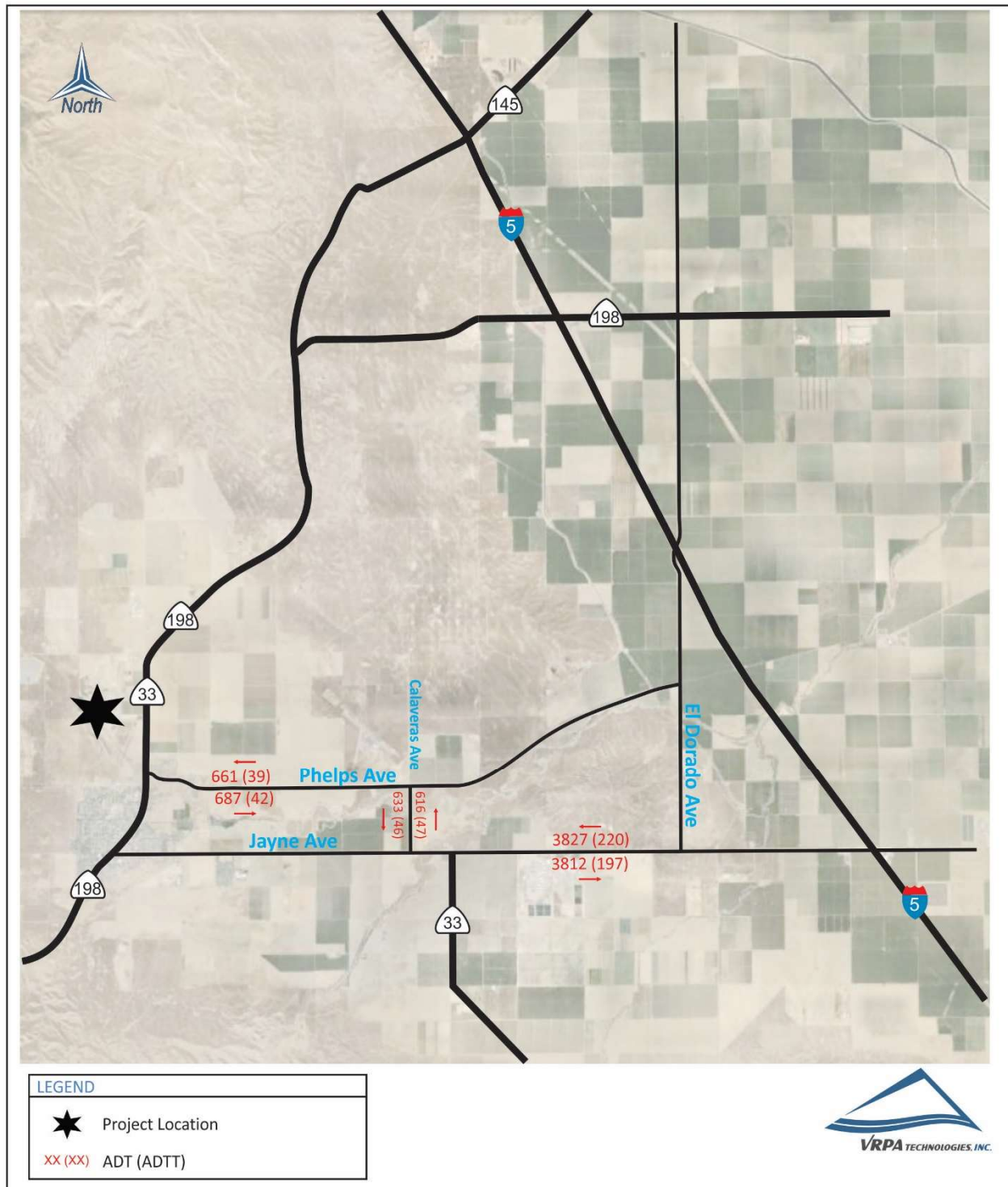


Table 2-1
Existing Intersection Operations

INTERSECTION	CONTROL	TARGET LOS	PEAK HOUR	EXISTING		MODIFIED EXISTING SCENARIO 1	
				DELAY	LOS	DELAY	LOS
1. SR 33 / Project Driveway	One-Way Stop	C	AM	10.5	B	0.0	A
			PM	7.9	A	7.9	A
2. SR 33 / SR 198	Two-Way Stop	C	AM	10.9	B	10.5	B
			PM	12.2	B	12.2	B
3. I-5 SB Off Ramp / SR 198	Signalized	C	AM	20.2	C	20.2	C
			PM	19.0	B	19.0	B
4. I-5 NB Off Ramp / SR 198	Signalized	C	AM	6.6	A	6.7	A
			PM	5.6	A	5.6	A

DELAY is measured in seconds

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded

For signalized and all-way stop controlled intersections, delay results show the average for the entire intersection. For one-way and two-way stop controlled intersections, delay results show the delay for the worst movement.

Table 2-2
Existing Segment Operations

STREET SEGMENT	SEGMENT DESCRIPTION	TARGET LOS	CAPACITY ¹	PEAK HOUR	EXISTING			MODIFIED EXISTING SCENARIO 1		
					VOLUME	V/C ²	LOS	VOLUME	V/C ²	LOS
SR 198										
I-5 SB Off Ramp to I-5 NB Off Ramp	2 Lanes Undivided	C	1,350	AM	300	0.22	C	296	0.22	C
				PM	435	0.32	C	435	0.32	C

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded

1: Modified HCM-Based LOS Tables (Florida Tables)

2: Volume to Capacity Ratio

3.0 Traffic Impacts

This chapter provides an assessment of the traffic the Project is expected to generate and the impact of that traffic on the surrounding street system.

3.1 Trip Generation

Based upon the Project's annual Surface Mining and Reclamation Act (SMARA) reports for the past 12 years, the annual average production at the existing site is 1.5 million tons. The Project's trip generation was estimated using sales data provided by Project representatives. Typically, trip generation is based on trip generation rates per the Institute of Transportation Engineer's (ITE) Trip General Manual. However, the ITE Trip Generation Manual does not provide trip rates for Sand and Gravel facilities. As a result, use of average sales production levels from the Project site is appropriate for determining the Project's trip generation. The Project's estimated daily, AM peak hour, and PM peak hour trips are provided in Table 3-1. The daily trip estimates presented in Table 3-1 are based on sales at an annual production rate of 1.5 million tons per year averaged over 250 working days in a year and assume each haul truck carries 25 tons of material. A passenger car equivalent (PCE) of 2.5 for all Project truck trips entering and exiting the facility is also provided in Table 3-1, which is consistent with County/Caltrans staff recommendations.

The estimated trips reflected in Table 3-1 are 'existing' trips from the Project's current operation. The Project (expansion) will not modify the current production levels, hours of operation, materials to be mined, equipment types, or mining methods.

Table 3-1
Granite Construction Company Trip Generation

TOTAL SALES	DAILY TRIP ENDS ¹ (ADT)	AM PEAK HOUR				PM PEAK HOUR			
		IN:OUT SPLIT	VOLUME			IN:OUT SPLIT	VOLUME		
	VOLUME		IN	OUT	TOTAL		IN	OUT	TOTAL
1.5 Million Tons/Year Total	480 Truck Trips	50:50	60	60	120	50:50	12	12	24
	20 Employee Trips	85:15	9	1	10	20:80	2	8	10
EXISTING PROJECT SITE TRIPS	500		69	61	130		14	20	34
EXISTING PROJECT SITE TRIPS (PCE)	1,220		159	151	310		32	38	70
PROJECT SITE TRIPS W/ EXPANSION	500		69	61	130		14	20	34
PROJECT SITE TRIPS W/ EXPANSION (PCE)	1,220		159	151	310		32	38	70

1 A "trip" is defined as a "one-way" trip

Maximum AM peak hour trips for aggregate are based on the time it takes for a loaded truck to drive onto the scale and is issued a weigh ticket. In the ideal case, this process takes at least 1 minute. Therefore, in 1 hour, 60 loads or 60 truck trips would make it out. It is a conservative assumption that trucks would be coming in at the same rate as the trucks going out for a total of 120 peak hour truck trips. It should also be noted that ratio of AM peak hour trips to Daily trips for the Coalinga Mine site is consistent with trip generation information from several other sand and gravel mining sites in Fresno County.

Total PM peak hour truck trips represent 5% of the Daily truck trips. On a typical day, the demand for aggregate deliveries generally decrease over the course of the day (i.e., greater trips during the AM hours and decreasing into the PM hours) which is consistent with the Project's typical hours of operation and the peak hour trips as shown above. It should be noted that employee trips to the site generally take place outside of the typical 7-9am and 4-6pm peak hours.

3.2 Trip Distribution

Trip Distribution for the 'existing' Project trips, as depicted in Table 3-1, was determined using sales data provided by Project representatives. VRPA performed a detailed review of sales data provided by Granite Construction Company to determine the trip distribution for the Coalinga Mine site with the baseline production level of 1.5 million tons per year. Use of project sales data to develop trip distribution for sand and gravel project's is a typical practice and is a reasonable approach for this Project. Figure 3-1 depicts the estimated Project trip distribution percentages for existing site operations. Using the trip distribution percentages shown in Figure 3-1, Project trips were assigned to the roadway network in the vicinity of the Project site. The distribution of traffic volumes for daily, AM peak hour, and PM peak hour are shown in Figures 3-2 through 3-4. It should be noted that the scope for this TIS included a trip trace to the intersections of I-5 NB Off Ramp and Jayne Avenue, SR-33 and Jayne Avenue, SR-33 and Juniper Ridge Boulevard, SR-33 and 5th Street, and SR-33 and 3rd Street. Project AM and PM peak hour trips to the trip trace only intersections are provided in Figures 3-2 and 3-3.

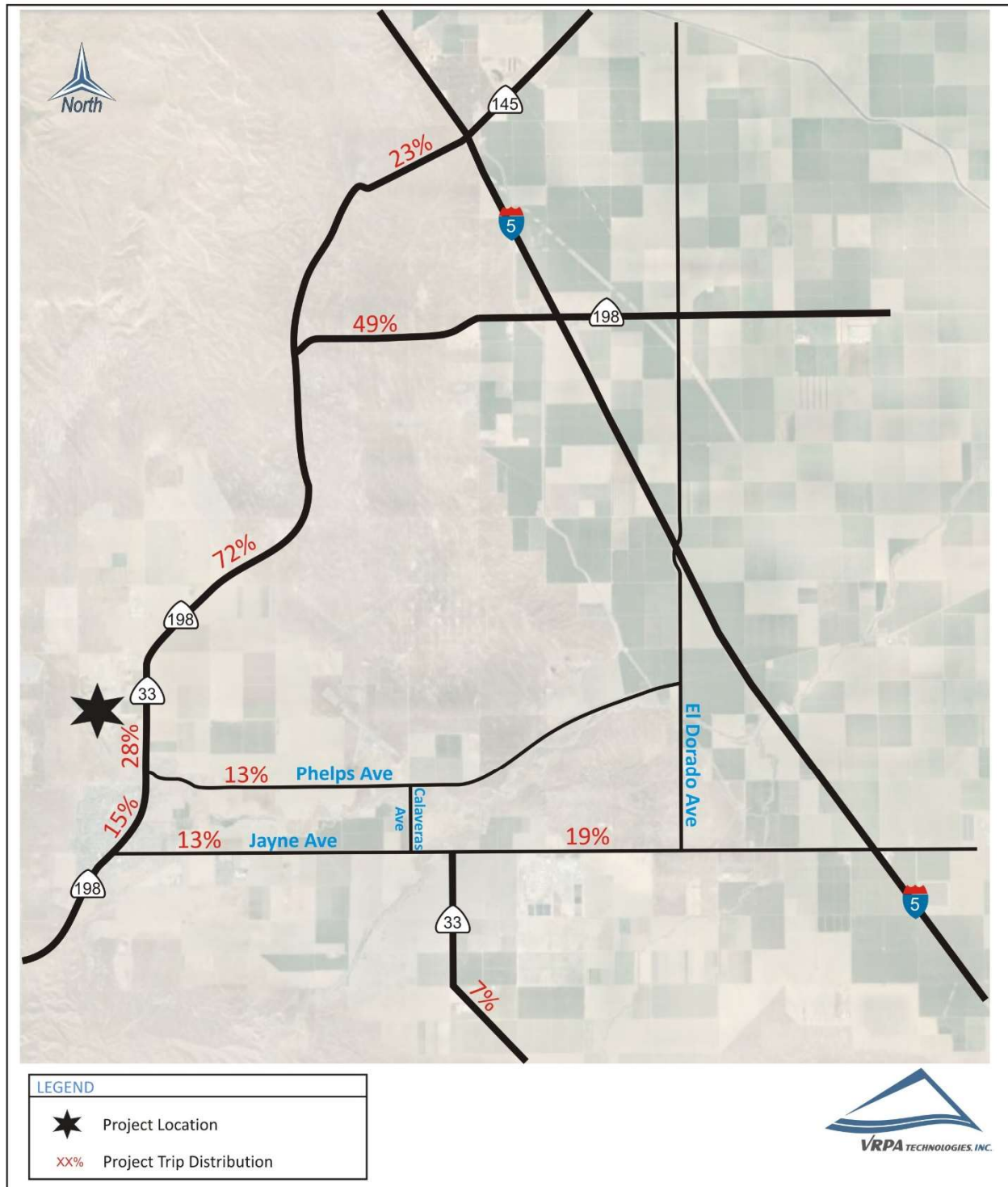
Access to the site is provided along SR-33 via one (1) driveway located approximately $\frac{3}{4}$ miles north of Phelps Avenue. The lone driveway along SR-33 is a full access driveway with a one-way stop sign for vehicles exiting the site.

3.3 Modified Existing Scenario 2

A Modified Existing Scenario 2 was evaluated to assess existing conditions Plus Granite Construction Trips associated with 1.5 million tons of sales. Project trips provided in Figures 3-2, 3-3, and 3-4 were added to the volumes developed for Modified Existing Scenario 1. The resulting traffic is shown in Figures 3-5, 3-6, and 3-7.

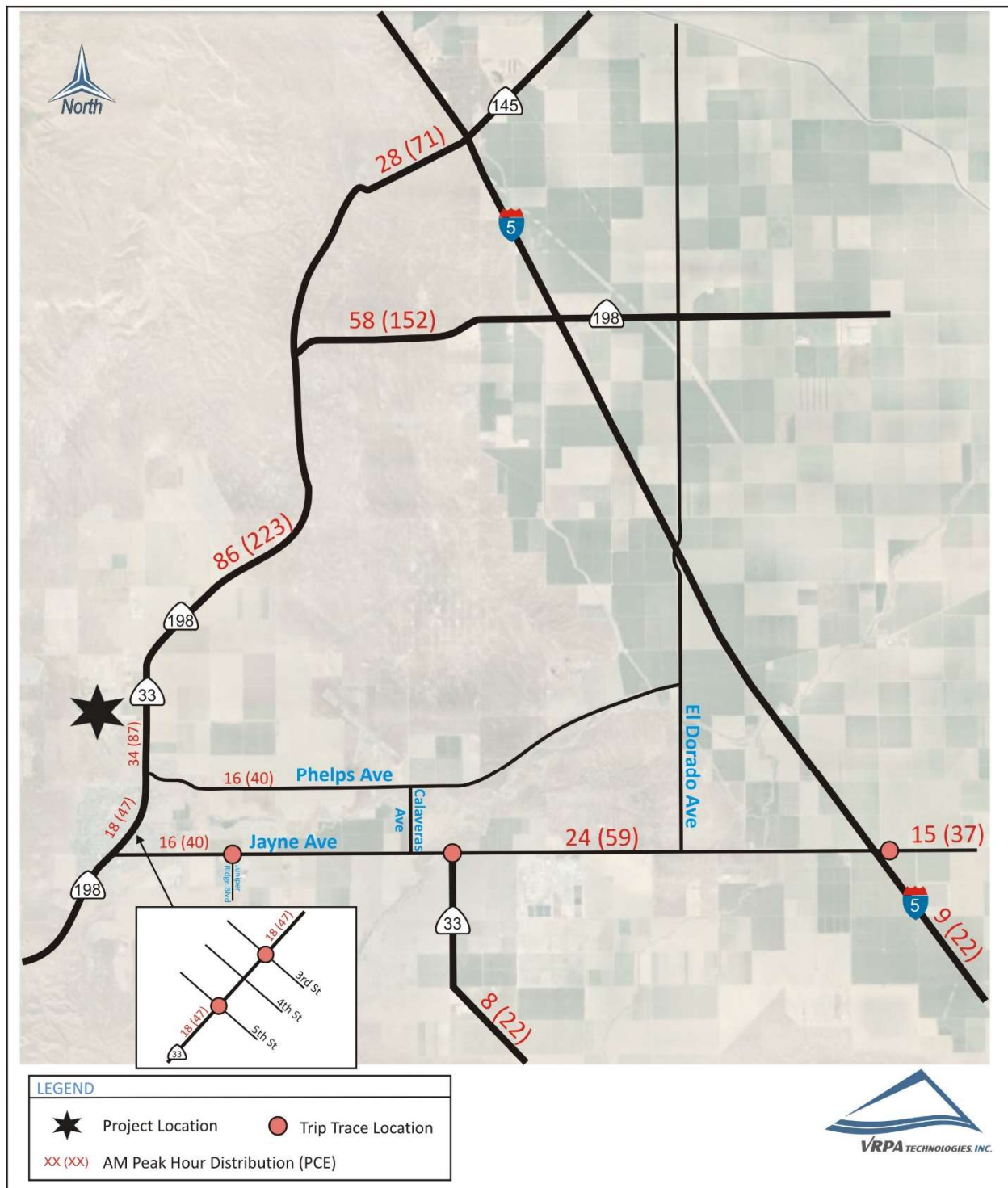
**Granite Construction Company Coalinga Mine Expansion
Project Trip Distribution**

**Figure
3-1**



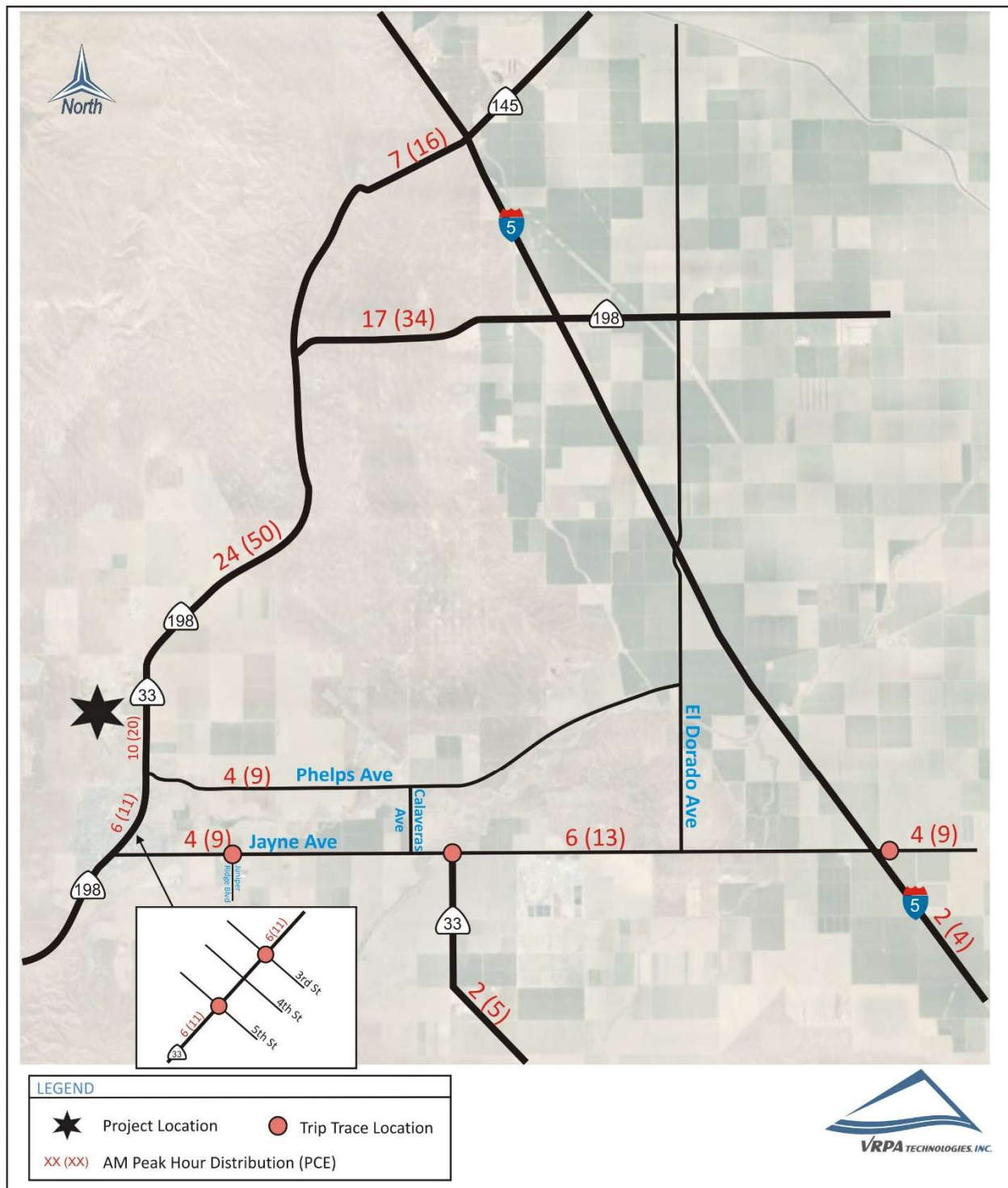
Granite Construction Company Coalinga Mine Expansion
AM Peak Hour Trip Distribution

