

3.16 Traffic/Circulation

This section evaluates the potential impacts of the Proposed Action on traffic and circulation. This evaluation includes an assessment of the direct, indirect, short-term, long-term, and cumulative effects of the Proposed Action on roadway and intersection traffic congestion. The evaluation is based on the traffic impact analysis prepared by Linscott, Law, & Greenspan, Engineers (LLG, 2007), which is included as Appendix G to this EIR/EIS.

3.16.1 Affected Environment

3.16.1.1 Environmental Setting

This section describes the existing transportation facilities and traffic conditions within the SV 100K study area. Refer to Figure 3-2 in Appendix G to this EIR/EIS for a depiction of the existing circulation network in the vicinity of the Proposed Action.

Regional and Local Roadways

Interstate 8 (I-8) is an east-west facility located south of El Cajon. Access from the San Vicente area to I-8 is provided via State Route 67 (SR-67), which connects to I-8 near El Cajon. I-8 begins at Ocean Beach, just east of San Diego, and continues through Arizona.

State Route 67 (SR-67) is a north-/south Caltrans facility, and is classified as a Major Road (from north of Willow Road to Ramona Street) in the County of San Diego General Plan Circulation Element within the project vicinity. It is currently a two-lane undivided roadway south of San Vicente Avenue/Posthill Road, and generally a four-lane roadway north of Vigilante Road. SR-67 is approximately one quarter-mile west of the easternmost tip of San Vicente Reservoir; it starts at Ramona and continues past Lakeside to the City of El Cajon, where it connects to I-8. Access to San Vicente Reservoir from SR-67 is from Vigilante Road and Moreno Avenue. Curbside parking is generally prohibited. The posted speed limit south of Scripps Poway Parkway is 60 miles per hour (MPH) and 55 MPH north of Scripps Poway Parkway.

Scripps Poway Parkway is classified as a Prime Arterial west of SR 67 in the County of San Diego Circulation Element within the project vicinity. Currently, it is generally a six-lane divided road from Pomerado Road to SR-67; curbs, gutters, sidewalks, and raised medians are provided. Parking is not permitted, and the posted speed limit is 55 MPH.

Poway Road is classified as a four-lane Major Road west of SR-67 in the County of San Diego Circulation Element within the project vicinity. Curbs, gutters, sidewalks, and raised medians are provided.

Vigilante Road is classified as a two-lane Light Collector Roadway in the County of San Diego Circulation Element within the project vicinity. Currently, it is a two-lane undivided road east of

SR-67. Vigilante Road connects SR-67 to Moreno Avenue, which is the only access to San Vicente Reservoir.

Moreno Avenue is classified as a two-lane Light Collector Roadway in the County of San Diego Circulation Element within the project vicinity. Currently, it is a two-lane undivided roadway with truck restrictions. Moreno Avenue (north of Vigilante Road) is the primary local access to San Vicente Reservoir.

Existing Facilities Included in the Traffic Analysis Study Area

The following intersections and segments were selected for inclusion in the traffic analysis study area for the Proposed Action based on the anticipated volume of SV 100K traffic, the distributional patterns of this traffic, and known locations of operational difficulty.

Intersections

- Pomerado Road/Scripps Poway Parkway
- SR-67/Poway Road
- SR-67/Scripps Poway Parkway
- SR-67/Vigilante Road
- SR-67/San Vicente Avenue/Posthill Road
- SR-67/Willow Road
- Vigilante Road/Moreno Avenue

Segments

- SR-67
 - Poway Road to Scripps Poway Parkway
 - Scripps Poway Parkway to Vigilante Road
 - Vigilante Road to San Vicente Avenue/Posthill Road
- Scripps Poway Parkway, west of SR-67
- Vigilante Road, east of SR-67

Quantitative analyses of AM and PM peak hour conditions have been conducted for the following scenarios shown in Table 3.16-1.

Existing Traffic Volumes

Peak-Hour Intersection Turning Movement Volumes

Manual peak hour intersection counts were conducted in October 2005. Because the original counts were conducted in 2005, a growth factor of two percent was applied to these counts to represent 2006 conditions. The two percent factor is based on general traffic growth along SR-67 since October 2005. Counts were conducted during both AM (7:00-9:00) and PM (4:00-6:00) peak periods.

Table 3.16-1. Description of Traffic Analysis Scenarios

Scenario	Description of Scenario
Existing Conditions	
Existing	Existing conditions in the study area without any additional development.
Baseline Conditions	
Baseline: Year 2010 without SV 100K Construction Traffic	Existing conditions plus 8% growth factor.
Baseline Plus SV 100K Construction Traffic: Off-Site Quarry Option	Baseline conditions plus traffic associated with truck trips to bring off-site aggregate materials onto SV 100K site.
Baseline Plus SV 100K Construction Traffic: On-Site Quarry Options	Baseline conditions plus traffic associated with on-site quarrying operations either below the dam or at the marina.