Figure
3-2



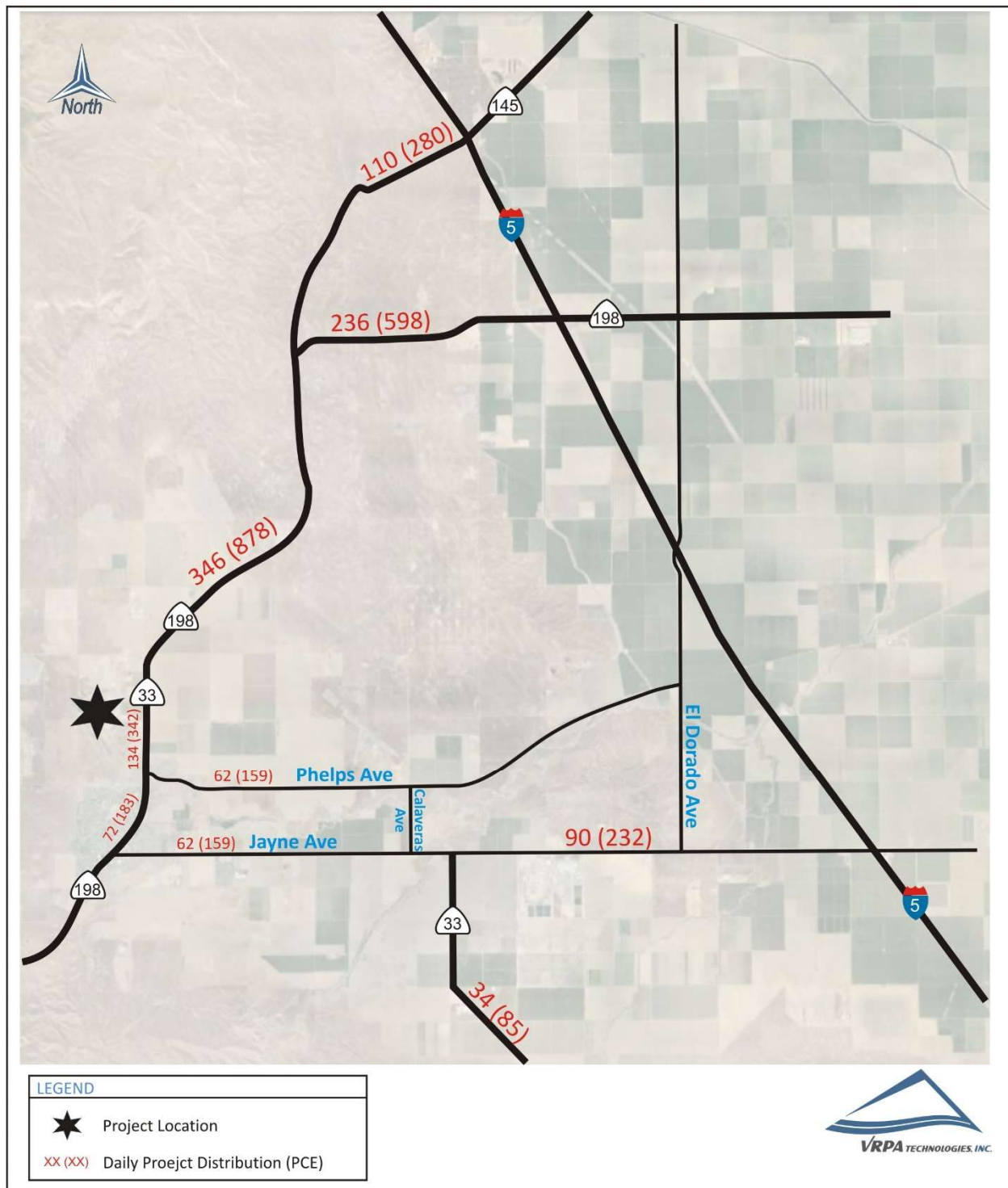
Granite Construction Company Coalinga Mine Expansion
PM Peak Hour Trip Distribution

Figure
3-3



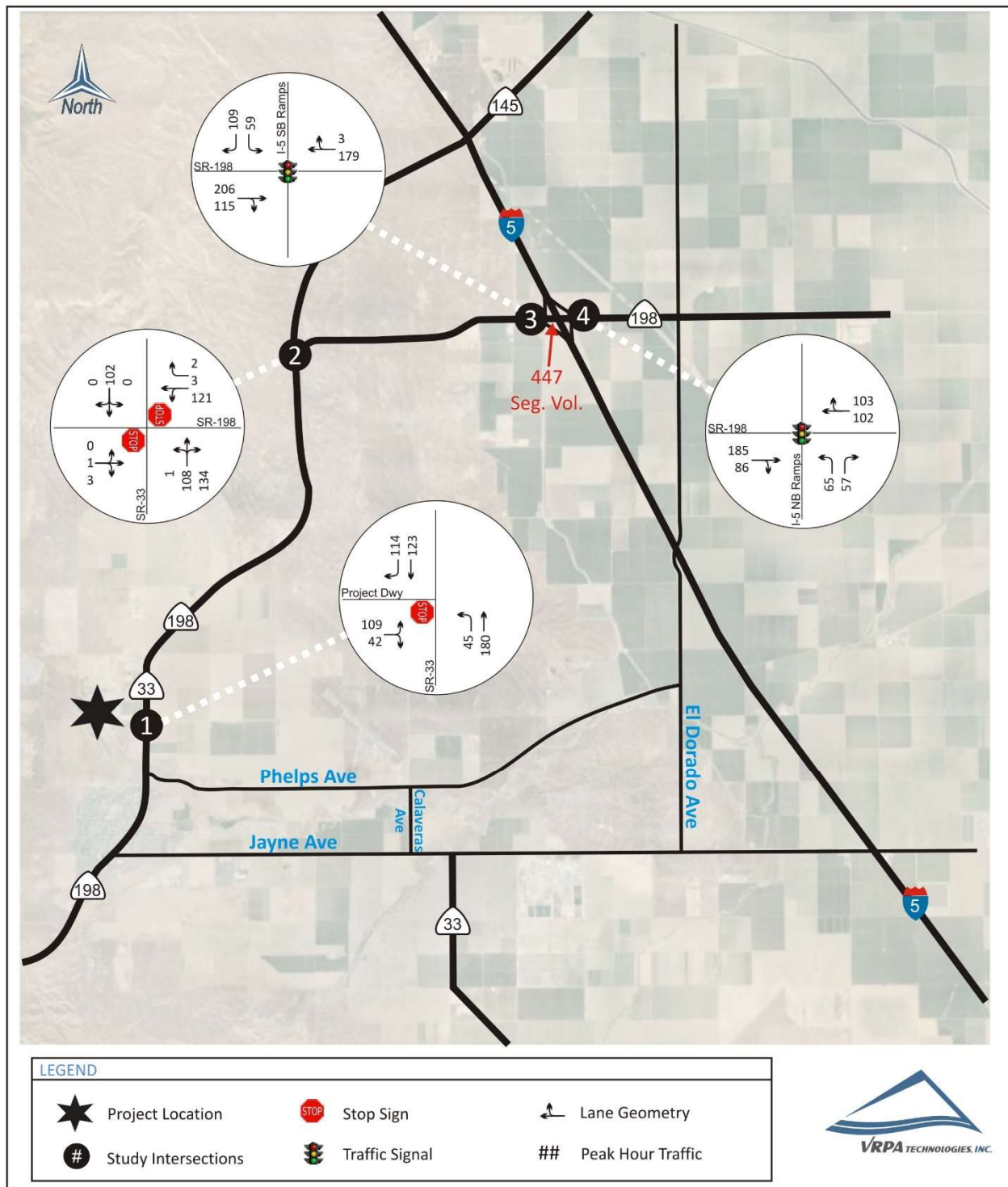
Granite Construction Company Coalinga Mine Expansion
Daily Trip Distribution

Figure
3-4



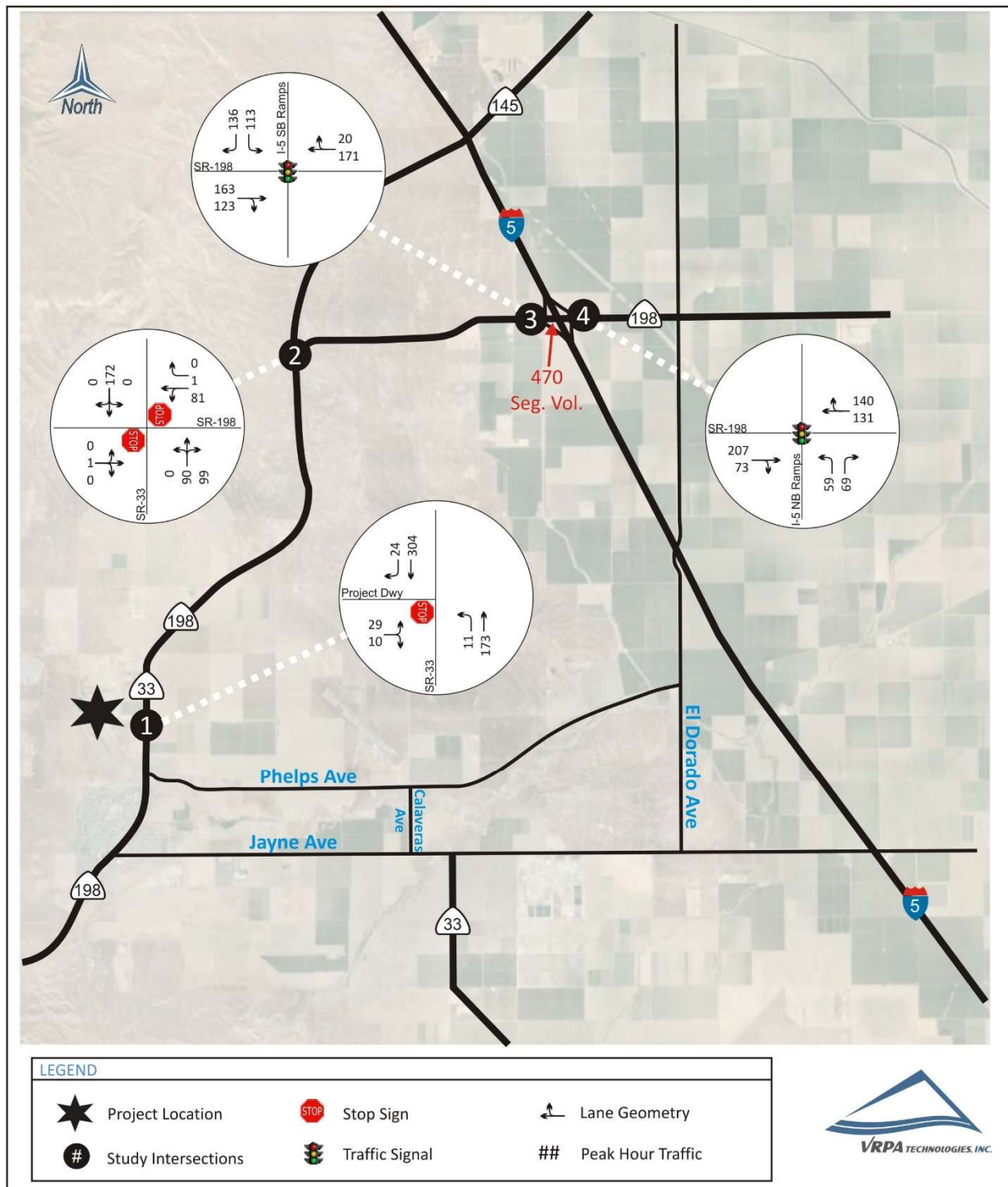
Granite Construction Company Coalinga Mine Expansion
Existing AM Peak Hour Traffic - Scenario 2

Figure
3-5



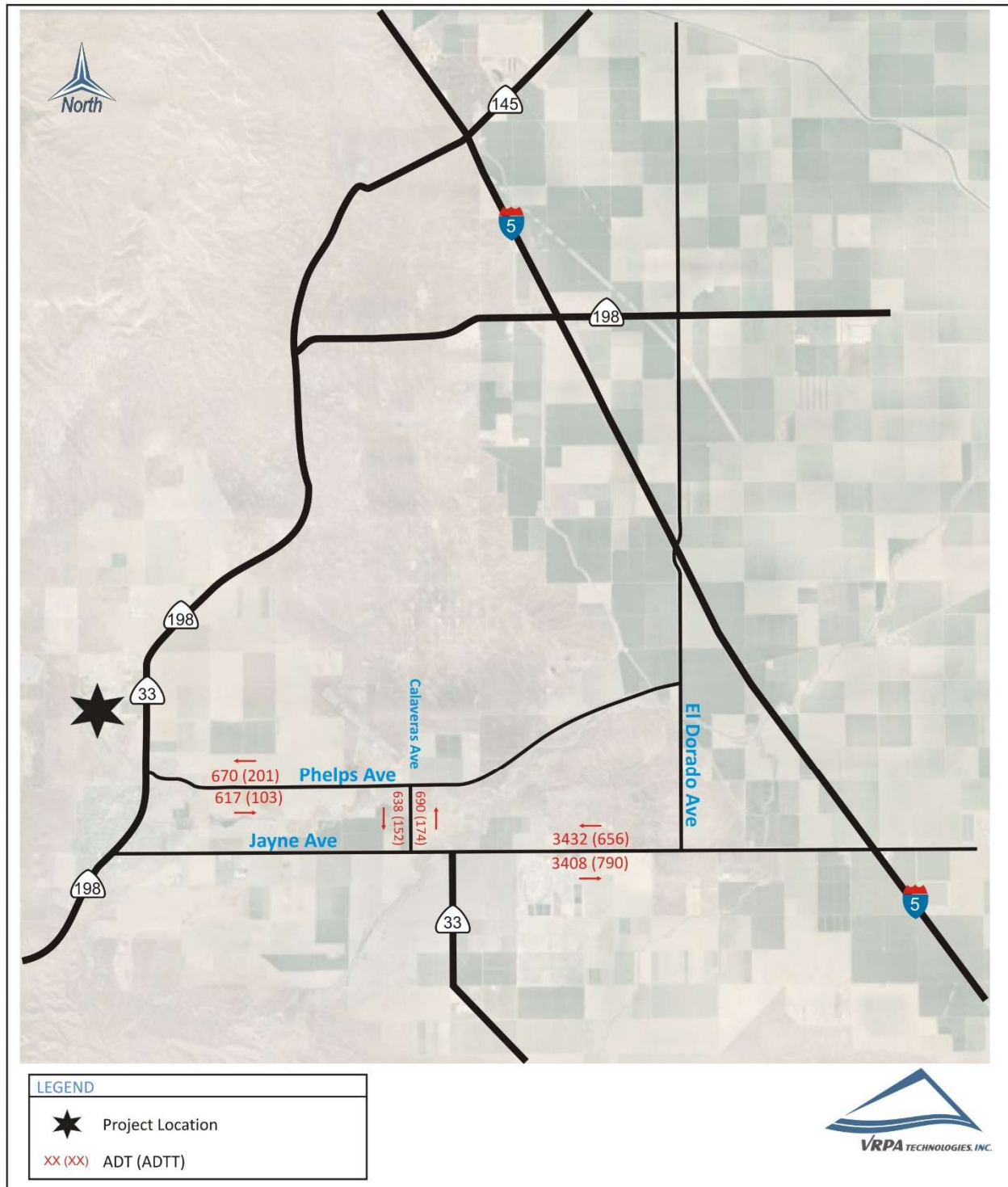
Granite Construction Company Coalinga Mine Expansion
Existing PM Peak Hour Traffic - Scenario 2

Figure
3-6



Granite Construction Company Coalinga Mine Expansion
Daily Segment Volumes - Scenario 2

Figure
3-7



3.4 Cumulative Year 2040 Scenarios

The Cumulative Year 2040 Scenario 1 (omitting actual Granite Construction trips included in existing counts) was determined by applying a 2% per year growth rate (consistent with Fresno COG model projections) to the Modified Existing Scenario 1 volumes as documented in Section 2.0. The resulting traffic is shown in Figures 3-8, 3-9, and 3-10.

Project trips (1.5 million tons of sales) provided in Figures 3-2, 3-3, and 3-4 were added to the volumes shown in Figures 3-8, 3-9, and 3-10 to develop volumes for the Cumulative Year 2040 Scenario 2 (including Granite Construction trips associated with operations of 1.5 million tons of sales). The resulting traffic is shown in Figures 3-11, 3-12, and 3-13.

3.5 Impacts

3.5.1 Intersection Capacity Analysis

Table 3-2 shows the results of the intersection analysis for the study intersections include in this TIS. Results of the analysis show that all of the study intersections will operate at acceptable levels of service for the Modified Existing Scenario 2, Cumulative Year 2040 Scenario 1, and Cumulative Year 2040 Scenario 2 conditions. As a result, mitigation measures are not recommended for Project impacts to study intersections.

Caltrans has determined that its facilities at I-5 NB Off Ramp and Jayne Avenue, SR-33 and Jayne Avenue, SR-33 and Juniper Ridge Boulevard, SR-33 and 5th Street, and SR-33 and 3rd Street would require improvements in order to accommodate projected future demand and has required that the Project identify trips to these facilities. Table 3-3 identifies the number of trips generated by the Project that will impact Caltrans' facilities and the corresponding fee that the Project is responsible for.

3.5.2 Roadway Segment Capacity Analysis

Table 3-4 shows roadway segment volumes and levels of service pertaining to the Modified Existing Scenario 2, Cumulative Year 2040 Scenario 1, and Cumulative Year 2040 Scenario 2 conditions. Results of the analysis show that the study roadway segment will meet acceptable levels of service for the Modified Existing Scenario 2, Cumulative Year 2040 Scenario 1, and Cumulative Year 2040 Scenario 2 conditions. As a result, mitigation measures are not recommended for Project impacts to the SR 198 roadway segment between the I-5 SB Off Ramp and I-5 NB Off Ramp.

3.5.3 Traffic Index Analysis

The traffic impact analysis included an evaluation of the Project's impact to the Traffic Index (TI) along the roadway segments analyzed as part of this TIS, which include Phelps Avenue between

SR-33 and Calaveras Avenue, Calaveras Avenue between Phelps Avenue and SR-33, and Jayne Avenue between SR-33 and I-5. Fresno County has established significance criteria for the purpose of determining if a project has an impact to the traffic index of County facilities. If truck traffic generated by the Project results in the TI increasing by a factor of 0.5, the Project is required to mitigate the roadway structural section to accommodate the increase in truck traffic.

The analysis of the TI was determined by Chapter 610 of Caltrans' Highway Design Manual. TI calculations are based on a 365-day period, whereas the average daily truck trips presented in Table 3-1 are based on 250 operational days per year. Therefore, the Project trips will be converted for use in the calculation of TI's as follows:

$$(480 \text{ average daily truck trips} \times 250 \text{ days}) / (365 \text{ days}) = 329 \text{ ADT}$$

This ADT will then be distributed to study area roads based on the projected trip distribution discussed previously. Project impacts to the TI will be calculated based on a 20-Year Design Life considering the TI analysis approach below. As noted previously, the Project will not modify the 'current' production levels, hours of operation, materials to be mined, equipment types, or mining methods. Although the Project will not generate any "new" trips, the expansion of the Project site will allow Granite Construction to continue operations at 1.5 million tons of production.

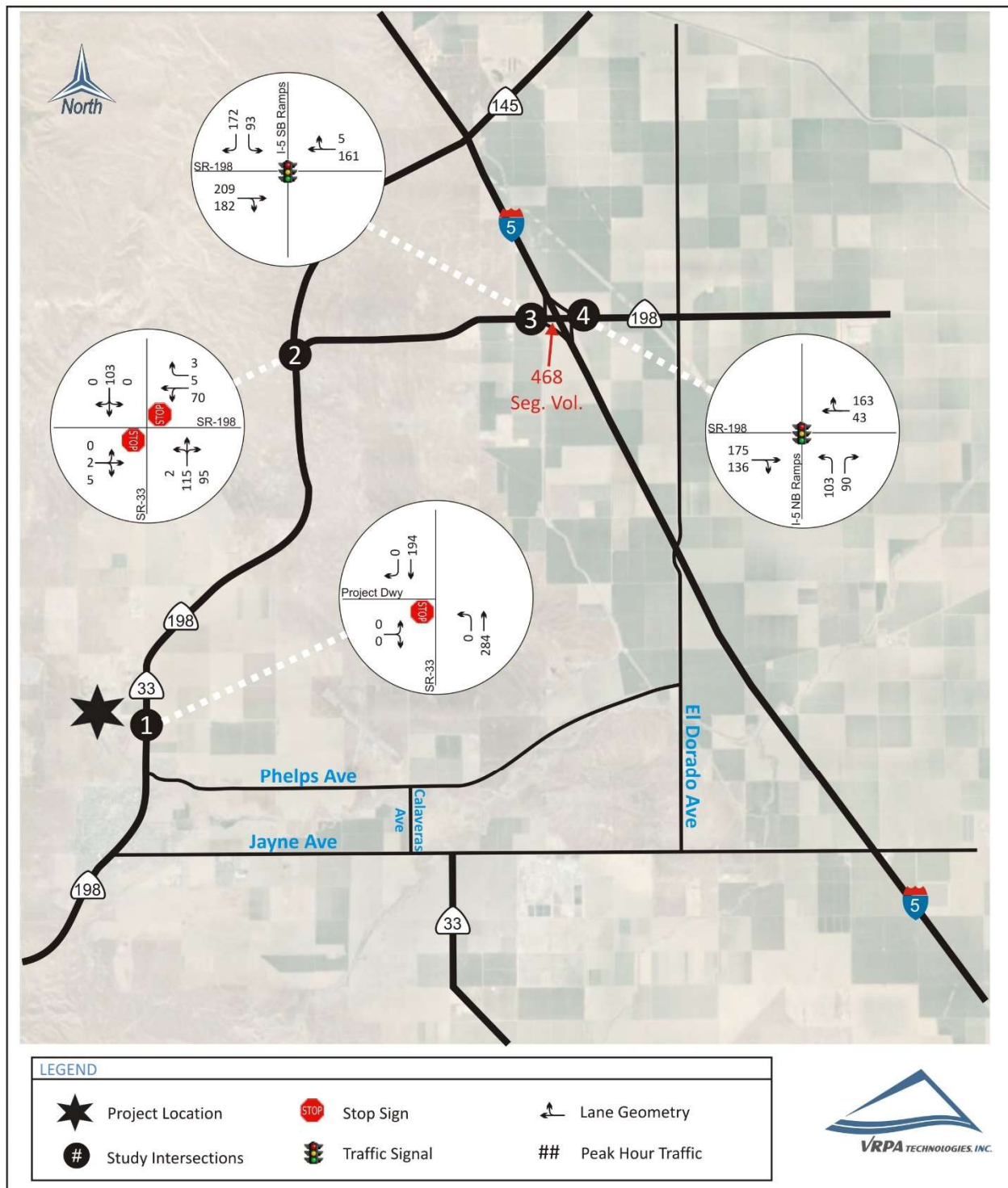
- ✓ Modified Existing Scenario 1 – Determine the TI (20 Year-Design) along the roadways indicated above considering existing traffic counts (omitting actual Granite Construction trips included in existing counts)
- ✓ Modified Existing Scenario 2 – Determine the TI (20 Year-Design) along the roadways indicated above considering existing traffic counts (including current Granite Construction operations of 1.5 million tons of sales)

Results of the analysis are shown in Table 3-5. Results show that the Project will impact all three (3) of the roadways analyzed since the Project's truck traffic results in the TI increasing by a factor of 0.5 or greater. As a result, the Project is responsible for costs associated with the TI increase.

Table 3-6 shows the equitable share responsibility to Fresno County facilities related to pavement structure. The Operational Statement for the proposed Project indicates that the expansion area contains an estimated eighty-two (82) million tons of aggregate reserves, which would allow for greater than fifty (50) years of additional operational life at an average annual production of 1.5 million tons.

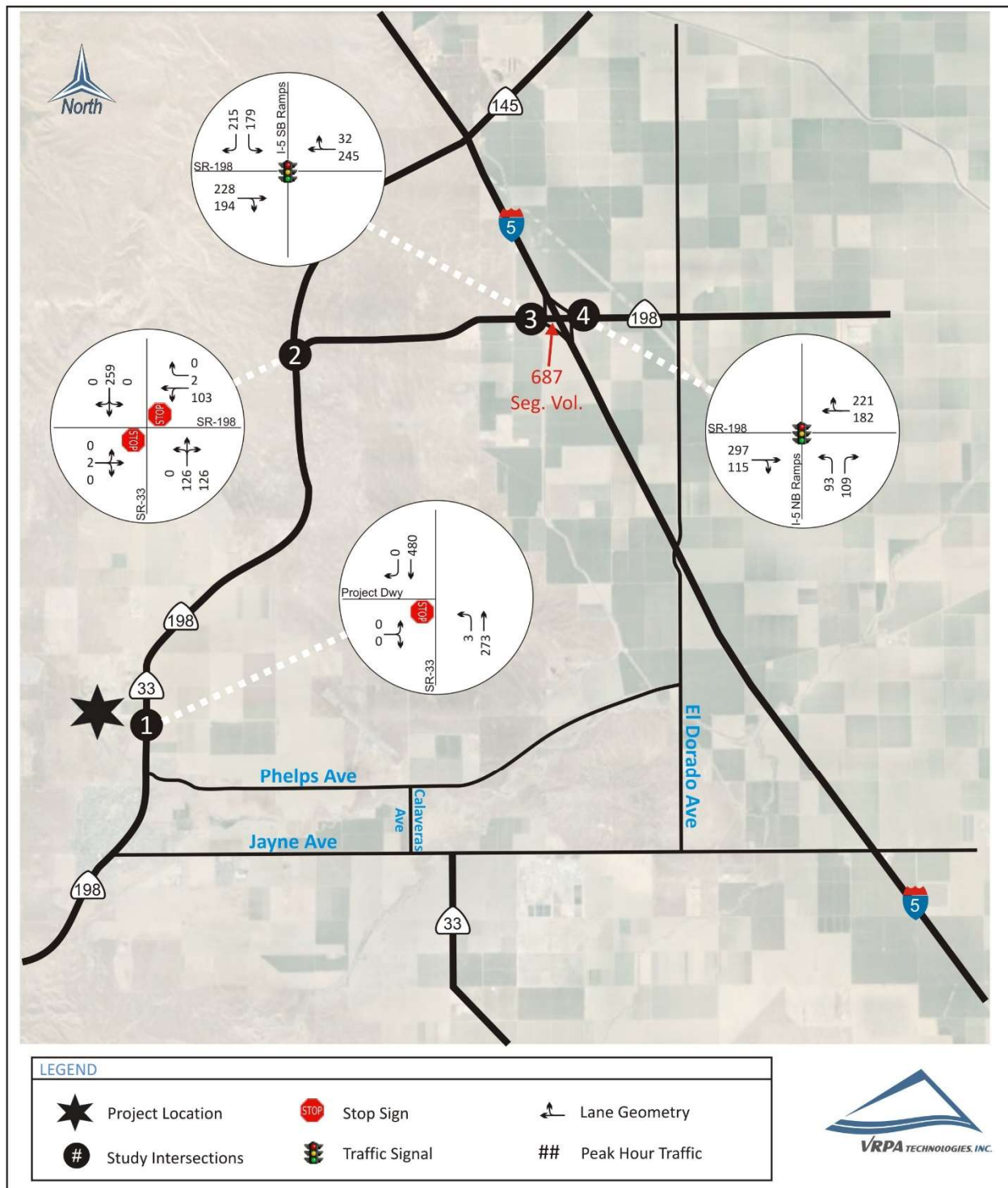
Granite Construction Company Coalinga Mine Expansion
Cumulative Year 2040 AM Peak Hour Traffic - Scenario 1

Figure
3-8



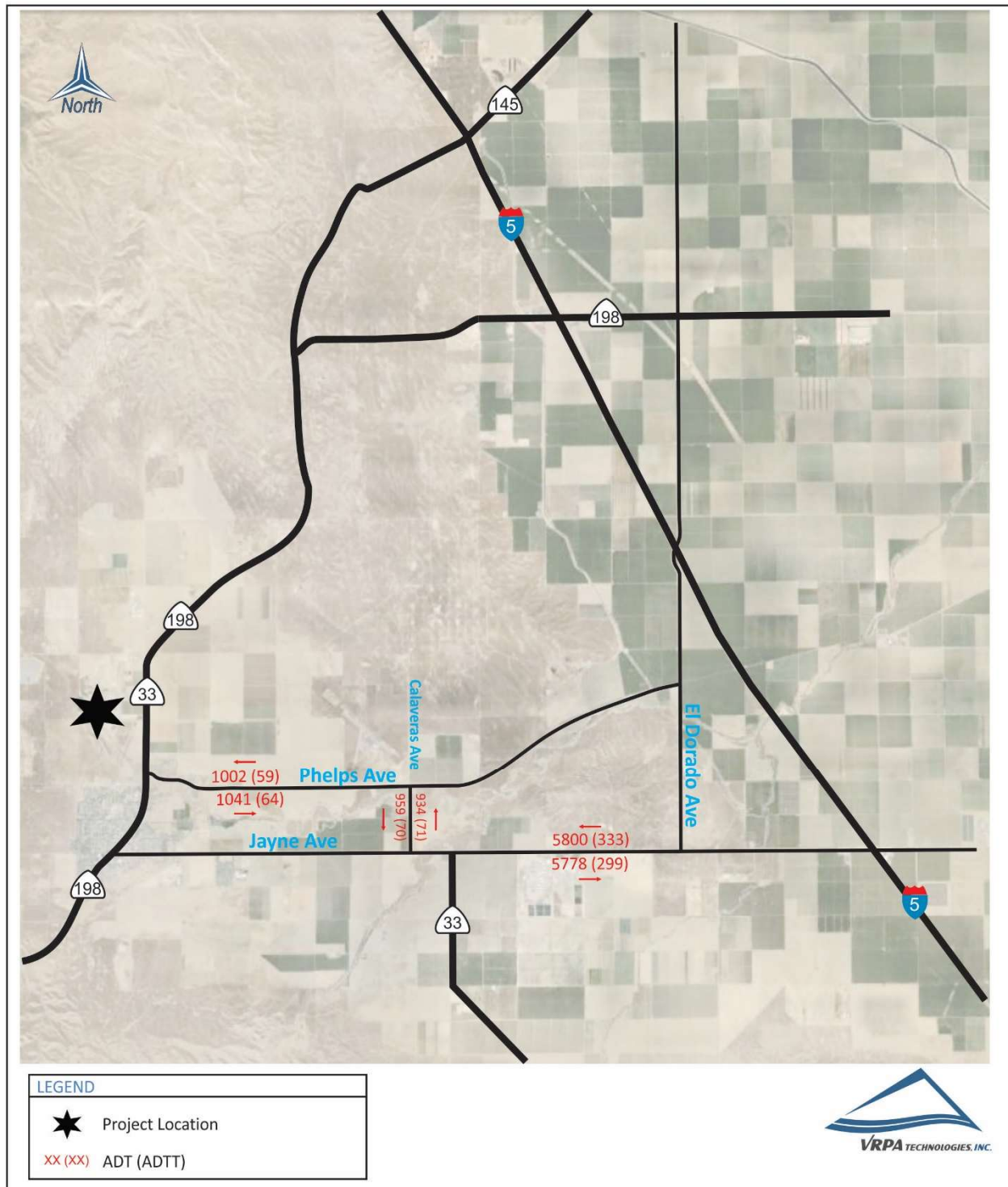
Granite Construction Company Coalinga Mine Expansion
Cumulative Year 2040 PM Peak Hour Traffic - Scenario 1

Figure
3-9



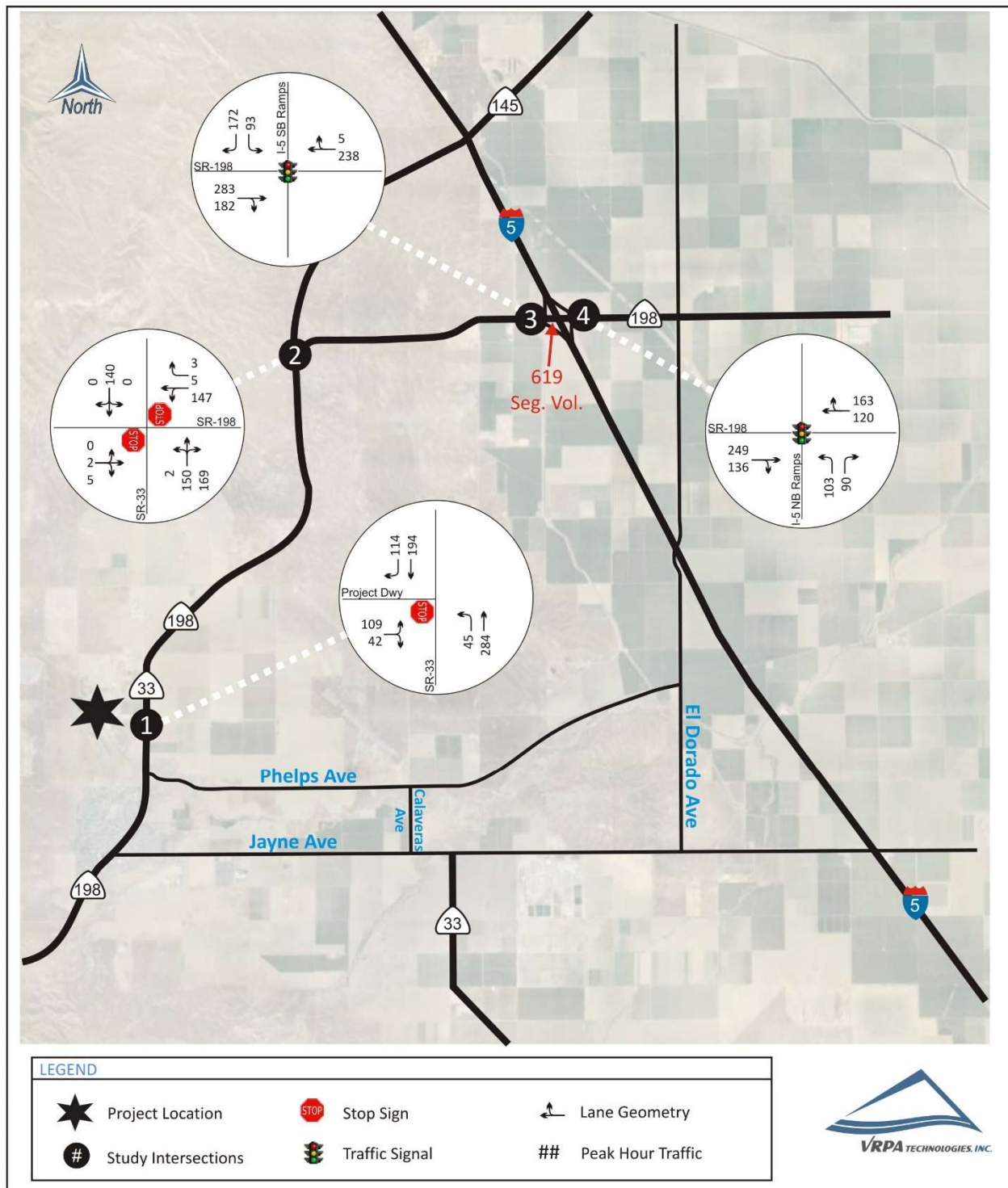
Granite Construction Company Coalinga Mine Expansion
Cumulative Year 2040 Daily Segment Volumes - Scenario 1

Figure
3-10



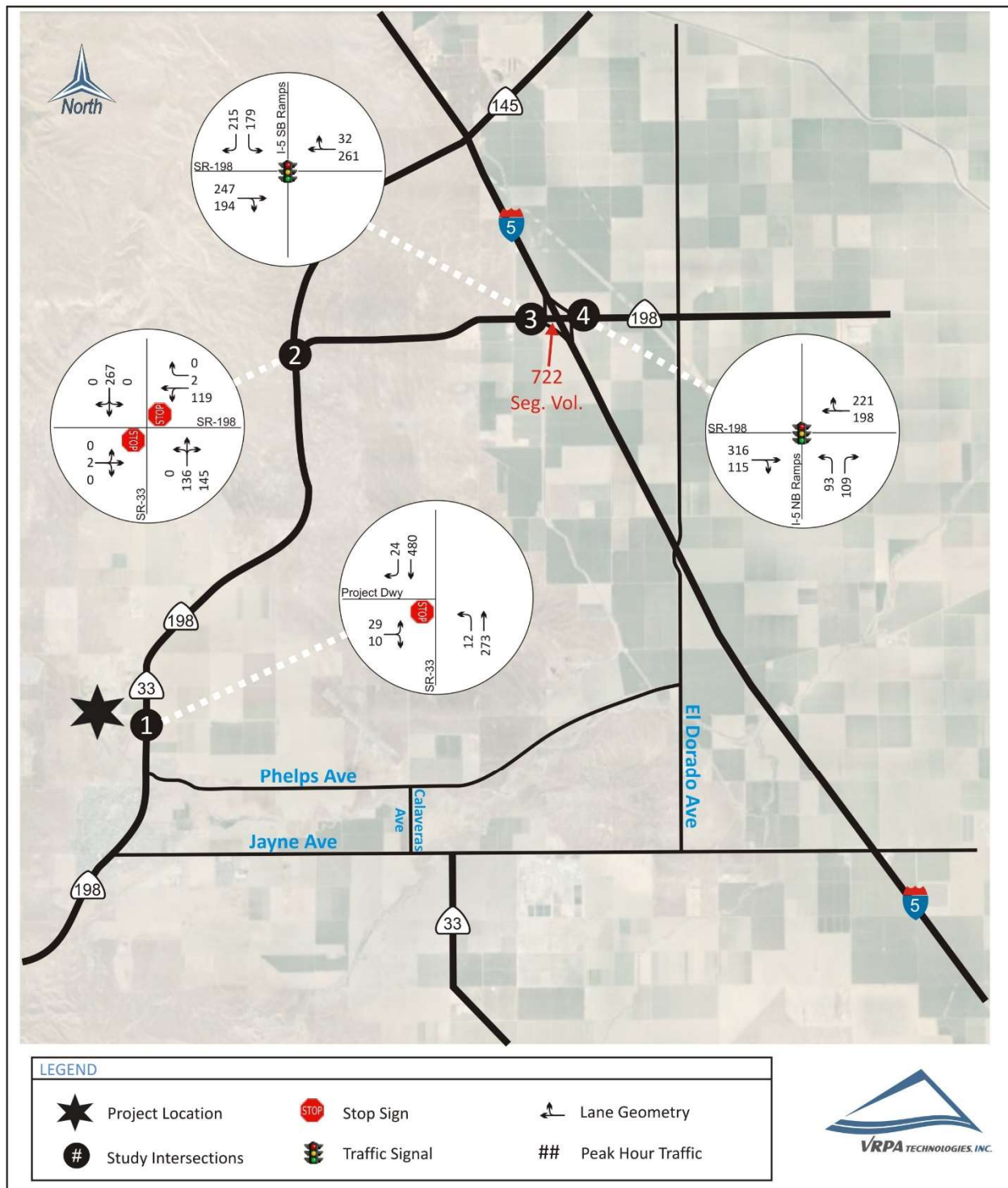
Granite Construction Company Coalinga Mine Expansion
Cumulative Year 2040 AM Peak Hour Traffic - Scenario 2

Figure
3-11



Granite Construction Company Coalinga Mine Expansion
Cumulative Year 2040 PM Peak Hour Traffic - Scenario 2

Figure
3-12



Granite Construction Company Coalinga Mine Expansion
Cumulative Year 2040 Daily Segment Volumes - Scenario 2

Figure
3-13

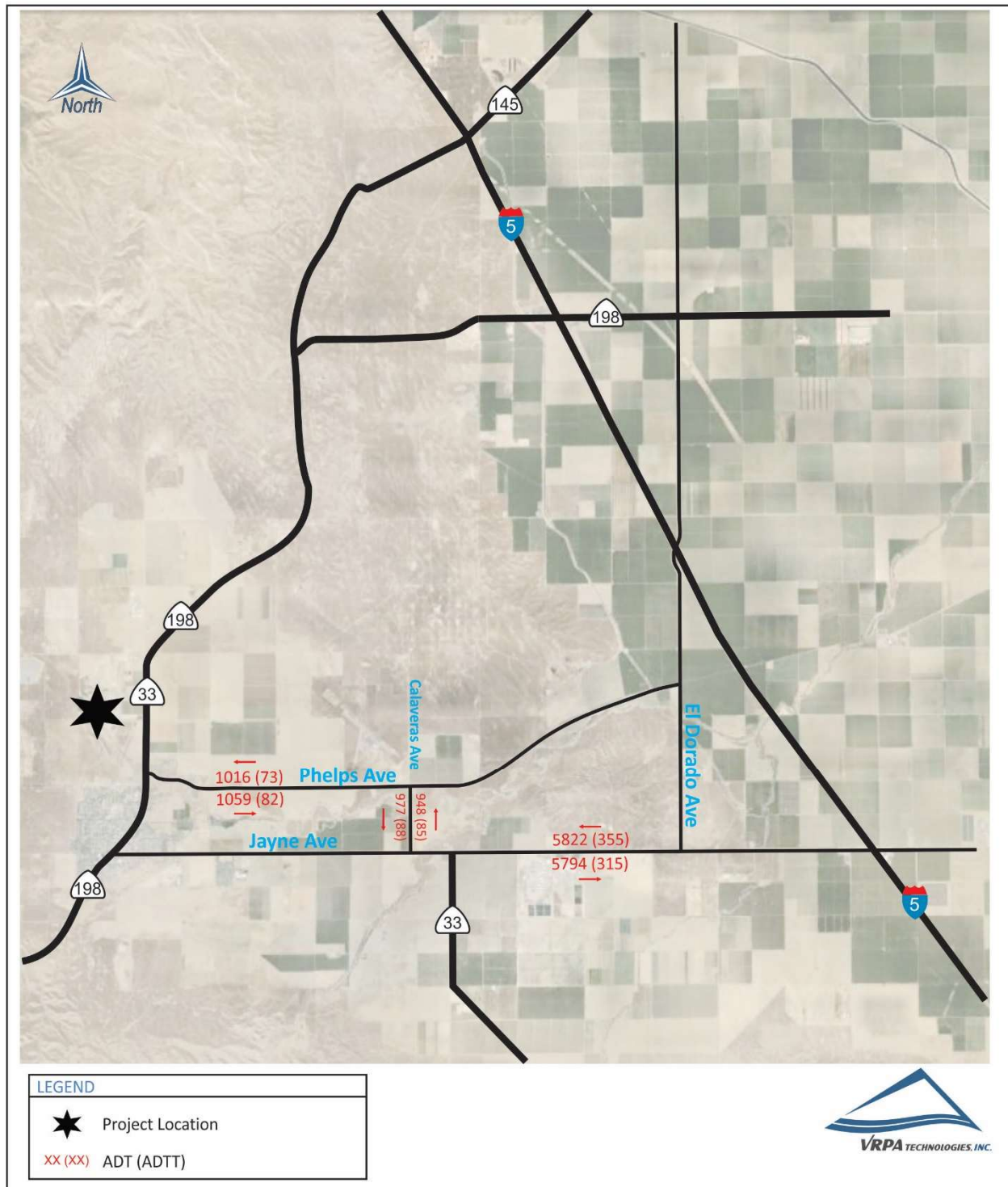


Table 3-2
Intersection Operations

INTERSECTION	CONTROL	TARGET LOS	PEAK HOUR	MODIFIED EXISTING SCENARIO 2		CUMULATIVE YEAR 2040 SCENARIO 1		CUMULATIVE YEAR 2040 SCENARIO 2	
				DELAY	LOS	DELAY	LOS	DELAY	LOS
1. SR 33 / Project Driveway	One-Way Stop	C	AM	14.3	B	0.0	A	15.6	C
			PM	12.8	B	8.4	A	16.1	C
2. SR 33 / SR 198	Two-Way Stop	C	AM	13.4	B	11.8	B	15.4	C
			PM	12.9	B	15.5	C	16.8	B
3. I-5 SB Off Ramp / SR 198	Signalized	C	AM	21.7	C	20.0	C	21.0	C
			PM	19.4	B	19.1	B	19.4	B
4. I-5 NB Off Ramp / SR 198	Signalized	C	AM	5.8	A	6.8	A	6.1	A
			PM	5.4	A	5.7	A	5.6	A

DELAY is measured in seconds

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded

For signalized and all-way stop controlled intersections, delay results show the average for the entire intersection. For one-way and two-way stop controlled intersections, delay results show the delay for the worst movement.