Source: LLG, 2007

Daily Segment Volumes

Bi-directional daily traffic counts were conducted in October 2005. Again, because the original counts were conducted in 2005, a growth factor of two percent was applied to these counts to represent 2006 conditions. Table 3.16-2 shows the most recent available average daily trips (ADT) from Caltrans records and the counted ADT for the study area segments.

Table 3.16-2. Existing Traffic Volumes

Street Segment	ADT ⁽¹⁾	Source
SR-67		
Poway Road to Scripps Poway Parkway	22,240	Caltrans
Scripps Poway Parkway to Vigilante Road	27,540	Caltrans
South of Vigilante Road	24,480	Caltrans
Scripps Poway Parkway		
West of SR-67	20,380	LLG
Vigilante Road		
East of SR-67	2,070	LLG

⁽¹⁾ ADT with a 2 percent growth rate.

Source: LLG, 2007

Methodology for Analysis of Existing Traffic Conditions

Field reconnaissance was undertaken to ascertain the traffic control characteristics of each of the study area intersections and segments. Determination of roadway operating conditions is based on comparison of known or projected traffic volumes during peak hours to roadway capacity. Level of service (LOS) is the term used to denote the different operating conditions that occur on a given intersection or segment under various traffic volume loads. It is a qualitative measure used to describe a quantitative analysis, taking into account factors such as roadway geometries, signal phasing, speed, travel delay, freedom to maneuver, and safety. LOS designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the

worst operating conditions. LOS designation is reported differently for signalized and unsignalized intersections, as well as for segments.

Peak construction for the SV 100K Alternative (Proposed Action) is anticipated to occur in Year 2010. Therefore, to account for the growth in area traffic between Year 2006 and Year 2010, a growth factor of eight percent (approximately two percent growth per year for four years) was added to existing traffic counts to represent Year 2010-without-SV 100K conditions.

Intersection Analysis

Signalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay was determined using the methodology found in Chapter 16 of the *2000 Highway Capacity Manual* (HCM), with the assistance of the *Traffix v. 7.5* computer software. The delay values (represented in seconds) were qualified with a corresponding intersection LOS.

Unsignalized intersections were analyzed under AM and PM peak hour conditions. Average vehicle delay and LOS were determined based upon the procedures found in Chapter 17 of the HCM, with the assistance of the *Traffix v. 7.5* computer software. Table 3.16-3 shows LOS criteria for unsignalized intersections.

Table 3.16-3. Level of Service Criteria – Unsignalized Intersections

Level of Service (LOS)	Total Delay Per Vehicle (seconds)	Description of Condition
A	≤ 10	Free flow, no delays
B	> 10 and ≤ 15	Stable flow, little delay
C	> 15 and ≤ 25	Stable flow, moderate delay
D	> 25 and ≤ 35	Unstable flow, long delay
E	> 35 and ≤ 50	Unstable flow, severe delay
F	> 50	Forced flow and gridlock

Source: Transportation Research Board, 2000.

ILV Operations Analysis

Caltrans prefers that state-owned intersections be analyzed using Intersecting Lane Vehicles (ILV) methodology as described in Chapter 400, Topic 406 of the *Department Highway Design Manual*. The ILV methodology is based on the concept that the capacity of intersecting lanes of traffic is 1,500 vehicles per hour (hr). For the typical local street interchange there is usually a critical intersection of a ramp and the crossroads that establishes the capacity of the interchange. Listed below are the values of ILV/hr for various traffic flow conditions.

- **UNDER - ILV/hr < 1200** – Stable flow with slight, but acceptable delay. Occasional signal loading may develop. Free mid-block operations.

- **NEAR - ILV/hr 1200 – 1500** – Description: Unstable flow with considerable delays possible. Some vehicles occasionally wait two or more cycles to pass through the intersection. Continuous backup occurs at some approaches.
- **OVER - ILV/hr >1500** – Description: Stop-and-go operation with severe delay and heavy congestion.¹ Traffic volume is limited by maximum discharge rates of each phase. Continuous backup in varying degrees occurs on all approaches. Where downstream capacity is restrictive, mainline congestion can impede orderly discharge through the intersection.

Street Segment Analysis

Street segment analysis is based on the comparison of average daily trips (ADT) to the County of San Diego's Roadway Classification, Level of Service, and ADT Table (Appendix G to this EIR/EIS). This table provides segment capacities for different street classifications based on traffic volumes and roadway characteristics.

Analysis Results for Existing Traffic Conditions

Peak-Hour Intersection LOS

As shown in Table 3.16-4, except for the following, all study area intersections are calculated to currently operate at LOS D or better during both the AM and PM peak hours:

- SR-67/Vigilante Road (westbound left operates at LOS F during both AM and PM peak hour)
- SR-67/San Vicente Avenue (eastbound movement operates at LOS F during the AM peak hour and LOS E during the PM peak hour)
- SR-67/Willow Road (LOS E during the AM peak hour)

ILV Analysis

As shown in Table 3.16-5, all signalized intersections on SR-67 are calculated to currently operate at or under capacity during both the AM and PM peak hours, except the SR-67/Willow Road intersection, which currently operates over capacity during both the AM and PM peak hours.