Table 3-3
Fair-Share Cost to Caltrans Facilities

INTERSECTION	ESTIMATED COST	COST / TRIP	PROJECT TRUCK TRIPS	FAIR SHARE COST
I-5 NB Off Ramp at Jayne Avenue	\$1,200,000	\$925	5	\$4,625
SR 33 at Jayne Avenue	\$173,000	\$90	34	\$3,060
SR 33 at Juniper Ridge Boulevard	\$173,000	\$90	17	\$1,530
SR 33 at 5th Street	\$470,000	\$162	19	\$3,078
SR 33 at 3rd Street	\$470,000	\$218	19	\$4,142

Table 3-4
Segment Operations

STREET SEGMENT	SEGMENT DESCRIPTION	TARGET LOS	CAPACITY ¹	PEAK HOUR	MODIFIED EXISTING SCENARIO 2			CUMULATIVE YEAR 2040 SCENARIO 1			CUMULATIVE YEAR 2040 SCENARIO 2		
					VOLUME	V/C ²	LOS	VOLUME	V/C ²	LOS	VOLUME	V/C ²	LOS
SR 198													
I-5 SB Off Ramp to I-5 NB Off Ramp	2 Lanes Undivided	C	1,350	AM	447	0.33	C	468	0.35	C	619	0.46	C
				PM	470	0.35	C	687	0.51	C	722	0.53	C

LOS = Level of Service / **BOLD** denotes LOS standard has been exceeded

1: Modified HCM-Based LOS Tables (Florida Tables)

2: Volume to Capacity Ratio

Table 3-5
Traffic Index Analysis

STREET SEGMENT	DIRECTION	EXISTING (w/out Granite Trips)	EXISTING (w/ Granite Trips)	INCREASE
Phelps Avenue				
SR-33 and Calaveras Avenue	Eastbound	8.0	8.5	0.5
	Westbound	8.0	8.5	0.5
Calaveras Avenue				
Phelps Avenue and Jayne Avenue	Northbound	8.5	9.0	0.5
	Southbound	8.5	9.0	0.5
Jayne Avenue				
Alpine Avenue and I-5	Eastbound	10.0	10.0	0.0
	Westbound	10.0	10.5	0.5

Bold denotes standard has been exceeded

Table 3-6
Equitable Fair-Share Responsibility

SEGMENT	DIRECTION	TI INCREASE DUE TO PROJECT TRIPS	FAIR SHARE PERCENTAGE
Phelps Avenue			
SR-33 to Calaveras Avenue	Eastbound	0.5	100.0%
	Westbound	0.5	100.0%
Calaveras Avenue			
Phelps Avenue to Jayne Avenue	Northbound	0.5	100.0%
	Southbound	0.5	100.0%
Jayne Avenue			
Alpine Avenue and I-5	Westbound	0.5	100.0%

APPENDIX A

Modified HCM-Based Tables (Florida Tables)

**Generalized Peak Hour Two-Way Volumes for Florida's
Urbanized Areas¹**

TABLE 4

12/18/12

INTERRUPTED FLOW FACILITIES						UNINTERRUPTED FLOW FACILITIES					
STATE SIGNALIZED ARTERIALS						FREEWAYS					
Class I (40 mph or higher posted speed limit)						Lanes	B	C	D	E	
Lanes	Median	B	C	D	E	4	4,120	5,540	6,700	7,190	
2	Undivided	*	1,510	1,600	**	6	6,130	8,370	10,060	11,100	
4	Divided	*	3,420	3,580	**	8	8,230	11,100	13,390	15,010	
6	Divided	*	5,250	5,390	**	10	10,330	14,040	16,840	18,930	
8	Divided	*	7,090	7,210	**	12	14,450	18,880	22,030	22,860	
Class II (35 mph or slower posted speed limit)						Freeway Adjustments					
Lanes	Median	B	C	D	E	Auxiliary Lanes Present in Both Directions + 1,800			Ramp Metering + 5%		
2	Undivided	*	660	1,330	1,410						
4	Divided	*	1,310	2,920	3,040						
6	Divided	*	2,090	4,500	4,590						
8	Divided	*	2,880	6,060	6,130						
Non-State Signalized Roadway Adjustments (Alter corresponding state volumes by the indicated percent.) Non-State Signalized Roadways - 10%											
Median & Turn Lane Adjustments						UNINTERRUPTED FLOW HIGHWAYS					
Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors		Lanes	Median	B	C	D	E
2	Divided	Yes	No	+5%		2	Undivided	770	1,530	2,170	2,990
2	Undivided	No	No	-20%		4	Divided	3,300	4,660	5,900	6,530
Multi	Undivided	Yes	No	-5%		6	Divided	4,950	6,990	8,840	9,790
Multi	Undivided	No	No	-25%		Uninterrupted Flow Highway Adjustments					
-	-	-	Yes	+ 5%		Lanes	Median	Exclusive left lanes	Adjustment factors		
One-Way Facility Adjustment Multiply the corresponding two-directional volumes in this table by 0.6						2	Divided	Yes	+5%		
						Multi	Undivided	Yes	-5%		
						Multi	Undivided	No	-25%		
BICYCLE MODE ² (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)						¹ Values shown are presented as peak hour two-way volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.					
Paved Shoulder/Bicycle						² Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.					
Lane Coverage	B	C	D	E		³ Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.					
0-49%	*	260	680	1,770		* Cannot be achieved using table input value defaults.					
50-84%	190	600	1,770	>1,770		** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.					
85-100%	830	1,770	>1,770	**							
PEDESTRIAN MODE ² (Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)						Source: Florida Department of Transportation Systems Planning Office www.dot.state.fl.us/planning/systems/sm/los/default.shtm					
Sidewalk Coverage	B	C	D	E							
0-49%	*	*	250	850							
50-84%	*	150	780	1,420							
85-100%	340	960	1,560	>1,770							
BUS MODE (Scheduled Fixed Route) ³ (Buses in peak hour in peak direction)											
Sidewalk Coverage	B	C	D	E							
0-84%	> 5	≥ 4	≥ 3	≥ 2							
85-100%	> 4	> 3	> 2	> 1							

APPENDIX B

Traffic Count Data Sheets

National Data & Surveying Services

City: Coalinga
Control: 1-Way Stop(EB)

Project ID: 17-08078-001
Date: 9/7/2017

Total

NS/EW Streets:	SR-33				SR-33				Granite Construction Dwy				Granite Construction Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1 NT	0 NR	0 NU	0 SL	1 ST	1 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	1	51	0	0	0	21	1	0	7	0	2	0	0	0	0	0	83
7:15 AM	1	25	0	0	0	40	1	0	3	0	0	0	0	0	0	0	70
7:30 AM	0	38	0	0	0	37	3	0	1	0	2	0	0	0	0	0	81
7:45 AM	1	49	0	0	0	30	4	0	3	0	2	0	0	0	0	0	89
8:00 AM	1	45	0	0	0	32	2	0	3	0	0	0	0	0	0	0	83
8:15 AM	2	40	0	0	0	33	9	0	5	0	1	0	0	0	0	0	90
8:30 AM	2	46	0	0	0	28	4	0	6	0	3	0	0	0	0	0	89
8:45 AM	1	38	0	0	0	23	0	0	5	0	2	0	0	0	0	0	69
TOTAL VOLUMES : APPROACH %'s :	NL 9 2.64%	NT 332 97.36%	NR 0 0.00%	NU 0 0.00%	SL 0 0.00%	ST 244 91.04%	SR 24 8.96%	SU 0 0.00%	EL 33 73.33%	ET 0 0.00%	ER 12 26.67%	EU 0 0.00%	WL 0	WT 0	WR 0	WU 0	TOTAL 654
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	6	180	0	0	0	123	19	0	17	0	6	0	0	0	0	0	351
PEAK HR FACTOR :	0.750	0.918	0.000	0.000	0.000	0.932	0.528	0.000	0.708	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.975
	0.930				0.845				0.639								
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1 NT	0 NR	0 NU	0 SL	1 ST	1 SR	0 SU	0 EL	1 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	2	29	0	2	1	65	0	0	0	0	1	0	0	0	0	0	99
4:15 PM	1	32	0	1	0	72	0	0	0	0	0	0	0	0	0	0	106
4:30 PM	0	41	0	0	0	64	0	0	0	0	0	0	0	0	0	0	105
4:45 PM	2	29	0	2	0	83	0	0	0	0	0	0	0	0	0	0	116
5:00 PM	0	46	0	0	0	86	0	0	0	0	0	0	0	0	0	0	132
5:15 PM	0	57	0	0	0	71	0	0	0	0	0	0	0	0	0	0	128
5:30 PM	0	30	0	0	0	52	0	0	0	0	0	0	0	0	0	0	82
5:45 PM	1	39	0	0	0	50	0	0	0	0	0	0	0	0	0	0	90
TOTAL VOLUMES : APPROACH %'s :	NL 6 1.91%	NT 303 96.50%	NR 0 0.00%	NU 5 1.59%	SL 0 0.00%	ST 543 100.00%	SR 0 0.00%	SU 0 0.00%	EL 0 0.00%	ET 0 0.00%	ER 1 100.00%	EU 0 0.00%	WL 0	WT 0	WR 0	WU 0	TOTAL 858
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	2	173	0	2	0	304	0	0	0	0	0	0	0	0	0	0	481
PEAK HR FACTOR :	0.250	0.759	0.000	0.250	0.000	0.884	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.911
	0.776				0.884												

National Data & Surveying Services

Intersection Turning Movement Count

Location: SR-33 & SR-198
City: Coalinga
Control: Signalized

Project ID: 17-08078-002
Date: 9/7/2017

Total

NS/EW Streets:	SR-33				SR-33				SR-198				SR-198				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU	
7:00 AM	1	33	13	0	0	18	0	0	0	1	0	0	14	1	0	0	81
7:15 AM	0	22	20	0	0	21	0	0	0	0	1	0	14	0	1	0	79
7:30 AM	0	18	9	0	0	21	0	0	0	0	2	0	11	1	0	0	62
7:45 AM	0	15	20	0	0	22	0	0	0	0	0	0	7	1	1	0	66
8:00 AM	0	15	11	0	0	30	0	0	0	0	0	0	9	0	0	0	65
8:15 AM	0	24	20	0	0	14	0	0	0	0	2	0	7	1	0	0	68
8:30 AM	1	20	17	0	0	10	0	0	0	2	0	0	8	1	0	0	59
8:45 AM	0	20	20	0	0	20	0	0	1	0	1	0	7	0	0	0	69
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	2	167	130	0	0	156	0	0	1	3	6	0	77	5	2	0	549
	0.67%	55.85%	43.48%	0.00%	0.00%	100.00%	0.00%	0.00%	10.00%	30.00%	60.00%	0.00%	91.67%	5.95%	2.38%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	1	88	62	0	0	82	0	0	0	1	3	0	46	3	2	0	288
PEAK HR FACTOR :	0.250	0.667	0.775	0.000	0.000	0.932	0.000	0.000	0.000	0.250	0.375	0.000	0.821	0.750	0.500	0.000	0.889
	0.803				0.932				0.500				0.850				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	1 EL	2 ET	0 ER	0 EU	1 WL	2 WT	0 WR	0 WU	
4:00 PM	0	14	14	0	0	31	0	0	1	1	2	0	19	0	0	0	82
4:15 PM	0	12	13	0	0	34	0	0	0	2	2	0	20	0	0	0	83
4:30 PM	0	23	22	0	0	35	0	0	0	1	0	0	16	1	0	0	98
4:45 PM	0	18	20	0	0	45	0	0	0	0	0	0	16	0	0	0	99
5:00 PM	0	22	19	0	0	49	0	0	0	0	0	0	20	0	0	0	110
5:15 PM	0	17	19	0	0	35	0	0	0	0	0	0	13	0	0	0	84
5:30 PM	0	21	8	0	0	30	0	0	0	0	0	0	18	0	0	0	77
5:45 PM	0	17	9	0	0	15	0	0	0	0	0	0	17	0	0	0	58
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	144	124	0	0	274	0	0	1	4	4	0	139	1	0	0	691
	0.00%	53.73%	46.27%	0.00%	0.00%	100.00%	0.00%	0.00%	11.11%	44.44%	44.44%	0.00%	99.29%	0.71%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	80	80	0	0	164	0	0	0	1	0	0	65	1	0	0	391
PEAK HR FACTOR :	0.000	0.870	0.909	0.000	0.000	0.837	0.000	0.000	0.000	0.250	0.000	0.000	0.813	0.250	0.000	0.000	0.889
	0.889				0.837				0.250				0.825				

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-5 SB Off Ramp & SR-198
City: Coalinga
Control: Signalized

Project ID: 17-08078-003
Date: 9/7/2017

Total

NS/EW Streets:	I-5 SB Off Ramp				I-5 SB Off Ramp				SR-198				SR-198				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	1 SL	0 ST	1 SR	0 SU	0 EL	1 ET	1 ER	0 EU	0 WL	1 WT	1 WR	0 WU	
7:00 AM	0	0	0	0	5	0	27	0	0	25	22	0	0	34	2	0	115
7:15 AM	0	0	0	0	15	0	18	0	0	32	20	0	0	37	0	0	122
7:30 AM	0	0	0	0	15	0	22	0	0	22	23	0	0	22	1	0	105
7:45 AM	0	0	0	0	12	0	30	0	0	42	22	0	0	33	2	0	141
8:00 AM	0	0	0	0	16	0	37	0	0	28	33	0	0	21	1	0	136
8:15 AM	0	0	0	0	11	0	20	0	0	36	37	0	0	31	0	0	135
8:30 AM	0	0	0	0	20	0	22	0	0	28	23	0	0	19	0	0	112
8:45 AM	0	0	0	0	18	0	20	0	0	43	19	0	0	20	0	0	120
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	112	0	196	0	0	256	199	0	0	217	6	0	986
PEAK HR :	07:45 AM - 08:45 AM				36.36%	0.00%	63.64%	0.00%	0.00%	56.26%	43.74%	0.00%	0.00%	97.31%	2.69%	0.00%	
PEAK HR VOL :	0	0	0	0	59	0	109	0	0	134	115	0	0	104	3	0	524
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.738	0.000	0.736	0.000	0.000	0.798	0.777	0.000	0.000	0.788	0.375	0.000	0.929
							0.792				0.853				0.764		

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	1 SL	0 ST	1 SR	0 SU	0 EL	1 ET	1 ER	0 EU	0 WL	1 WT	1 WR	0 WU	
4:00 PM	0	0	0	0	29	0	33	0	0	41	23	0	0	39	6	0	171
4:15 PM	0	0	0	0	23	0	42	0	0	29	32	0	0	42	4	0	172
4:30 PM	0	0	0	0	34	0	29	0	0	40	30	0	0	42	5	0	180
4:45 PM	0	0	0	0	27	0	32	0	0	34	38	0	0	32	5	0	168
5:00 PM	0	0	0	0	26	0	20	0	0	39	29	0	0	36	3	0	153
5:15 PM	0	0	0	0	38	0	26	0	0	36	16	0	0	30	2	0	148
5:30 PM	0	0	0	0	29	0	32	0	0	34	21	0	0	28	6	0	150
5:45 PM	0	0	0	0	31	0	30	0	0	22	35	0	0	29	4	0	151
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	237	0	244	0	0	275	224	0	0	278	35	0	1293
PEAK HR :	04:00 PM - 05:00 PM				49.27%	0.00%	50.73%	0.00%	0.00%	55.11%	44.89%	0.00%	0.00%	88.82%	11.18%	0.00%	
PEAK HR VOL :	0	0	0	0	113	0	136	0	0	144	123	0	0	155	20	0	691
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.831	0.000	0.810	0.000	0.000	0.878	0.809	0.000	0.000	0.923	0.833	0.000	0.960
							0.958				0.927				0.931		

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-5 NB Off Ramp & SR-198
City: Coalinga
Control: Signalized

Project ID: 17-08078-004
Date: 9/7/2017

Total

NS/EW Streets:	I-5 NB Off Ramp				I-5 NB Off Ramp				SR-198				SR-198				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	0 NT	1 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	1 ET	1 ER	0 EU	0 WL	1 WT	1 WR	0 WU	
7:00 AM	15	0	7	0	0	0	0	0	0	11	20	0	0	21	23	0	97
7:15 AM	11	0	7	0	0	0	0	0	0	30	17	0	0	26	20	0	111
7:30 AM	11	0	9	0	0	0	0	0	0	25	12	0	0	12	26	0	95
7:45 AM	21	0	13	0	0	0	0	0	0	38	15	0	0	13	16	0	116
8:00 AM	17	0	12	0	0	0	0	0	0	20	24	0	0	6	23	0	102
8:15 AM	18	0	22	0	0	0	0	0	0	24	22	0	0	13	31	0	130
8:30 AM	18	0	10	0	0	0	0	0	0	29	19	0	0	1	23	0	100
8:45 AM	12	0	13	0	0	0	0	0	0	40	21	0	0	7	28	0	121
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	123	0	93	0	0	0	0	0	0	217	150	0	0	99	190	0	872
	56.94%	0.00%	43.06%	0.00%					0.00%	59.13%	40.87%	0.00%	0.00%	34.26%	65.74%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	65	0	57	0	0	0	0	0	0	113	86	0	0	27	105	0	453
PEAK HR FACTOR :	0.903	0.000	0.648	0.000	0.000	0.000	0.000	0.000	0.000	0.706	0.896	0.000	0.000	0.519	0.847	0.000	0.871
			0.763								0.816				0.750		

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	0 NT	1 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	1 ET	1 ER	0 EU	0 WL	1 WT	1 WR	0 WU	
4:00 PM	18	0	18	0	0	0	0	0	0	45	25	0	0	27	40	0	173
4:15 PM	8	0	22	0	0	0	0	0	0	30	22	0	0	38	35	0	155
4:30 PM	13	0	18	0	0	0	0	0	0	62	16	0	0	33	25	0	167
4:45 PM	20	0	11	0	0	0	0	0	0	51	10	0	0	17	40	0	149
5:00 PM	16	0	14	0	0	0	0	0	0	48	17	0	0	24	33	0	152
5:15 PM	15	0	13	0	0	0	0	0	0	58	14	0	0	18	32	0	150
5:30 PM	17	0	10	0	0	0	0	0	0	50	13	0	0	17	34	0	141
5:45 PM	15	0	15	0	0	0	0	0	0	31	23	0	0	18	28	0	130
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	122	0	121	0	0	0	0	0	0	375	140	0	0	192	267	0	1217
	50.21%	0.00%	49.79%	0.00%					0.00%	72.82%	27.18%	0.00%	0.00%	41.83%	58.17%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	59	0	69	0	0	0	0	0	0	188	73	0	0	115	140	0	644
PEAK HR FACTOR :	0.738	0.000	0.784	0.000	0.000	0.000	0.000	0.000	0.000	0.758	0.730	0.000	0.000	0.757	0.875	0.000	0.931
			0.889								0.837				0.873		

CLASSIFICATION

Phelps Ave W/O S San Mateo Ave

Day: Thursday

Date: 9/19/2019

City: Coalinga

Project #: CA19_2072_001e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1
1:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:00	0	2	0	0	0	0	0	0	1	0	0	0	0	3
3:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4
4:00	0	15	3	0	0	0	0	0	0	0	0	0	0	18
5:00	0	58	30	0	0	0	0	0	0	0	0	0	0	88
6:00	0	37	17	1	2	2	0	0	2	0	0	0	0	61
7:00	0	40	7	0	0	0	1	0	1	0	0	0	0	49
8:00	0	21	8	2	0	2	1	0	0	0	3	0	0	37
9:00	0	15	12	1	1	4	1	0	4	0	0	0	0	38
10:00	0	16	13	1	1	1	0	0	0	0	0	0	0	32
11:00	0	22	15	0	3	1	1	1	2	0	0	0	0	45
12:00 PM	0	18	12	0	2	2	0	0	1	0	0	0	0	35
13:00	0	16	11	1	0	1	0	0	1	0	0	0	0	30
14:00	0	22	17	0	1	0	0	0	0	0	0	0	0	40
15:00	0	22	5	1	1	0	0	0	1	0	0	0	0	30
16:00	0	28	10	1	0	0	0	0	0	0	0	0	0	39
17:00	0	34	16	0	1	0	0	0	0	0	0	0	0	51
18:00	0	16	10	1	0	0	0	0	1	0	1	0	0	29
19:00	0	18	3	0	0	0	0	0	1	0	0	0	0	22
20:00	0	17	3	0	0	0	0	0	1	0	0	0	0	21
21:00	0	11	3	0	0	0	0	0	0	0	0	0	0	14
22:00	0	9	1	0	0	0	0	0	0	0	0	0	0	10
23:00	0	5	2	0	0	0	0	0	0	0	0	0	0	7
Totals		447	198	9	12	13	4	1	16		4	1		705
% of Totals		63%	28%	1%	2%	2%	1%	0%	2%		1%	0%		100%

AM Volumes	0	231	105	5	7	10	4	1	10	0	3	1	0	377
% AM		33%	15%	1%	1%	1%	1%	0%	1%		0%	0%		53%
AM Peak Hour		5:00	5:00	8:00	11:00	9:00	7:00	11:00	9:00		8:00			5:00
Volume		58	30	2	3	4	1	1	4		3	1		88
PM Volumes	0	216	93	4	5	3	0	0	6	0	1	0	0	328
% PM		31%	13%	1%	1%	0%			1%		0%			47%
PM Peak Hour		17:00	14:00	13:00	12:00	12:00			12:00		18:00			17:00
Volume		34	17	1	2	2			1		1			51
Directional Peak Periods			AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes			Volume		%	Volume		%	Volume		%	Volume		%
			86	↔	12%	65	↔	9%	90	↔	13%	464	↔	66%

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

CLASSIFICATION

Phelps Ave W/O S San Mateo Ave

Day: Thursday

Date: 9/19/2019

City: Coalinga

Project #: CA19_2072_001w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	3	1	0	0	0	0	0	1	0	0	0	0	5
1:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
2:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
3:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
4:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
5:00	0	15	9	0	1	0	0	0	1	0	0	0	0	26
6:00	0	31	9	0	0	2	0	0	1	0	0	0	0	43
7:00	0	24	6	1	0	1	0	0	2	0	0	0	0	34
8:00	0	11	6	2	1	2	0	0	1	0	3	0	0	26
9:00	0	13	8	0	1	2	0	0	0	0	0	0	0	24
10:00	0	15	12	1	1	1	0	0	4	0	0	0	0	34
11:00	0	16	12	1	2	1	0	0	2	0	0	0	0	34
12:00 PM	0	22	11	0	0	0	0	0	0	0	0	0	0	33
13:00	0	18	13	0	0	0	0	0	4	0	0	0	0	35
14:00	0	38	19	0	1	0	0	0	1	0	0	0	0	59
15:00	0	27	20	0	0	1	0	0	1	0	1	0	0	50
16:00	0	63	18	1	0	0	0	0	0	0	0	0	0	82
17:00	1	41	14	0	0	0	0	0	0	0	0	1	0	57
18:00	0	19	11	0	0	0	0	0	1	0	1	0	0	32
19:00	0	23	9	0	0	0	0	0	0	0	0	0	0	32
20:00	0	6	3	0	0	0	0	0	1	0	0	0	0	10
21:00	0	12	5	0	0	0	0	0	0	0	2	0	0	19
22:00	0	13	2	0	0	0	0	0	1	0	0	0	0	16
23:00	0	4	3	0	0	0	0	0	0	0	1	0	0	8
Totals	1	427	194	6	7	10			21		8	1		675
% of Totals	0%	63%	29%	1%	1%	1%			3%		1%	0%		100%

AM Volumes	0	141	66	5	6	9	0	0	12	0	3	0	0	242
% AM		21%	10%	1%	1%	1%			2%		0%			36%
AM Peak Hour		6:00	10:00	8:00	11:00	6:00			10:00		8:00			6:00
Volume		31	12	2	2	2			4		3			43
PM Volumes	1	286	128	1	1	1	0	0	9	0	5	1	0	433
% PM	0%	42%	19%	0%	0%	0%			1%		1%	0%		64%
PM Peak Hour	17:00	16:00	15:00	16:00	14:00	15:00			13:00		21:00	17:00		16:00
Volume	1	63	20	1	1	1			4		2	1		82
Directional Peak Periods All Classes			AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
			Volume		%	Volume		%	Volume		%	Volume		%
			60	↔	9%	68	↔	10%	139	↔	21%	408	↔	60%

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

CLASSIFICATION

Calavaras Ave N/O W Jayne Ave

Day: Thursday

Date: 9/19/2019

City: Coalinga

Project #: CA19_2072_002n

North Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	3	1	0	0	0	0	0	1	0	1	0	0	6
1:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:00	0	2	0	0	0	0	0	0	2	0	0	0	0	4
3:00	0	3	0	0	0	0	0	0	1	0	0	0	0	4
4:00	0	9	3	0	0	0	0	0	0	0	0	0	0	12
5:00	0	24	14	0	2	0	0	0	1	0	0	0	0	41
6:00	0	40	14	0	1	2	0	0	1	0	1	0	0	59
7:00	0	15	18	0	0	1	0	0	2	0	0	0	0	36
8:00	0	12	3	0	1	2	0	0	1	0	1	0	0	20
9:00	0	17	11	0	1	1	0	0	0	0	1	0	0	31
10:00	0	12	17	1	1	1	0	0	5	0	0	1	0	38
11:00	0	10	9	0	4	0	0	0	1	0	0	1	0	25
12:00 PM	0	17	13	0	0	0	0	0	0	0	0	0	0	30
13:00	0	13	15	0	0	0	0	0	4	0	1	0	0	33
14:00	0	30	21	0	0	0	0	0	1	0	0	0	0	52
15:00	0	19	19	0	0	0	0	0	1	0	1	2	0	42
16:00	0	56	15	0	0	0	0	0	0	0	0	0	0	71
17:00	1	26	7	0	0	0	0	0	1	0	0	2	0	37
18:00	0	14	10	0	0	0	0	0	1	0	1	0	0	26
19:00	0	13	5	0	0	0	0	0	0	0	0	0	0	18
20:00	0	3	1	0	0	0	0	0	1	0	0	0	0	5
21:00	0	10	4	0	0	0	0	0	0	0	2	0	0	16
22:00	0	11	2	0	0	0	0	0	2	0	0	0	0	15
23:00	0	3	3	0	0	0	0	0	0	0	1	1	0	8
Totals	1	363	205	1	10	7			26		10	7		630
% of Totals	0%	58%	33%	0%	2%	1%			4%		2%	1%		100%

AM Volumes	0	148	90	1	10	7	0	0	15	0	4	2	0	277
% AM		23%	14%	0%	2%	1%			2%		1%	0%		44%
AM Peak Hour		6:00	7:00	10:00	11:00	6:00			10:00			10:00		6:00
Volume		40	18	1	4	2			5		1	1		59
PM Volumes	1	215	115	0	0	0	0	0	11	0	6	5	0	353
% PM	0%	34%	18%						2%		1%	1%		56%
PM Peak Hour	17:00	16:00	14:00						13:00		21:00	15:00		16:00
Volume	1	56	21						4		2	2		71
Directional Peak Periods All Classes			AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
			Volume		%	Volume		%	Volume		%	Volume		%
			56	↔	9%	63	↔	10%	108	↔	17%	403	↔	64%

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

CLASSIFICATION

Calavaras Ave N/O W Jayne Ave

Day: Thursday

Date: 9/19/2019

City: Coalinga

Project #: CA19_2072_002s

South Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	1	0	0	0	0	0	0	1	0	0	0	0	2
3:00	0	1	1	0	0	0	0	0	2	0	0	0	0	4
4:00	0	11	5	0	0	0	0	0	1	0	0	0	0	17
5:00	0	42	17	0	0	0	0	0	0	0	0	0	0	59
6:00	0	31	19	1	0	2	0	0	2	0	0	0	0	55
7:00	0	33	10	0	0	0	1	0	1	0	0	0	0	45
8:00	0	19	7	0	0	0	1	0	2	0	5	1	0	35
9:00	0	15	7	0	1	2	1	0	5	0	1	0	0	32
10:00	0	13	14	0	0	0	0	0	0	0	0	1	0	28
11:00	0	12	15	0	4	1	1	1	5	0	0	0	0	39
12:00 PM	0	14	12	0	3	1	0	0	3	0	0	1	0	34
13:00	0	14	18	0	0	0	0	0	1	0	0	0	0	33
14:00	0	20	23	1	0	0	0	0	0	0	1	0	0	45
15:00	0	26	9	0	1	0	0	0	2	0	0	0	0	38
16:00	0	29	15	0	1	0	0	0	0	0	0	0	0	45
17:00	0	28	15	0	0	0	0	0	0	0	0	0	0	43
18:00	0	20	9	0	0	0	0	0	1	0	1	0	0	31
19:00	0	8	6	0	0	0	0	0	1	0	0	0	0	15
20:00	0	16	4	0	0	0	0	0	1	0	0	0	0	21
21:00	0	11	5	0	0	0	0	0	0	0	0	0	0	16
22:00	0	6	1	0	0	0	0	0	0	0	0	0	0	7
23:00	0	2	2	0	0	0	0	0	1	0	0	1	0	6
Totals		372	215	2	10	6	4	1	29		8	4		651
% of Totals		57%	33%	0%	2%	1%	1%	0%	4%		1%	1%		100%

AM Volumes	0	178	96	1	5	5	4	1	19	0	6	2	0	317
% AM		27%	15%	0%	1%	1%	1%	0%	3%		1%	0%		49%
AM Peak Hour		5:00	6:00	6:00	11:00	6:00	7:00	11:00	9:00		8:00	8:00		5:00
Volume		42	19	1	4	2	1	1	5		5	1		59
PM Volumes	0	194	119	1	5	1	0	0	10	0	2	2	0	334
% PM		30%	18%	0%	1%	0%			2%		0%	0%		51%
PM Peak Hour		16:00	14:00	14:00	12:00	12:00			12:00		14:00	12:00		14:00
Volume		29	23	1	3	1			3		1	1		45
Directional Peak Periods		AM 7-9				NOON 12-2				PM 4-6		Off Peak Volumes		
All Classes		Volume		%		Volume		%		Volume		%		
		80	↔	12%		67	↔	10%		88	↔	14%		

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

CLASSIFICATION

W Jayne Ave Bet.S El Dorado Ave & S Alpine Ave

Day: Thursday

City: Coalinga

Date: 9/19/2019

Project #: CA19_2072_003e

East Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	18	1	0	2	0	0	0	2	0	1	0	0	24
1:00	0	5	1	0	0	0	2	0	1	0	0	0	0	9
2:00	0	11	1	0	0	0	0	0	1	0	2	0	0	15
3:00	0	13	0	0	1	0	0	0	3	0	0	0	0	17
4:00	0	61	18	0	0	0	0	0	1	0	3	1	0	84
5:00	0	121	24	1	0	0	1	0	2	0	0	0	0	149
6:00	0	150	37	7	1	2	1	0	4	0	0	0	0	202
7:00	0	130	34	0	1	3	1	0	3	0	1	2	0	175
8:00	0	85	24	1	1	1	1	1	4	0	1	1	0	120
9:00	0	115	31	0	1	1	0	0	2	0	0	1	0	151
10:00	0	80	39	0	2	1	1	1	3	0	2	2	0	131
11:00	0	111	34	0	7	1	1	1	7	0	0	1	0	163
12:00 PM	0	120	49	1	6	2	1	0	6	0	0	3	0	188
13:00	1	148	45	1	5	2	0	0	6	0	1	1	0	210
14:00	0	235	84	1	2	1	0	2	5	0	1	0	0	331
15:00	0	285	80	5	3	1	1	0	7	0	0	2	0	384
16:00	0	341	102	2	6	3	0	0	5	0	0	0	0	459
17:00	0	217	53	0	4	0	0	1	2	0	1	0	0	278
18:00	0	115	20	2	0	0	0	0	5	0	1	0	0	143
19:00	0	127	26	0	1	1	0	0	4	0	1	0	0	160
20:00	0	87	13	0	1	1	0	0	3	0	0	0	0	105
21:00	0	94	20	0	0	0	0	0	1	0	2	1	0	118
22:00	0	113	6	0	0	0	0	0	0	0	2	0	0	121
23:00	0	82	8	0	0	0	0	0	1	0	0	0	0	91
Totals	1	2864	750	21	44	20	10	6	78		19	15		3828
% of Totals	0%	75%	20%	1%	1%	1%	0%	0%	2%		0%	0%		100%

AM Volumes	0	900	244	9	16	9	8	3	33	0	10	8	0	1240
% AM		24%	6%	0%	0%	0%	0%	0%	1%		0%	0%		32%
AM Peak Hour		6:00	10:00	6:00	11:00	7:00	1:00	8:00	11:00		4:00	7:00		6:00
Volume		150	39	7	7	3	2	1	7		3	2		202
PM Volumes	1	1964	506	12	28	11	2	3	45	0	9	7	0	2588
% PM	0%	51%	13%	0%	1%	0%	0%	0%	1%		0%	0%		68%
PM Peak Hour	13:00	16:00	16:00	15:00	12:00	16:00	12:00	14:00	15:00		21:00	12:00		16:00
Volume	1	341	102	5	6	3	1	2	7		2	3		459
Directional Peak Periods All Classes			AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
			Volume		%	Volume		%	Volume		%	Volume		%
			295	↔	8%	398	↔	10%	737	↔	19%	2398	↔	63%

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

CLASSIFICATION

W Jayne Ave Bet.S El Dorado Ave & S Alpine Ave

Day: Thursday

City: Coalinga

Date: 9/19/2019

Project #: CA19_2072_003w

West Bound

Time	# 1	# 2	# 3	# 4	# 5	# 6	# 7	# 8	# 9	# 10	# 11	# 12	# 13	Total
0:00 AM	0	22	2	0	0	0	0	0	2	0	0	0	0	26
1:00	0	6	6	0	0	0	0	0	1	0	0	0	0	13
2:00	0	12	0	0	0	0	0	0	2	0	0	0	0	14
3:00	0	41	7	0	0	0	0	0	4	0	0	0	0	52
4:00	0	45	10	0	0	0	0	0	0	0	0	0	0	55
5:00	1	247	64	0	2	0	0	0	3	0	0	0	0	317
6:00	0	335	70	0	6	3	0	2	4	0	0	5	0	425
7:00	0	324	70	5	2	2	0	1	8	0	3	0	0	415
8:00	0	157	38	0	6	5	0	0	7	0	2	0	0	215
9:00	0	100	29	0	4	4	0	0	1	0	2	3	0	143
10:00	0	76	33	2	5	1	0	0	9	0	0	2	0	128
11:00	0	69	30	0	9	1	0	0	5	0	1	1	0	116
12:00 PM	0	115	52	0	2	0	0	0	6	0	0	2	0	177
13:00	0	176	54	0	5	0	0	2	8	0	1	1	0	247
14:00	0	163	40	0	5	1	0	2	5	0	0	0	0	216
15:00	0	120	33	1	1	1	0	1	6	0	2	5	0	170
16:00	0	175	51	8	0	0	0	0	5	0	0	0	0	239
17:00	0	164	43	1	2	0	0	0	1	0	2	0	0	213
18:00	0	130	29	0	0	1	0	0	5	0	3	0	0	168
19:00	0	86	24	1	0	0	0	0	2	0	3	0	0	116
20:00	0	90	24	0	0	0	0	0	7	0	2	2	0	125
21:00	0	102	18	0	1	0	1	0	1	0	2	2	0	127
22:00	0	83	9	0	0	0	0	0	2	0	1	1	0	96
23:00	0	25	7	0	0	0	0	0	1	0	1	2	0	36
Totals	1	2863	743	18	50	19	1	8	95		25	26		3849
% of Totals	0%	74%	19%	0%	1%	0%	0%	0%	2%		1%	1%		100%

AM Volumes	1	1434	359	7	34	16	0	3	46	0	8	11	0	1919
% AM	0%	37%	9%	0%	1%	0%		0%	1%		0%	0%		50%
AM Peak Hour	5:00	6:00	6:00	7:00	11:00	8:00		6:00	10:00		7:00	6:00		6:00
Volume	1	335	70	5	9	5		2	9		3	5		425
PM Volumes	0	1429	384	11	16	3	1	5	49	0	17	15	0	1930
% PM		37%	10%	0%	0%	0%	0%	0%	1%		0%	0%		50%
PM Peak Hour		13:00	13:00	16:00	13:00	14:00	21:00	13:00	13:00		18:00	15:00		13:00
Volume		176	54	8	5	1	1	2	8		3	5		247
Directional Peak Periods			AM 7-9			NOON 12-2			PM 4-6			Off Peak Volumes		
All Classes			Volume		%	Volume		%	Volume		%	Volume		%
			630	↔	16%	424	↔	11%	452	↔	12%	2343	↔	61%

Classification Definitions

1 Motorcycles	4 Buses	7 >=4-Axle Single Units	10 >=6-Axle Single Trailers	13 >=7-Axle Multi-Trailers
2 Passenger Cars	5 2-Axle, 6-Tire Single Units	8 <=4-Axle Single Trailers	11 <=5-Axle Multi-Trailers	
3 2-Axle, 4-Tire Single Units	6 3-Axle Single Units	9 5-Axle Single Trailers	12 6-Axle Multi-Trailers	

APPENDIX C

SYNCHRO 9 Worksheets

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	17	6	6	180	123	19
Future Vol, veh/h	17	6	6	180	123	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	425	-	-	350
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	64	64	93	93	85	85
Heavy Vehicles, %	3	3	3	18	18	3
Mvmt Flow	27	9	6	194	145	22
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	351	145	145	0	-	0
Stage 1	145	-	-	-	-	-
Stage 2	206	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	644	900	1431	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	641	900	1431	-	-	-
Mov Cap-2 Maneuver	641	-	-	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	823	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.5	0.2		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1431	-	693	-	-	
HCM Lane V/C Ratio	0.005	-	0.052	-	-	
HCM Control Delay (s)	7.5	-	10.5	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	3	46	3	2	1	88	62	0	82	0
Future Vol, veh/h	0	1	3	46	3	2	1	88	62	0	82	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	85	85	85	80	80	80	93	93	93
Heavy Vehicles, %	3	3	3	22	3	3	3	18	22	3	18	3
Mvmt Flow	0	2	6	54	4	2	1	110	78	0	88	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	241	278	88	243	239	149	88	0	0	188	0	0
Stage 1	88	88	-	151	151	-	-	-	-	-	-	-
Stage 2	153	190	-	92	88	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.32	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.698	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	711	628	968	671	660	895	1501	-	-	1380	-	-
Stage 1	917	820	-	806	770	-	-	-	-	-	-	-
Stage 2	847	741	-	868	820	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	706	627	968	665	659	895	1501	-	-	1380	-	-
Mov Cap-2 Maneuver	706	627	-	665	659	-	-	-	-	-	-	-
Stage 1	916	820	-	805	769	-	-	-	-	-	-	-
Stage 2	840	740	-	861	820	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.3			10.8			0			0		
HCM LOS	A			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR			
Capacity (veh/h)	1501	-	-	852	665	895	1380	-	-			
HCM Lane V/C Ratio	0.001	-	-	0.009	0.087	0.003	-	-	-			
HCM Control Delay (s)	7.4	0	-	9.3	10.9	9	0	-	-			
HCM Lane LOS	A	A	-	A	B	A	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	0	-	-			

HCM 2010 Signalized Intersection Summary

3: SR 198 & I-5 SB Off Ramp

11/1/2017

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	134	104	0	59	109		
Future Volume (veh/h)	0	134	104	0	59	109		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1557	1557	0	1557	1557		
Adj Flow Rate, veh/h	0	158	137	0	75	0		
Adj No. of Lanes	0	1	1	0	1	1		
Peak Hour Factor	0.85	0.85	0.76	0.76	0.79	0.79		
Percent Heavy Veh, %	0	22	22	0	22	22		
Cap, veh/h	0	245	245	0	1013	904		
Arrive On Green	0.00	0.16	0.16	0.00	0.68	0.00		
Sat Flow, veh/h	0	1557	1557	0	1483	1324		
Grp Volume(v), veh/h	0	158	137	0	75	0		
Grp Sat Flow(s),veh/h/ln	0	1557	1557	0	1483	1324		
Q Serve(g_s), s	0.0	5.4	4.6	0.0	1.0	0.0		
Cycle Q Clear(g_c), s	0.0	5.4	4.6	0.0	1.0	0.0		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	245	245	0	1013	904		
V/C Ratio(X)	0.00	0.64	0.56	0.00	0.07	0.00		
Avail Cap(c_a), veh/h	0	1174	1174	0	1013	904		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	22.3	21.9	0.0	3.0	0.0		
Incr Delay (d2), s/veh	0.0	2.8	2.0	0.0	0.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	2.5	2.1	0.0	0.4	0.0		
LnGrp Delay(d),s/veh	0.0	25.1	23.9	0.0	3.1	0.0		
LnGrp LOS		C	C		A			
Approach Vol, veh/h		158	137		75			
Approach Delay, s/veh		25.1	23.9		3.1			
Approach LOS		C	C		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				13.4		43.0		13.4
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				42.5		38.5		42.5
Max Q Clear Time (g_c+I1), s				7.4		3.0		6.6
Green Ext Time (p_c), s				1.6		0.2		1.6
Intersection Summary								
HCM 2010 Ctrl Delay			20.2					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary

4: I-5 NB Off Ramp & SR 198

11/1/2017

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	113	0	0	27	65	57		
Future Volume (veh/h)	113	0	0	27	65	57		
Number	4	14	3	8	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1557	0	0	1557	1557	1557		
Adj Flow Rate, veh/h	138	0	0	36	86	0		
Adj No. of Lanes	1	0	0	1	1	1		
Peak Hour Factor	0.82	0.82	0.75	0.75	0.76	0.76		
Percent Heavy Veh, %	22	0	0	22	22	22		
Cap, veh/h	282	0	0	282	153	137		
Arrive On Green	0.18	0.00	0.00	0.18	0.10	0.00		
Sat Flow, veh/h	1557	0	0	1557	1483	1324		
Grp Volume(v), veh/h	138	0	0	36	86	0		
Grp Sat Flow(s),veh/h/ln	1557	0	0	1557	1483	1324		
Q Serve(g_s), s	1.0	0.0	0.0	0.2	0.7	0.0		
Cycle Q Clear(g_c), s	1.0	0.0	0.0	0.2	0.7	0.0		
Prop In Lane		0.00	0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	282	0	0	282	153	137		
V/C Ratio(X)	0.49	0.00	0.00	0.13	0.56	0.00		
Avail Cap(c_a), veh/h	6626	0	0	6626	3244	2895		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	4.6	0.0	0.0	4.3	5.4	0.0		
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.2	3.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	0.1	0.4	0.0		
LnGrp Delay(d),s/veh	5.9	0.0	0.0	4.5	8.6	0.0		
LnGrp LOS	A			A	A			
Approach Vol, veh/h	138			36	86			
Approach Delay, s/veh	5.9			4.5	8.6			
Approach LOS	A			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				6.8		5.8		6.8
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				53.5		27.5		53.5
Max Q Clear Time (g_c+I1), s				3.0		2.7		2.2
Green Ext Time (p_c), s				0.9		0.2		0.9
Intersection Summary								
HCM 2010 Ctrl Delay			6.6					
HCM 2010 LOS			A					

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	0	0	2	173	304	0
Future Vol, veh/h	0	0	2	173	304	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	425	-	-	350
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	78	78	88	88
Heavy Vehicles, %	3	3	3	18	18	3
Mvmt Flow	0	0	3	222	345	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	572	345	345	0	-	0
Stage 1	345	-	-	-	-	-
Stage 2	227	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	480	696	1208	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	479	696	1208	-	-	-
Mov Cap-2 Maneuver	479	-	-	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	806	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1208	-	-	-	-	
HCM Lane V/C Ratio	0.002	-	-	-	-	
HCM Control Delay (s)	8	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	0	65	1	0	0	80	80	0	164	0
Future Vol, veh/h	0	1	0	65	1	0	0	80	80	0	164	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	83	83	83	89	89	89	84	84	84
Heavy Vehicles, %	3	3	3	22	3	3	3	18	22	3	18	3
Mvmt Flow	0	4	0	78	1	0	0	90	90	0	195	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	330	375	195	332	330	135	195	0	0	180	0	0
Stage 1	195	195	-	135	135	-	-	-	-	-	-	-
Stage 2	135	180	-	197	195	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.32	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.698	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	621	554	844	585	588	911	1372	-	-	1389	-	-
Stage 1	804	737	-	823	783	-	-	-	-	-	-	-
Stage 2	866	749	-	761	737	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	620	554	844	582	588	911	1372	-	-	1389	-	-
Mov Cap-2 Maneuver	620	554	-	582	588	-	-	-	-	-	-	-
Stage 1	804	737	-	823	783	-	-	-	-	-	-	-
Stage 2	865	749	-	757	737	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	11.5			12.2			0			0		
HCM LOS	B			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR			
Capacity (veh/h)	1372	-	-	554	582	-	1389	-	-			
HCM Lane V/C Ratio	-	-	-	0.007	0.137	-	-	-	-			
HCM Control Delay (s)	0	-	-	11.5	12.2	0	0	-	-			
HCM Lane LOS	A	-	-	B	B	A	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0	0.5	-	0	-	-			

HCM 2010 Signalized Intersection Summary

3: SR 198 & I-5 SB Off Ramp

11/1/2017

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	144	155	0	113	136		
Future Volume (veh/h)	0	144	155	0	113	136		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1557	1557	0	1557	1557		
Adj Flow Rate, veh/h	0	155	167	0	118	0		
Adj No. of Lanes	0	1	1	0	1	1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.96	0.96		
Percent Heavy Veh, %	0	22	22	0	22	22		
Cap, veh/h	0	257	257	0	1004	896		
Arrive On Green	0.00	0.17	0.17	0.00	0.68	0.00		
Sat Flow, veh/h	0	1557	1557	0	1483	1324		
Grp Volume(v), veh/h	0	155	167	0	118	0		
Grp Sat Flow(s),veh/h/ln	0	1557	1557	0	1483	1324		
Q Serve(g_s), s	0.0	5.3	5.7	0.0	1.6	0.0		
Cycle Q Clear(g_c), s	0.0	5.3	5.7	0.0	1.6	0.0		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	257	257	0	1004	896		
V/C Ratio(X)	0.00	0.60	0.65	0.00	0.12	0.00		
Avail Cap(c_a), veh/h	0	1163	1163	0	1004	896		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	22.0	22.2	0.0	3.2	0.0		
Incr Delay (d2), s/veh	0.0	2.3	2.7	0.0	0.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	2.4	2.7	0.0	0.7	0.0		
LnGrp Delay(d),s/veh	0.0	24.3	25.0	0.0	3.5	0.0		
LnGrp LOS		C	C		A			
Approach Vol, veh/h		155	167		118			
Approach Delay, s/veh		24.3	25.0		3.5			
Approach LOS		C	C		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				13.9		43.0		13.9
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				42.5		38.5		42.5
Max Q Clear Time (g_c+I1), s				7.3		3.6		7.7
Green Ext Time (p_c), s				1.8		0.3		1.8
Intersection Summary								
HCM 2010 Ctrl Delay			19.0					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

4: I-5 NB Off Ramp & SR 198

11/1/2017

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑			↑	↵	↗		
Traffic Volume (veh/h)	188	0	0	115	59	69		
Future Volume (veh/h)	188	0	0	115	59	69		
Number	4	14	3	8	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1557	0	0	1557	1557	1557		
Adj Flow Rate, veh/h	224	0	0	132	66	0		
Adj No. of Lanes	1	0	0	1	1	1		
Peak Hour Factor	0.84	0.84	0.87	0.87	0.89	0.89		
Percent Heavy Veh, %	22	0	0	22	22	22		
Cap, veh/h	468	0	0	468	119	107		
Arrive On Green	0.30	0.00	0.00	0.30	0.08	0.00		
Sat Flow, veh/h	1557	0	0	1557	1483	1324		
Grp Volume(v), veh/h	224	0	0	132	66	0		
Grp Sat Flow(s),veh/h/ln	1557	0	0	1557	1483	1324		
Q Serve(g_s), s	1.7	0.0	0.0	0.9	0.6	0.0		
Cycle Q Clear(g_c), s	1.7	0.0	0.0	0.9	0.6	0.0		
Prop In Lane		0.00	0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	468	0	0	468	119	107		
V/C Ratio(X)	0.48	0.00	0.00	0.28	0.55	0.00		
Avail Cap(c_a), veh/h	5733	0	0	5733	2807	2505		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	4.2	0.0	0.0	3.9	6.4	0.0		
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.3	4.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.4	0.4	0.0		
LnGrp Delay(d),s/veh	4.9	0.0	0.0	4.2	10.4	0.0		
LnGrp LOS	A			A	B			
Approach Vol, veh/h	224			132	66			
Approach Delay, s/veh	4.9			4.2	10.4			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				8.9		5.7		8.9
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				53.5		27.5		53.5
Max Q Clear Time (g_c+I1), s				3.7		2.6		2.9
Green Ext Time (p_c), s				2.0		0.1		2.0
Intersection Summary								
HCM 2010 Ctrl Delay			5.6					
HCM 2010 LOS			A					

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	0	0	0	180	123	0
Future Vol, veh/h	0	0	0	180	123	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	425	-	-	350
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	64	64	93	93	85	85
Heavy Vehicles, %	3	3	3	18	18	3
Mvmt Flow	0	0	0	194	145	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	339	145	145	0	-	0
Stage 1	145	-	-	-	-	-
Stage 2	194	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	655	900	1431	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	655	900	1431	-	-	-
Mov Cap-2 Maneuver	655	-	-	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	836	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1431	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	3	44	3	2	1	73	60	0	65	0
Future Vol, veh/h	0	1	3	44	3	2	1	73	60	0	65	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	85	85	85	80	80	80	93	93	93
Heavy Vehicles, %	3	3	3	22	3	3	3	18	22	3	18	3
Mvmt Flow	0	2	6	52	4	2	1	91	75	0	70	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	203	239	70	205	201	129	70	0	0	166	0	0
Stage 1	70	70	-	131	131	-	-	-	-	-	-	-
Stage 2	133	169	-	74	70	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.32	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.698	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	753	660	990	712	693	918	1524	-	-	1406	-	-
Stage 1	937	835	-	827	786	-	-	-	-	-	-	-
Stage 2	868	757	-	888	835	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	748	659	990	706	692	918	1524	-	-	1406	-	-
Mov Cap-2 Maneuver	748	659	-	706	692	-	-	-	-	-	-	-
Stage 1	936	835	-	826	785	-	-	-	-	-	-	-
Stage 2	861	756	-	881	835	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.1			10.4			0.1			0		
HCM LOS	A			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR			
Capacity (veh/h)	1524	-	-	880	705	918	1406	-	-			
HCM Lane V/C Ratio	0.001	-	-	0.009	0.078	0.003	-	-	-			
HCM Control Delay (s)	7.4	0	-	9.1	10.5	8.9	0	-	-			
HCM Lane LOS	A	A	-	A	B	A	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	0	-	-			

HCM 2010 Signalized Intersection Summary

3: SR 198 & I-5 SB Off Ramp

11/1/2017

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	132	102	0	59	109		
Future Volume (veh/h)	0	132	102	0	59	109		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1557	1557	0	1557	1557		
Adj Flow Rate, veh/h	0	155	134	0	75	0		
Adj No. of Lanes	0	1	1	0	1	1		
Peak Hour Factor	0.85	0.85	0.76	0.76	0.79	0.79		
Percent Heavy Veh, %	0	22	22	0	22	22		
Cap, veh/h	0	241	241	0	1016	907		
Arrive On Green	0.00	0.15	0.15	0.00	0.68	0.00		
Sat Flow, veh/h	0	1557	1557	0	1483	1324		
Grp Volume(v), veh/h	0	155	134	0	75	0		
Grp Sat Flow(s),veh/h/ln	0	1557	1557	0	1483	1324		
Q Serve(g_s), s	0.0	5.3	4.5	0.0	0.9	0.0		
Cycle Q Clear(g_c), s	0.0	5.3	4.5	0.0	0.9	0.0		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	241	241	0	1016	907		
V/C Ratio(X)	0.00	0.64	0.56	0.00	0.07	0.00		
Avail Cap(c_a), veh/h	0	1177	1177	0	1016	907		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	22.3	22.0	0.0	2.9	0.0		
Incr Delay (d2), s/veh	0.0	2.8	2.0	0.0	0.1	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	2.4	2.0	0.0	0.4	0.0		
LnGrp Delay(d),s/veh	0.0	25.1	23.9	0.0	3.1	0.0		
LnGrp LOS		C	C		A			
Approach Vol, veh/h		155	134		75			
Approach Delay, s/veh		25.1	23.9		3.1			
Approach LOS		C	C		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				13.2		43.0		13.2
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				42.5		38.5		42.5
Max Q Clear Time (g_c+I1), s				7.3		2.9		6.5
Green Ext Time (p_c), s				1.6		0.2		1.6
Intersection Summary								
HCM 2010 Ctrl Delay			20.2					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary

4: I-5 NB Off Ramp & SR 198

11/1/2017

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	111	0	0	25	65	57		
Future Volume (veh/h)	111	0	0	25	65	57		
Number	4	14	3	8	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1557	0	0	1557	1557	1557		
Adj Flow Rate, veh/h	135	0	0	33	86	0		
Adj No. of Lanes	1	0	0	1	1	1		
Peak Hour Factor	0.82	0.82	0.75	0.75	0.76	0.76		
Percent Heavy Veh, %	22	0	0	22	22	22		
Cap, veh/h	275	0	0	275	153	137		
Arrive On Green	0.18	0.00	0.00	0.18	0.10	0.00		
Sat Flow, veh/h	1557	0	0	1557	1483	1324		
Grp Volume(v), veh/h	135	0	0	33	86	0		
Grp Sat Flow(s),veh/h/ln	1557	0	0	1557	1483	1324		
Q Serve(g_s), s	1.0	0.0	0.0	0.2	0.7	0.0		
Cycle Q Clear(g_c), s	1.0	0.0	0.0	0.2	0.7	0.0		
Prop In Lane		0.00	0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	275	0	0	275	153	137		
V/C Ratio(X)	0.49	0.00	0.00	0.12	0.56	0.00		
Avail Cap(c_a), veh/h	6665	0	0	6665	3263	2912		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	4.6	0.0	0.0	4.3	5.3	0.0		
Incr Delay (d2), s/veh	1.4	0.0	0.0	0.2	3.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.5	0.0	0.0	0.1	0.4	0.0		
LnGrp Delay(d),s/veh	6.0	0.0	0.0	4.5	8.5	0.0		
LnGrp LOS	A			A	A			
Approach Vol, veh/h	135			33	86			
Approach Delay, s/veh	6.0			4.5	8.5			
Approach LOS	A			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				6.7		5.8		6.7
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				53.5		27.5		53.5
Max Q Clear Time (g_c+I1), s				3.0		2.7		2.2
Green Ext Time (p_c), s				0.9		0.2		0.9
Intersection Summary								
HCM 2010 Ctrl Delay			6.7					
HCM 2010 LOS			A					

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	0	0	2	173	304	0
Future Vol, veh/h	0	0	2	173	304	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	425	-	-	350
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	78	78	88	88
Heavy Vehicles, %	3	3	3	18	18	3
Mvmt Flow	0	0	3	222	345	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	572	345	345	0	-	0
Stage 1	345	-	-	-	-	-
Stage 2	227	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	480	696	1208	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	808	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	479	696	1208	-	-	-
Mov Cap-2 Maneuver	479	-	-	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	806	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1208	-	-	-	-	
HCM Lane V/C Ratio	0.002	-	-	-	-	
HCM Control Delay (s)	8	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	0	65	1	0	0	80	80	0	164	0
Future Vol, veh/h	0	1	0	65	1	0	0	80	80	0	164	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	83	83	83	89	89	89	84	84	84
Heavy Vehicles, %	3	3	3	22	3	3	3	18	22	3	18	3
Mvmt Flow	0	4	0	78	1	0	0	90	90	0	195	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	330	375	195	332	330	135	195	0	0	180	0	0
Stage 1	195	195	-	135	135	-	-	-	-	-	-	-
Stage 2	135	180	-	197	195	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.32	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.698	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	621	554	844	585	588	911	1372	-	-	1389	-	-
Stage 1	804	737	-	823	783	-	-	-	-	-	-	-
Stage 2	866	749	-	761	737	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	620	554	844	582	588	911	1372	-	-	1389	-	-
Mov Cap-2 Maneuver	620	554	-	582	588	-	-	-	-	-	-	-
Stage 1	804	737	-	823	783	-	-	-	-	-	-	-
Stage 2	865	749	-	757	737	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	11.5			12.2			0			0		
HCM LOS	B			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1372	-	-	554 582	-	1389	-	-				
HCM Lane V/C Ratio	-	-	-	0.007 0.137	-	-	-	-				
HCM Control Delay (s)	0	-	-	11.5 12.2	0	0	-	-				
HCM Lane LOS	A	-	-	B B	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0 0.5	-	0	-	-				

HCM 2010 Signalized Intersection Summary

3: SR 198 & I-5 SB Off Ramp

11/1/2017

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	144	155	0	113	136		
Future Volume (veh/h)	0	144	155	0	113	136		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1557	1557	0	1557	1557		
Adj Flow Rate, veh/h	0	155	167	0	118	0		
Adj No. of Lanes	0	1	1	0	1	1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.96	0.96		
Percent Heavy Veh, %	0	22	22	0	22	22		
Cap, veh/h	0	257	257	0	1004	896		
Arrive On Green	0.00	0.17	0.17	0.00	0.68	0.00		
Sat Flow, veh/h	0	1557	1557	0	1483	1324		
Grp Volume(v), veh/h	0	155	167	0	118	0		
Grp Sat Flow(s),veh/h/ln	0	1557	1557	0	1483	1324		
Q Serve(g_s), s	0.0	5.3	5.7	0.0	1.6	0.0		
Cycle Q Clear(g_c), s	0.0	5.3	5.7	0.0	1.6	0.0		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	257	257	0	1004	896		
V/C Ratio(X)	0.00	0.60	0.65	0.00	0.12	0.00		
Avail Cap(c_a), veh/h	0	1163	1163	0	1004	896		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	22.0	22.2	0.0	3.2	0.0		
Incr Delay (d2), s/veh	0.0	2.3	2.7	0.0	0.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	2.4	2.7	0.0	0.7	0.0		
LnGrp Delay(d),s/veh	0.0	24.3	25.0	0.0	3.5	0.0		
LnGrp LOS		C	C		A			
Approach Vol, veh/h		155	167		118			
Approach Delay, s/veh		24.3	25.0		3.5			
Approach LOS		C	C		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				13.9		43.0		13.9
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				42.5		38.5		42.5
Max Q Clear Time (g_c+I1), s				7.3		3.6		7.7
Green Ext Time (p_c), s				1.8		0.3		1.8
Intersection Summary								
HCM 2010 Ctrl Delay			19.0					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

4: I-5 NB Off Ramp & SR 198

11/1/2017

									
Movement	EBT	EBR	WBL	WBT	NBL	NBR			
Lane Configurations	↑			↑	↵	↶			
Traffic Volume (veh/h)	188	0	0	115	59	69			
Future Volume (veh/h)	188	0	0	115	59	69			
Number	4	14	3	8	1	16			
Initial Q (Qb), veh	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1557	0	0	1557	1557	1557			
Adj Flow Rate, veh/h	224	0	0	132	66	0			
Adj No. of Lanes	1	0	0	1	1	1			
Peak Hour Factor	0.84	0.84	0.87	0.87	0.89	0.89			
Percent Heavy Veh, %	22	0	0	22	22	22			
Cap, veh/h	468	0	0	468	119	107			
Arrive On Green	0.30	0.00	0.00	0.30	0.08	0.00			
Sat Flow, veh/h	1557	0	0	1557	1483	1324			
Grp Volume(v), veh/h	224	0	0	132	66	0			
Grp Sat Flow(s),veh/h/ln	1557	0	0	1557	1483	1324			
Q Serve(g_s), s	1.7	0.0	0.0	0.9	0.6	0.0			
Cycle Q Clear(g_c), s	1.7	0.0	0.0	0.9	0.6	0.0			
Prop In Lane		0.00	0.00		1.00	1.00			
Lane Grp Cap(c), veh/h	468	0	0	468	119	107			
V/C Ratio(X)	0.48	0.00	0.00	0.28	0.55	0.00			
Avail Cap(c_a), veh/h	5733	0	0	5733	2807	2505			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	4.2	0.0	0.0	3.9	6.4	0.0			
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.3	4.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.4	0.4	0.0			
LnGrp Delay(d),s/veh	4.9	0.0	0.0	4.2	10.4	0.0			
LnGrp LOS	A			A	B				
Approach Vol, veh/h	224			132	66				
Approach Delay, s/veh	4.9			4.2	10.4				
Approach LOS	A			A	B				
Timer	1	2	3	4	5	6	7	8	
Assigned Phs				4		6		8	
Phs Duration (G+Y+Rc), s				8.9		5.7		8.9	
Change Period (Y+Rc), s				4.5		4.5		4.5	
Max Green Setting (Gmax), s				53.5		27.5		53.5	
Max Q Clear Time (g_c+I1), s				3.7		2.6		2.9	
Green Ext Time (p_c), s				2.0		0.1		2.0	
Intersection Summary									
HCM 2010 Ctrl Delay			5.6						
HCM 2010 LOS			A						

Intersection						
Int Delay, s/veh	4.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	109	42	45	180	123	114
Future Vol, veh/h	109	42	45	180	123	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	425	-	-	350
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	64	64	93	93	85	85
Heavy Vehicles, %	3	3	3	18	18	3
Mvmt Flow	170	66	48	194	145	134
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	435	145	145	0	-	0
Stage 1	145	-	-	-	-	-
Stage 2	290	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	576	900	1431	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	757	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	557	900	1431	-	-	-
Mov Cap-2 Maneuver	557	-	-	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	732	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.3	1.5		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1431	-	623	-	-	
HCM Lane V/C Ratio	0.034	-	0.379	-	-	
HCM Control Delay (s)	7.6	-	14.3	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	1.8	-	-	

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	3	121	3	2	1	108	134	0	102	0
Future Vol, veh/h	0	1	3	121	3	2	1	108	134	0	102	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	85	85	85	80	80	80	93	93	93
Heavy Vehicles, %	3	3	3	22	3	3	3	18	22	3	18	3
Mvmt Flow	0	2	6	142	4	2	1	135	168	0	110	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	333	415	110	335	331	219	110	0	0	303	0	0
Stage 1	110	110	-	221	221	-	-	-	-	-	-	-
Stage 2	223	305	-	114	110	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.32	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.698	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	619	526	941	582	587	818	1474	-	-	1252	-	-
Stage 1	893	802	-	738	719	-	-	-	-	-	-	-
Stage 2	777	660	-	844	802	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	614	525	941	576	586	818	1474	-	-	1252	-	-
Mov Cap-2 Maneuver	614	525	-	576	586	-	-	-	-	-	-	-
Stage 1	892	802	-	737	718	-	-	-	-	-	-	-
Stage 2	770	659	-	837	802	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.6			13.3			0			0		
HCM LOS	A			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR			
Capacity (veh/h)	1474	-	-	785	576	818	1252	-	-			
HCM Lane V/C Ratio	0.001	-	-	0.01	0.253	0.003	-	-	-			
HCM Control Delay (s)	7.4	0	-	9.6	13.4	9.4	0	-	-			
HCM Lane LOS	A	A	-	A	B	A	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0	1	0	0	-	-			

HCM 2010 Signalized Intersection Summary

3: SR 198 & I-5 SB Off Ramp

11/1/2017

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	206	179	0	59	109		
Future Volume (veh/h)	0	206	179	0	59	109		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1557	1557	0	1557	1557		
Adj Flow Rate, veh/h	0	242	236	0	75	0		
Adj No. of Lanes	0	1	1	0	1	1		
Peak Hour Factor	0.85	0.85	0.76	0.76	0.79	0.79		
Percent Heavy Veh, %	0	22	22	0	22	22		
Cap, veh/h	0	343	343	0	937	836		
Arrive On Green	0.00	0.22	0.22	0.00	0.63	0.00		
Sat Flow, veh/h	0	1557	1557	0	1483	1324		
Grp Volume(v), veh/h	0	242	236	0	75	0		
Grp Sat Flow(s),veh/h/ln	0	1557	1557	0	1483	1324		
Q Serve(g_s), s	0.0	8.7	8.5	0.0	1.2	0.0		
Cycle Q Clear(g_c), s	0.0	8.7	8.5	0.0	1.2	0.0		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	343	343	0	937	836		
V/C Ratio(X)	0.00	0.70	0.69	0.00	0.08	0.00		
Avail Cap(c_a), veh/h	0	1086	1086	0	937	836		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	21.9	21.8	0.0	4.4	0.0		
Incr Delay (d2), s/veh	0.0	2.6	2.4	0.0	0.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	4.0	3.8	0.0	0.5	0.0		
LnGrp Delay(d),s/veh	0.0	24.6	24.3	0.0	4.5	0.0		
LnGrp LOS		C	C		A			
Approach Vol, veh/h		242	236		75			
Approach Delay, s/veh		24.6	24.3		4.5			
Approach LOS		C	C		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				17.9		43.0		17.9
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				42.5		38.5		42.5
Max Q Clear Time (g_c+I1), s				10.7		3.2		10.5
Green Ext Time (p_c), s				2.7		0.2		2.7
Intersection Summary								
HCM 2010 Ctrl Delay			21.7					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary

4: I-5 NB Off Ramp & SR 198

11/1/2017

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	185	0	0	102	65	57		
Future Volume (veh/h)	185	0	0	102	65	57		
Number	4	14	3	8	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1557	0	0	1557	1557	1557		
Adj Flow Rate, veh/h	226	0	0	136	86	0		
Adj No. of Lanes	1	0	0	1	1	1		
Peak Hour Factor	0.82	0.82	0.75	0.75	0.76	0.76		
Percent Heavy Veh, %	22	0	0	22	22	22		
Cap, veh/h	471	0	0	471	149	133		
Arrive On Green	0.30	0.00	0.00	0.30	0.10	0.00		
Sat Flow, veh/h	1557	0	0	1557	1483	1324		
Grp Volume(v), veh/h	226	0	0	136	86	0		
Grp Sat Flow(s),veh/h/ln	1557	0	0	1557	1483	1324		
Q Serve(g_s), s	1.8	0.0	0.0	1.0	0.8	0.0		
Cycle Q Clear(g_c), s	1.8	0.0	0.0	1.0	0.8	0.0		
Prop In Lane		0.00	0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	471	0	0	471	149	133		
V/C Ratio(X)	0.48	0.00	0.00	0.29	0.58	0.00		
Avail Cap(c_a), veh/h	5531	0	0	5531	2708	2417		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	4.3	0.0	0.0	4.0	6.5	0.0		
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.3	3.5	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	0.5	0.5	0.0		
LnGrp Delay(d),s/veh	5.1	0.0	0.0	4.4	10.0	0.0		
LnGrp LOS	A			A	A			
Approach Vol, veh/h	226			136	86			
Approach Delay, s/veh	5.1			4.4	10.0			
Approach LOS	A			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				9.1		6.0		9.1
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				53.5		27.5		53.5
Max Q Clear Time (g_c+I1), s				3.8		2.8		3.0
Green Ext Time (p_c), s				2.1		0.2		2.1
Intersection Summary								
HCM 2010 Ctrl Delay			5.8					
HCM 2010 LOS			A					

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	29	10	11	173	304	24
Future Vol, veh/h	29	10	11	173	304	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	425	-	-	350
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	78	78	88	88
Heavy Vehicles, %	3	3	3	18	18	3
Mvmt Flow	32	11	14	222	345	27
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	595	345	345	0	-	0
Stage 1	345	-	-	-	-	-
Stage 2	250	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	465	696	1208	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	789	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	460	696	1208	-	-	-
Mov Cap-2 Maneuver	460	-	-	-	-	-
Stage 1	715	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.8	0.5		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1208	-	504	-	-	
HCM Lane V/C Ratio	0.012	-	0.084	-	-	
HCM Control Delay (s)	8	-	12.8	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.3	-	-	

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	1	0	81	1	0	0	90	99	0	172	0
Future Vol, veh/h	0	1	0	81	1	0	0	90	99	0	172	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	83	83	83	89	89	89	84	84	84
Heavy Vehicles, %	3	3	3	22	3	3	3	18	22	3	18	3
Mvmt Flow	0	4	0	98	1	0	0	101	111	0	205	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	362	417	205	364	362	157	205	0	0	212	0	0
Stage 1	205	205	-	157	157	-	-	-	-	-	-	-
Stage 2	157	212	-	207	205	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.32	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.698	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	592	525	833	557	564	886	1360	-	-	1352	-	-
Stage 1	795	730	-	800	766	-	-	-	-	-	-	-
Stage 2	843	725	-	751	730	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	591	525	833	554	564	886	1360	-	-	1352	-	-
Mov Cap-2 Maneuver	591	525	-	554	564	-	-	-	-	-	-	-
Stage 1	795	730	-	800	766	-	-	-	-	-	-	-
Stage 2	842	725	-	747	730	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	11.9			12.9			0			0		
HCM LOS	B			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1360	-	-	525 554	-	1352	-	-				
HCM Lane V/C Ratio	-	-	-	0.008 0.178	-	-	-	-				
HCM Control Delay (s)	0	-	-	11.9 12.9	0	0	-	-				
HCM Lane LOS	A	-	-	B B	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0 0.6	-	0	-	-				

HCM 2010 Signalized Intersection Summary

3: SR 198 & I-5 SB Off Ramp

11/1/2017

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	163	171	0	113	136		
Future Volume (veh/h)	0	163	171	0	113	136		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1557	1557	0	1557	1557		
Adj Flow Rate, veh/h	0	175	184	0	118	0		
Adj No. of Lanes	0	1	1	0	1	1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.96	0.96		
Percent Heavy Veh, %	0	22	22	0	22	22		
Cap, veh/h	0	278	278	0	988	882		
Arrive On Green	0.00	0.18	0.18	0.00	0.67	0.00		
Sat Flow, veh/h	0	1557	1557	0	1483	1324		
Grp Volume(v), veh/h	0	175	184	0	118	0		
Grp Sat Flow(s),veh/h/ln	0	1557	1557	0	1483	1324		
Q Serve(g_s), s	0.0	6.0	6.4	0.0	1.7	0.0		
Cycle Q Clear(g_c), s	0.0	6.0	6.4	0.0	1.7	0.0		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	278	278	0	988	882		
V/C Ratio(X)	0.00	0.63	0.66	0.00	0.12	0.00		
Avail Cap(c_a), veh/h	0	1145	1145	0	988	882		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	22.0	22.1	0.0	3.5	0.0		
Incr Delay (d2), s/veh	0.0	2.4	2.7	0.0	0.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	2.8	2.9	0.0	0.7	0.0		
LnGrp Delay(d),s/veh	0.0	24.3	24.8	0.0	3.7	0.0		
LnGrp LOS		C	C		A			
Approach Vol, veh/h		175	184		118			
Approach Delay, s/veh		24.3	24.8		3.7			
Approach LOS		C	C		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				14.8		43.0		14.8
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				42.5		38.5		42.5
Max Q Clear Time (g_c+I1), s				8.0		3.7		8.4
Green Ext Time (p_c), s				2.0		0.3		2.0
Intersection Summary								
HCM 2010 Ctrl Delay			19.4					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

4: I-5 NB Off Ramp & SR 198

11/1/2017

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations	↑			↑	↖	↗		
Traffic Volume (veh/h)	207	0	0	131	59	69		
Future Volume (veh/h)	207	0	0	131	59	69		
Number	4	14	3	8	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1557	0	0	1557	1557	1557		
Adj Flow Rate, veh/h	246	0	0	151	66	0		
Adj No. of Lanes	1	0	0	1	1	1		
Peak Hour Factor	0.84	0.84	0.87	0.87	0.89	0.89		
Percent Heavy Veh, %	22	0	0	22	22	22		
Cap, veh/h	514	0	0	514	119	106		
Arrive On Green	0.33	0.00	0.00	0.33	0.08	0.00		
Sat Flow, veh/h	1557	0	0	1557	1483	1324		
Grp Volume(v), veh/h	246	0	0	151	66	0		
Grp Sat Flow(s),veh/h/ln	1557	0	0	1557	1483	1324		
Q Serve(g_s), s	1.9	0.0	0.0	1.1	0.7	0.0		
Cycle Q Clear(g_c), s	1.9	0.0	0.0	1.1	0.7	0.0		
Prop In Lane		0.00	0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	514	0	0	514	119	106		
V/C Ratio(X)	0.48	0.00	0.00	0.29	0.56	0.00		
Avail Cap(c_a), veh/h	5460	0	0	5460	2673	2386		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	4.1	0.0	0.0	3.8	6.8	0.0		
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.3	4.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	0.5	0.4	0.0		
LnGrp Delay(d),s/veh	4.8	0.0	0.0	4.1	10.8	0.0		
LnGrp LOS	A			A	B			
Approach Vol, veh/h	246			151	66			
Approach Delay, s/veh	4.8			4.1	10.8			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				9.5		5.7		9.5
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				53.5		27.5		53.5
Max Q Clear Time (g_c+I1), s				3.9		2.7		3.1
Green Ext Time (p_c), s				2.3		0.1		2.3
Intersection Summary								
HCM 2010 Ctrl Delay			5.4					
HCM 2010 LOS			A					

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	0	0	0	284	194	0
Future Vol, veh/h	0	0	0	284	194	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	425	-	-	350
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	18	18	3
Mvmt Flow	0	0	0	309	211	0
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	520	211	211	0	-	0
Stage 1	211	-	-	-	-	-
Stage 2	309	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	515	827	1354	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	515	827	1354	-	-	-
Mov Cap-2 Maneuver	515	-	-	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	742	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	0		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1354	-	-	-	-	
HCM Lane V/C Ratio	-	-	-	-	-	
HCM Control Delay (s)	0	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	2	5	70	5	3	2	115	95	0	103	0
Future Vol, veh/h	0	2	5	70	5	3	2	115	95	0	103	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	22	3	3	3	18	22	3	18	3
Mvmt Flow	0	2	5	76	5	3	2	125	103	0	112	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	296	345	112	297	293	177	112	0	0	228	0	0
Stage 1	112	112	-	181	181	-	-	-	-	-	-	-
Stage 2	184	233	-	116	112	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.32	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.698	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	654	576	938	617	616	863	1471	-	-	1334	-	-
Stage 1	891	801	-	776	748	-	-	-	-	-	-	-
Stage 2	815	710	-	842	801	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	646	575	938	611	615	863	1471	-	-	1334	-	-
Mov Cap-2 Maneuver	646	575	-	611	615	-	-	-	-	-	-	-
Stage 1	889	801	-	774	747	-	-	-	-	-	-	-
Stage 2	804	709	-	835	801	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	9.6			11.7			0.1			0		
HCM LOS	A			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR			
Capacity (veh/h)	1471	-	-	795	611	863	1334	-	-			
HCM Lane V/C Ratio	0.001	-	-	0.01	0.133	0.004	-	-	-			
HCM Control Delay (s)	7.5	0	-	9.6	11.8	9.2	0	-	-			
HCM Lane LOS	A	A	-	A	B	A	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0	0.5	0	0	-	-			

HCM 2010 Signalized Intersection Summary

3: SR 198 & I-5 SB Off Ramp

11/1/2017

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	209	161	0	93	172		
Future Volume (veh/h)	0	209	161	0	93	172		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1557	1557	0	1557	1557		
Adj Flow Rate, veh/h	0	227	175	0	101	0		
Adj No. of Lanes	0	1	1	0	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	0	22	22	0	22	22		
Cap, veh/h	0	321	321	0	955	852		
Arrive On Green	0.00	0.21	0.21	0.00	0.64	0.00		
Sat Flow, veh/h	0	1557	1557	0	1483	1324		
Grp Volume(v), veh/h	0	227	175	0	101	0		
Grp Sat Flow(s),veh/h/ln	0	1557	1557	0	1483	1324		
Q Serve(g_s), s	0.0	8.1	6.0	0.0	1.6	0.0		
Cycle Q Clear(g_c), s	0.0	8.1	6.0	0.0	1.6	0.0		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	321	321	0	955	852		
V/C Ratio(X)	0.00	0.71	0.55	0.00	0.11	0.00		
Avail Cap(c_a), veh/h	0	1106	1106	0	955	852		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	22.1	21.2	0.0	4.1	0.0		
Incr Delay (d2), s/veh	0.0	2.9	1.4	0.0	0.2	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	3.7	2.7	0.0	0.7	0.0		
LnGrp Delay(d),s/veh	0.0	24.9	22.7	0.0	4.3	0.0		
LnGrp LOS		C	C		A			
Approach Vol, veh/h		227	175		101			
Approach Delay, s/veh		24.9	22.7		4.3			
Approach LOS		C	C		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				16.8		43.0		16.8
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				42.5		38.5		42.5
Max Q Clear Time (g_c+I1), s				10.1		3.6		8.0
Green Ext Time (p_c), s				2.2		0.3		2.2
Intersection Summary								
HCM 2010 Ctrl Delay			20.0					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary

4: I-5 NB Off Ramp & SR 198

11/1/2017

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	175	0	0	43	103	90		
Future Volume (veh/h)	175	0	0	43	103	90		
Number	4	14	3	8	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1557	0	0	1557	1557	1557		
Adj Flow Rate, veh/h	190	0	0	47	112	0		
Adj No. of Lanes	1	0	0	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	22	0	0	22	22	22		
Cap, veh/h	338	0	0	338	188	168		
Arrive On Green	0.22	0.00	0.00	0.22	0.13	0.00		
Sat Flow, veh/h	1557	0	0	1557	1483	1324		
Grp Volume(v), veh/h	190	0	0	47	112	0		
Grp Sat Flow(s),veh/h/ln	1557	0	0	1557	1483	1324		
Q Serve(g_s), s	1.5	0.0	0.0	0.3	1.0	0.0		
Cycle Q Clear(g_c), s	1.5	0.0	0.0	0.3	1.0	0.0		
Prop In Lane		0.00	0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	338	0	0	338	188	168		
V/C Ratio(X)	0.56	0.00	0.00	0.14	0.60	0.00		
Avail Cap(c_a), veh/h	6078	0	0	6078	2976	2656		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	4.8	0.0	0.0	4.3	5.7	0.0		
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.2	3.0	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.0	0.2	0.5	0.0		
LnGrp Delay(d),s/veh	6.3	0.0	0.0	4.5	8.7	0.0		
LnGrp LOS	A			A	A			
Approach Vol, veh/h	190			47	112			
Approach Delay, s/veh	6.3			4.5	8.7			
Approach LOS	A			A	A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				7.5		6.2		7.5
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				53.5		27.5		53.5
Max Q Clear Time (g_c+I1), s				3.5		3.0		2.3
Green Ext Time (p_c), s				1.3		0.3		1.3
Intersection Summary								
HCM 2010 Ctrl Delay			6.8					
HCM 2010 LOS			A					

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	0	0	3	273	480	0
Future Vol, veh/h	0	0	3	273	480	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	425	-	-	350
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	18	18	3
Mvmt Flow	0	0	3	297	522	0
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	825	522	522	0	-	0
Stage 1	522	-	-	-	-	-
Stage 2	303	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	341	553	1039	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	747	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	340	553	1039	-	-	-
Mov Cap-2 Maneuver	340	-	-	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	745	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	0	0.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1039	-	-	-	-	
HCM Lane V/C Ratio	0.003	-	-	-	-	
HCM Control Delay (s)	8.5	-	0	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	-	-	-	

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	2	0	103	2	0	0	126	126	0	259	0
Future Vol, veh/h	0	2	0	103	2	0	0	126	126	0	259	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	22	3	3	3	18	22	3	18	3
Mvmt Flow	0	2	0	112	2	0	0	137	137	0	282	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	489	556	282	488	487	205	282	0	0	274	0	0
Stage 1	282	282	-	205	205	-	-	-	-	-	-	-
Stage 2	207	274	-	283	282	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.32	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.698	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	488	438	755	459	479	833	1275	-	-	1283	-	-
Stage 1	723	676	-	753	730	-	-	-	-	-	-	-
Stage 2	793	681	-	683	676	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	486	438	755	457	479	833	1275	-	-	1283	-	-
Mov Cap-2 Maneuver	486	438	-	457	479	-	-	-	-	-	-	-
Stage 1	723	676	-	753	730	-	-	-	-	-	-	-
Stage 2	791	681	-	681	676	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	13.3			15.5			0			0		
HCM LOS	B			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR			
Capacity (veh/h)	1275	-	-	438	457	-	1283	-	-			
HCM Lane V/C Ratio	-	-	-	0.005	0.25	-	-	-	-			
HCM Control Delay (s)	0	-	-	13.3	15.5	0	0	-	-			
HCM Lane LOS	A	-	-	B	C	A	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0	1	-	0	-	-			

HCM 2010 Signalized Intersection Summary

3: SR 198 & I-5 SB Off Ramp

11/1/2017

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	228	245	0	179	215		
Future Volume (veh/h)	0	228	245	0	179	215		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1557	1557	0	1557	1557		
Adj Flow Rate, veh/h	0	248	266	0	195	0		
Adj No. of Lanes	0	1	1	0	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	0	22	22	0	22	22		
Cap, veh/h	0	368	368	0	918	819		
Arrive On Green	0.00	0.24	0.24	0.00	0.62	0.00		
Sat Flow, veh/h	0	1557	1557	0	1483	1324		
Grp Volume(v), veh/h	0	248	266	0	195	0		
Grp Sat Flow(s),veh/h/ln	0	1557	1557	0	1483	1324		
Q Serve(g_s), s	0.0	9.0	9.8	0.0	3.6	0.0		
Cycle Q Clear(g_c), s	0.0	9.0	9.8	0.0	3.6	0.0		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	368	368	0	918	819		
V/C Ratio(X)	0.00	0.67	0.72	0.00	0.21	0.00		
Avail Cap(c_a), veh/h	0	1064	1064	0	918	819		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	21.6	21.9	0.0	5.2	0.0		
Incr Delay (d2), s/veh	0.0	2.1	2.7	0.0	0.5	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	4.1	4.5	0.0	1.6	0.0		
LnGrp Delay(d),s/veh	0.0	23.7	24.6	0.0	5.7	0.0		
LnGrp LOS		C	C		A			
Approach Vol, veh/h		248	266		195			
Approach Delay, s/veh		23.7	24.6		5.7			
Approach LOS		C	C		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				19.2		43.0		19.2
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				42.5		38.5		42.5
Max Q Clear Time (g_c+I1), s				11.0		5.6		11.8
Green Ext Time (p_c), s				2.9		0.6		2.9
Intersection Summary								
HCM 2010 Ctrl Delay			19.1					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

4: I-5 NB Off Ramp & SR 198

11/1/2017

									
Movement	EBT	EBR	WBL	WBT	NBL	NBR			
Lane Configurations									
Traffic Volume (veh/h)	297	0	0	182	93	109			
Future Volume (veh/h)	297	0	0	182	93	109			
Number	4	14	3	8	1	16			
Initial Q (Qb), veh	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1557	0	0	1557	1557	1557			
Adj Flow Rate, veh/h	323	0	0	198	101	0			
Adj No. of Lanes	1	0	0	1	1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	22	0	0	22	22	22			
Cap, veh/h	627	0	0	627	162	145			
Arrive On Green	0.40	0.00	0.00	0.40	0.11	0.00			
Sat Flow, veh/h	1557	0	0	1557	1483	1324			
Grp Volume(v), veh/h	323	0	0	198	101	0			
Grp Sat Flow(s),veh/h/ln	1557	0	0	1557	1483	1324			
Q Serve(g_s), s	2.9	0.0	0.0	1.6	1.2	0.0			
Cycle Q Clear(g_c), s	2.9	0.0	0.0	1.6	1.2	0.0			
Prop In Lane		0.00	0.00		1.00	1.00			
Lane Grp Cap(c), veh/h	627	0	0	627	162	145			
V/C Ratio(X)	0.52	0.00	0.00	0.32	0.62	0.00			
Avail Cap(c_a), veh/h	4516	0	0	4516	2211	1973			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	4.2	0.0	0.0	3.8	7.8	0.0			
Incr Delay (d2), s/veh	0.7	0.0	0.0	0.3	3.9	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.7	0.7	0.0			
LnGrp Delay(d),s/veh	4.8	0.0	0.0	4.1	11.7	0.0			
LnGrp LOS	A			A	B				
Approach Vol, veh/h	323			198	101				
Approach Delay, s/veh	4.8			4.1	11.7				
Approach LOS	A			A	B				
Timer	1	2	3	4	5	6	7	8	
Assigned Phs				4		6		8	
Phs Duration (G+Y+Rc), s				11.9		6.5		11.9	
Change Period (Y+Rc), s				4.5		4.5		4.5	
Max Green Setting (Gmax), s				53.5		27.5		53.5	
Max Q Clear Time (g_c+I1), s				4.9		3.2		3.6	
Green Ext Time (p_c), s				3.1		0.2		3.1	
Intersection Summary									
HCM 2010 Ctrl Delay			5.7						
HCM 2010 LOS			A						

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	109	42	45	284	194	114
Future Vol, veh/h	109	42	45	284	194	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	425	-	-	350
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	18	18	3
Mvmt Flow	118	46	49	309	211	124
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	618	211	211	0	-	0
Stage 1	211	-	-	-	-	-
Stage 2	407	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	451	827	1354	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	435	827	1354	-	-	-
Mov Cap-2 Maneuver	435	-	-	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	646	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	15.6	1.1		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1354	-	501	-	-	
HCM Lane V/C Ratio	0.036	-	0.328	-	-	
HCM Control Delay (s)	7.8	-	15.6	-	-	
HCM Lane LOS	A	-	C	-	-	
HCM 95th %tile Q(veh)	0.1	-	1.4	-	-	

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	2	5	147	5	3	2	150	169	0	140	0
Future Vol, veh/h	0	2	5	147	5	3	2	150	169	0	140	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	22	3	3	3	18	22	3	18	3
Mvmt Flow	0	2	5	160	5	3	2	163	184	0	152	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	414	503	152	415	411	255	152	0	0	347	0	0
Stage 1	152	152	-	259	259	-	-	-	-	-	-	-
Stage 2	262	351	-	156	152	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.32	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.698	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	547	469	892	514	529	781	1423	-	-	1206	-	-
Stage 1	848	770	-	704	692	-	-	-	-	-	-	-
Stage 2	741	630	-	801	770	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	540	468	892	508	528	781	1423	-	-	1206	-	-
Mov Cap-2 Maneuver	540	468	-	508	528	-	-	-	-	-	-	-
Stage 1	846	770	-	703	691	-	-	-	-	-	-	-
Stage 2	731	629	-	794	770	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	10.1			15.3			0			0		
HCM LOS	B			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR			
Capacity (veh/h)	1423	-	-	709	509	781	1206	-	-			
HCM Lane V/C Ratio	0.002	-	-	0.011	0.325	0.004	-	-	-			
HCM Control Delay (s)	7.5	0	-	10.1	15.4	9.6	0	-	-			
HCM Lane LOS	A	A	-	B	C	A	A	-	-			
HCM 95th %tile Q(veh)	0	-	-	0	1.4	0	0	-	-			

HCM 2010 Signalized Intersection Summary

3: SR 198 & I-5 SB Off Ramp

11/1/2017

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	283	238	0	93	172		
Future Volume (veh/h)	0	283	238	0	93	172		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1557	1557	0	1557	1557		
Adj Flow Rate, veh/h	0	308	259	0	101	0		
Adj No. of Lanes	0	1	1	0	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	0	22	22	0	22	22		
Cap, veh/h	0	410	410	0	886	791		
Arrive On Green	0.00	0.26	0.26	0.00	0.60	0.00		
Sat Flow, veh/h	0	1557	1557	0	1483	1324		
Grp Volume(v), veh/h	0	308	259	0	101	0		
Grp Sat Flow(s),veh/h/ln	0	1557	1557	0	1483	1324		
Q Serve(g_s), s	0.0	11.7	9.5	0.0	1.9	0.0		
Cycle Q Clear(g_c), s	0.0	11.7	9.5	0.0	1.9	0.0		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	410	410	0	886	791		
V/C Ratio(X)	0.00	0.75	0.63	0.00	0.11	0.00		
Avail Cap(c_a), veh/h	0	1027	1027	0	886	791		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	21.8	21.0	0.0	5.6	0.0		
Incr Delay (d2), s/veh	0.0	2.8	1.6	0.0	0.3	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	5.3	4.2	0.0	0.8	0.0		
LnGrp Delay(d),s/veh	0.0	24.6	22.6	0.0	5.9	0.0		
LnGrp LOS		C	C		A			
Approach Vol, veh/h		308	259		101			
Approach Delay, s/veh		24.6	22.6		5.9			
Approach LOS		C	C		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				21.5		43.0		21.5
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				42.5		38.5		42.5
Max Q Clear Time (g_c+I1), s				13.7		3.9		11.5
Green Ext Time (p_c), s				3.3		0.3		3.3
Intersection Summary								
HCM 2010 Ctrl Delay			21.0					
HCM 2010 LOS			C					

HCM 2010 Signalized Intersection Summary

4: I-5 NB Off Ramp & SR 198

11/1/2017

								
Movement	EBT	EBR	WBL	WBT	NBL	NBR		
Lane Configurations								
Traffic Volume (veh/h)	249	0	0	120	103	90		
Future Volume (veh/h)	249	0	0	120	103	90		
Number	4	14	3	8	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1557	0	0	1557	1557	1557		
Adj Flow Rate, veh/h	271	0	0	130	112	0		
Adj No. of Lanes	1	0	0	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	22	0	0	22	22	22		
Cap, veh/h	524	0	0	524	180	161		
Arrive On Green	0.34	0.00	0.00	0.34	0.12	0.00		
Sat Flow, veh/h	1557	0	0	1557	1483	1324		
Grp Volume(v), veh/h	271	0	0	130	112	0		
Grp Sat Flow(s),veh/h/ln	1557	0	0	1557	1483	1324		
Q Serve(g_s), s	2.3	0.0	0.0	1.0	1.2	0.0		
Cycle Q Clear(g_c), s	2.3	0.0	0.0	1.0	1.2	0.0		
Prop In Lane		0.00	0.00		1.00	1.00		
Lane Grp Cap(c), veh/h	524	0	0	524	180	161		
V/C Ratio(X)	0.52	0.00	0.00	0.25	0.62	0.00		
Avail Cap(c_a), veh/h	5018	0	0	5018	2457	2192		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00		
Uniform Delay (d), s/veh	4.4	0.0	0.0	4.0	6.9	0.0		
Incr Delay (d2), s/veh	0.8	0.0	0.0	0.2	3.5	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.0	0.5	0.6	0.0		
LnGrp Delay(d),s/veh	5.2	0.0	0.0	4.2	10.4	0.0		
LnGrp LOS	A			A	B			
Approach Vol, veh/h	271			130	112			
Approach Delay, s/veh	5.2			4.2	10.4			
Approach LOS	A			A	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				10.1		6.5		10.1
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				53.5		27.5		53.5
Max Q Clear Time (g_c+I1), s				4.3		3.2		3.0
Green Ext Time (p_c), s				2.3		0.3		2.3
Intersection Summary								
HCM 2010 Ctrl Delay			6.1					
HCM 2010 LOS			A					

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	29	10	12	273	480	24
Future Vol, veh/h	29	10	12	273	480	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	425	-	-	350
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	18	18	3
Mvmt Flow	32	11	13	297	522	26
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	845	522	522	0	-	0
Stage 1	522	-	-	-	-	-
Stage 2	323	-	-	-	-	-
Critical Hdwy	6.43	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	332	553	1039	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	732	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	328	553	1039	-	-	-
Mov Cap-2 Maneuver	328	-	-	-	-	-
Stage 1	593	-	-	-	-	-
Stage 2	723	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	16.1	0.4		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1039	-	366	-	-	
HCM Lane V/C Ratio	0.013	-	0.116	-	-	
HCM Control Delay (s)	8.5	-	16.1	-	-	
HCM Lane LOS	A	-	C	-	-	
HCM 95th %tile Q(veh)	0	-	0.4	-	-	

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	2	0	119	2	0	0	136	145	0	267	0
Future Vol, veh/h	0	2	0	119	2	0	0	136	145	0	267	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	50	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	22	3	3	3	18	22	3	18	3
Mvmt Flow	0	2	0	129	2	0	0	148	158	0	290	0
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	518	595	290	518	517	227	290	0	0	305	0	0
Stage 1	290	290	-	227	227	-	-	-	-	-	-	-
Stage 2	228	305	-	291	290	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.32	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.32	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.698	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	467	416	747	438	461	810	1266	-	-	1250	-	-
Stage 1	716	670	-	733	714	-	-	-	-	-	-	-
Stage 2	772	660	-	676	670	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	465	416	747	436	461	810	1266	-	-	1250	-	-
Mov Cap-2 Maneuver	465	416	-	436	461	-	-	-	-	-	-	-
Stage 1	716	670	-	733	714	-	-	-	-	-	-	-
Stage 2	770	660	-	674	670	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	13.7			16.8			0			0		
HCM LOS	B			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR					
Capacity (veh/h)	1266	-	-	416 436	-	1250	-	-				
HCM Lane V/C Ratio	-	-	-	0.005 0.302	-	-	-	-				
HCM Control Delay (s)	0	-	-	13.7 16.8	0	0	-	-				
HCM Lane LOS	A	-	-	B C	A	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0 1.3	-	0	-	-				

HCM 2010 Signalized Intersection Summary

3: SR 198 & I-5 SB Off Ramp

11/1/2017

								
Movement	EBL	EBT	WBT	WBR	SBL	SBR		
Lane Configurations								
Traffic Volume (veh/h)	0	247	261	0	179	215		
Future Volume (veh/h)	0	247	261	0	179	215		
Number	7	4	8	18	1	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	0	1557	1557	0	1557	1557		
Adj Flow Rate, veh/h	0	268	284	0	195	0		
Adj No. of Lanes	0	1	1	0	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	0	22	22	0	22	22		
Cap, veh/h	0	388	388	0	903	806		
Arrive On Green	0.00	0.25	0.25	0.00	0.61	0.00		
Sat Flow, veh/h	0	1557	1557	0	1483	1324		
Grp Volume(v), veh/h	0	268	284	0	195	0		
Grp Sat Flow(s),veh/h/ln	0	1557	1557	0	1483	1324		
Q Serve(g_s), s	0.0	9.9	10.6	0.0	3.7	0.0		
Cycle Q Clear(g_c), s	0.0	9.9	10.6	0.0	3.7	0.0		
Prop In Lane	0.00			0.00	1.00	1.00		
Lane Grp Cap(c), veh/h	0	388	388	0	903	806		
V/C Ratio(X)	0.00	0.69	0.73	0.00	0.22	0.00		
Avail Cap(c_a), veh/h	0	1046	1046	0	903	806		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00		
Uniform Delay (d), s/veh	0.0	21.5	21.8	0.0	5.6	0.0		
Incr Delay (d2), s/veh	0.0	2.2	2.7	0.0	0.5	0.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.0	4.5	4.8	0.0	1.7	0.0		
LnGrp Delay(d),s/veh	0.0	23.7	24.5	0.0	6.1	0.0		
LnGrp LOS		C	C		A			
Approach Vol, veh/h		268	284		195			
Approach Delay, s/veh		23.7	24.5		6.1			
Approach LOS		C	C		A			
Timer	1	2	3	4	5	6	7	8
Assigned Phs				4		6		8
Phs Duration (G+Y+Rc), s				20.3		43.0		20.3
Change Period (Y+Rc), s				4.5		4.5		4.5
Max Green Setting (Gmax), s				42.5		38.5		42.5
Max Q Clear Time (g_c+I1), s				11.9		5.7		12.6
Green Ext Time (p_c), s				3.2		0.6		3.2
Intersection Summary								
HCM 2010 Ctrl Delay			19.4					
HCM 2010 LOS			B					

HCM 2010 Signalized Intersection Summary

4: I-5 NB Off Ramp & SR 198

11/1/2017

									
Movement	EBT	EBR	WBL	WBT	NBL	NBR			
Lane Configurations									
Traffic Volume (veh/h)	316	0	0	198	93	109			
Future Volume (veh/h)	316	0	0	198	93	109			
Number	4	14	3	8	1	16			
Initial Q (Qb), veh	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00			
Adj Sat Flow, veh/h/ln	1557	0	0	1557	1557	1557			
Adj Flow Rate, veh/h	343	0	0	215	101	0			
Adj No. of Lanes	1	0	0	1	1	1			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	22	0	0	22	22	22			
Cap, veh/h	655	0	0	655	161	144			
Arrive On Green	0.42	0.00	0.00	0.42	0.11	0.00			
Sat Flow, veh/h	1557	0	0	1557	1483	1324			
Grp Volume(v), veh/h	343	0	0	215	101	0			
Grp Sat Flow(s),veh/h/ln	1557	0	0	1557	1483	1324			
Q Serve(g_s), s	3.1	0.0	0.0	1.8	1.2	0.0			
Cycle Q Clear(g_c), s	3.1	0.0	0.0	1.8	1.2	0.0			
Prop In Lane		0.00	0.00		1.00	1.00			
Lane Grp Cap(c), veh/h	655	0	0	655	161	144			
V/C Ratio(X)	0.52	0.00	0.00	0.33	0.63	0.00			
Avail Cap(c_a), veh/h	4357	0	0	4357	2133	1903			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	0.00			
Uniform Delay (d), s/veh	4.1	0.0	0.0	3.7	8.2	0.0			
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.3	4.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	1.4	0.0	0.0	0.8	0.7	0.0			
LnGrp Delay(d),s/veh	4.8	0.0	0.0	4.0	12.1	0.0			
LnGrp LOS	A			A	B				
Approach Vol, veh/h	343			215	101				
Approach Delay, s/veh	4.8			4.0	12.1				
Approach LOS	A			A	B				
Timer	1	2	3	4	5	6	7	8	
Assigned Phs				4		6		8	
Phs Duration (G+Y+Rc), s				12.5		6.6		12.5	
Change Period (Y+Rc), s				4.5		4.5		4.5	
Max Green Setting (Gmax), s				53.5		27.5		53.5	
Max Q Clear Time (g_c+I1), s				5.1		3.2		3.8	
Green Ext Time (p_c), s				3.4		0.2		3.4	
Intersection Summary									
HCM 2010 Ctrl Delay			5.6						
HCM 2010 LOS			A						

APPENDIX D

Traffic Index Analysis

PHELPS AVENUE

Existing Conditions (w/out Granite Construction Trips)
TI Calculation

SEGMENT = **Phelps Avenue (Eastbound)**

TRUCK CLASSIFICATION	ADTT 2019 COUNTS	GRANITE TRUCKS IN 2019 COUNTS (FROM SURVEY)	ADTT 2019 COUNTS W/OUT GRANITE TRUCKS	ANNUAL GROWTH RATE	EXPANDED ADTT	ESAL 20 YEAR CONSTANT	TOTAL 20 YEAR ESAL
2-AXLE	21	0	21	2.0%	31	1380	43,064
3-AXLE	13	2	11	2.0%	16	3680	60,153
4-AXLE	5	5	0	2.0%	0	5880	0
>5-AXLE	21	11	10	2.0%	15	13780	204,771
TOTAL							307,988
							7.8

8.0

Existing Conditions (w/out Granite Construction Trips)
TI Calculation

SEGMENT = **Phelps Avenue (Westbound)**

TRUCK CLASSIFICATION	ADTT 2019 COUNTS	GRANITE TRUCKS IN 2019 COUNTS (FROM SURVEY)	ADTT 2019 COUNTS W/OUT GRANITE TRUCKS	ANNUAL GROWTH RATE	EXPANDED ADTT	ESAL 20 YEAR CONSTANT	TOTAL 20 YEAR ESAL
2-AXLE	13	0	13	2.0%	19	1380	26,659
3-AXLE	10	0	10	2.0%	15	3680	54,685
4-AXLE	0	0	0	2.0%	0	5880	0
>5-AXLE	30	14	16	2.0%	24	13780	327,633
TOTAL							408,977
							8.1

8.0

Existing Conditions (w/ Granite Construction Trips)

TI Calculation

SEGMENT = Jayne Avenue (Eastbound)

[illegible]

SEGMENT = Jayne Avenue (Westbound)

TRUCK CLASSIFICATION	ADTT 2019 COUNTS	GRANITE TRUCKS IN 2019 (FROM SURVEY)	ADTT 2019 COUNTS W/OUT GRANITE TRUCKS	GRANITE TRUCKS (1.5 MT SALES)	ADTT 2019 COUNTS WITH GRANITE TRUCKS	ANNUAL GROWTH RATE	EXPANDED ADTT	ESAL 20 YEAR CONSTANT	TOTAL 20 YEAR ESAL	
2-AXLE	68	0	68	0	68	2.0%	101	1380	139,446	
3-AXLE	19	6	13	0	13	2.0%	19	3680	71,090	
4-AXLE	9	0	9	0	9	2.0%	13	5880	78,639	
>5-AXLE	146	16	130	32	162	2.0%	225	13780	3,100,500	
	Granite Truck Trips will remain consistent with 1.5 MT of sales							TOTAL	3,389,676	
									10.4	10.5

CALAVERAS AVENUE

Existing Conditions (w/out Granite Construction Trips)
TI Calculation

SEGMENT = **Calaveras Avenue (Northbound)**

TRUCK CLASSIFICATION	ADTT 2019 COUNTS	GRANITE TRUCKS IN 2019 COUNTS (FROM SURVEY)	ADTT 2019 COUNTS W/OUT GRANITE TRUCKS	ANNUAL GROWTH RATE	EXPANDED ADTT	ESAL 20 YEAR CONSTANT	TOTAL 20 YEAR ESAL	
2-AXLE	11	0	11	2.0%	16	1380	22,557	
3-AXLE	7	0	7	2.0%	10	3680	38,279	
4-AXLE	0	0	0	2.0%	0	5880	0	
>5-AXLE	43	14	29	2.0%	43	13780	593,835	
						TOTAL	654,672	
							8.6	8.5

Existing Conditions (w/out Granite Construction Trips)
TI Calculation

SEGMENT = **Calaveras Avenue (Southbound)**

TRUCK CLASSIFICATION	ADTT 2019 COUNTS	GRANITE TRUCKS IN 2019 COUNTS (FROM SURVEY)	ADTT 2019 COUNTS W/OUT GRANITE TRUCKS	ANNUAL GROWTH RATE	EXPANDED ADTT	ESAL 20 YEAR CONSTANT	TOTAL 20 YEAR ESAL	
2-AXLE	12	0	12	2.0%	18	1380	24,608	
3-AXLE	6	2	4	2.0%	6	3680	21,874	
4-AXLE	5	5	0	2.0%	0	5880	0	
>5-AXLE	41	11	30	2.0%	45	13780	614,312	
TOTAL							660,794	
							8.6	8.5

Existing Conditions (w/ Granite Construction Trips)

TI Calculation

SEGMENT = **Calaveras Avenue (Northbound)**

[illegible]

**Existing Conditions (w/ Granite Construction Trips)
TI Calculation**

SEGMENT = **Calaveras Avenue (Southbound)**

TRUCK CLASSIFICATION	ADTT 2019 COUNTS	GRANITE TRUCKS IN 2019 COUNTS (FROM SURVEY)	ADTT 2019 COUNTS W/OUT GRANITE TRUCKS	GRANITE TRUCKS (1.5 MT SALES)	ADTT 2019 COUNTS WITH GRANITE TRUCKS	ANNUAL GROWTH RATE	EXPANDED ADTT	ESAL 20 YEAR CONSTANT	TOTAL 20 YEAR ESAL	
2-AXLE	12	0	12	0	12	2.0%	18	1380	24,608	
3-AXLE	6	2	4	0	4	2.0%	6	3680	21,874	
4-AXLE	5	5	0	0	0	2.0%	0	5880	0	
>5-AXLE	41	11	30	22	52	2.0%	67	13780	923,260	
		Granite Truck Trips will remain consistent with 1.5 MT of sales						TOTAL	969,742	
									9.0	9.0

JAYNE AVENUE

**Existing Conditions (w/out Granite Construction Trips)
TI Calculation**

SEGMENT = Jayne Avenue (Eastbound)

TRUCK CLASSIFICATION	ADTT 2019 COUNTS	GRANITE TRUCKS IN 2019 COUNTS (FROM SURVEY)	ADTT 2019 COUNTS W/OUT GRANITE TRUCKS	ANNUAL GROWTH RATE	EXPANDED ADTT	ESAL 20 YEAR CONSTANT	TOTAL 20 YEAR ESAL	
2-AXLE	65	0	65	2.0%	97	1380	133,294	
3-AXLE	20	0	20	2.0%	30	3680	109,370	
4-AXLE	16	5	11	2.0%	16	5880	96,114	
>5-AXLE	112	11	101	2.0%	150	13780	2,068,185	
						TOTAL	2,406,963	
							10.0	10.0

**Existing Conditions (w/out Granite Construction Trips)
TI Calculation**

SEGMENT = Jayne Avenue (Westbound)

TRUCK CLASSIFICATION	ADTT 2019 COUNTS	GRANITE TRUCKS IN 2019 COUNTS (FROM SURVEY)	ADTT 2019 COUNTS W/OUT GRANITE TRUCKS	ANNUAL GROWTH RATE	EXPANDED ADTT	ESAL 20 YEAR CONSTANT	TOTAL 20 YEAR ESAL	
2-AXLE	68	0	68	2.0%	101	1380	139,446	
3-AXLE	19	6	13	2.0%	19	3680	71,090	
4-AXLE	9	0	9	2.0%	13	5880	78,639	
>5-AXLE	146	16	130	2.0%	193	13780	2,662,020	
						TOTAL	2,951,196	
							10.2	10.0

Existing Conditions (w/ Granite Construction Trips)

TI Calculation

SEGMENT = Jayne Avenue (Eastbound)

[illegible]

**Existing Conditions (w/ Granite Construction Trips)
TI Calculation**

SEGMENT = **Jayne Avenue (Westbound)**

TRUCK CLASSIFICATION	ADTT 2019 COUNTS	GRANITE TRUCKS IN 2019 COUNTS (FROM SURVEY)	ADTT 2019 COUNTS W/OUT GRANITE TRUCKS	GRANITE TRUCKS (1.5 MT SALES)	ADTT 2019 COUNTS WITH GRANITE TRUCKS	ANNUAL GROWTH RATE	EXPANDED ADTT	ESAL 20 YEAR CONSTANT	TOTAL 20 YEAR ESAL	
2-AXLE	68	0	68	0	68	2.0%	101	1380	139,446	
3-AXLE	19	6	13	0	13	2.0%	19	3680	71,090	
4-AXLE	9	0	9	0	9	2.0%	13	5880	78,639	
>5-AXLE	146	16	130	32	162	2.0%	225	13780	3,100,500	
Granite Truck Trips will remain consistent with 1.5 MT of sales									TOTAL	3,389,676
									10.4	10.5