Daily Street Segment LOS

As shown in Table 3.16-6, all study area segments are calculated to currently operate at LOS C or better.

¹ The amount of congestion depends on how much the ILV/hr value exceeds 1500. Observed flow rates will normally not exceed 1500 ILV/hr, and the excess will be delayed in a queue.

Table 3.16-4. Existing Intersection Operations

Intersection	Control Type ^(3,4)	Peak Hour	Existing	
			Delay ⁽¹⁾	LOS ⁽²⁾
Pomerado Road/Scripps Poway Parkway	Signal	AM	24.5	C
		PM	29.5	C
SR-67/Poway Road	Signal	AM	17.8	B
		PM	18.0	B
SR-67/Scripps Poway Parkway	Signal	AM	24.6	C
		PM	27.3	C
SR-67/Vigilante Road	TWSC (WBL)	AM	93.0	F
		PM	>100	F
SR-67/San Vicente Avenue	TWSC (EB/WB)	AM	>100/28.0	F/D
		PM	40.5/15.0	E/C
SR-67/Willow Road	Signal	AM	70.2	E
		PM	50.6	D
Vigilante Road/Moreno Avenue	TWSC (SB)	AM	9.8	A
		PM	10.1	B

⁽¹⁾ Average delay expressed in seconds per vehicle.

⁽²⁾ Level of Service.

⁽³⁾ TWSC – Two-Way Stop Controlled intersection. Minor street left turn delay is reported.

⁽⁴⁾ WBL=Westbound Left-turn; EB=Eastbound; WB=Westbound; SB=Southbound.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 < 10.0	A	0.0 < 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
> 80.1	F	> 50.1	F

Table 3.16-5. Caltrans ILV Method Intersection Operations

Intersection	AM Peak Period		PM Peak Period	
	ILV ⁽¹⁾	Capacity ⁽²⁾	ILV	Capacity
SR-67/Poway Road	1052	Under	1178	Under
SR-67/Scripps Poway Parkway	1489	At	1431	At
SR-67/Willow Road	1907	Over	1668	Over

⁽¹⁾ ILV = Intersecting Lane Vehicles.

⁽²⁾ CAPACITY is shown as *UNDER* capacity, *AT* capacity or *OVER* capacity;

Under Capacity = <1200 ILV/Hour

At Capacity = >1200 but < 1500 ILV/Hour

Over Capacity = >1500 ILV/Hour

Source: LLG Engineers, 2007

Table 3.16-6. Existing Street Segment Operations

Street Segment	Capacity (LOS E) ⁽¹⁾	ADT	LOS	V/C
SR-67				
Poway Road to Scripps Poway Parkway	37,000	22,000	0.59	B
Scripps Poway Parkway to Vigilante Road	37,000	27,500	0.74	C
South of Vigilante Road	37,000	24,300	0.66	B
Scripps Poway Parkway				
West of SR-67	37,000	19,980	0.54	A
Vigilante Road				
East of SR-67	16,200	2,030	0.13	B

⁽¹⁾ Capacities based on County of San Diego Roadway Classification Table.
Source: LLG, 2007

3.16.1.2 Regulatory Setting

Caltrans is responsible for enhancement and maintenance of state highways and interstate freeways. Any construction within state right-of-way requires an encroachment permit from Caltrans. Caltrans also provides review and comment of project proposals affecting facilities in their jurisdiction, such as SR-67 for the Proposed Action.

3.16.2 Project Design Features

General Conditions and Standard Specifications that will be included in the project construction documents to reduce traffic/circulation impacts associated with construction of the Proposed Action are summarized in Section 1.9.8 (Introduction, Traffic/Circulation) of this EIR/EIS. In addition, the Proposed Action would include design features to minimize traffic/circulation impacts. These design and construction features could include, but would not be limited to, the following:

- Prior to construction, the contractor will prepare a detailed Traffic Control Plan for review by the Water Authority and approval by Caltrans. The plan will be prepared in accordance with the latest edition of the Federal Highway Administration Manual of Uniform Traffic Control Devices, as modified by the most recent California Supplement.

3.16.3 Direct and Indirect Effects

3.16.3.1 Thresholds of Significance

The standards of significance in this analysis are based upon the current practice of the appropriate regulatory agencies. Thresholds used to evaluate potential traffic/circulation impacts are based on applicable criteria in State CEQA Guidelines (CCR §§15000-15387), Appendix G; and the San Diego Traffic Engineers' Council (SANTEC) Guidelines. A significant traffic/circulation impact would occur if the Proposed Action would:

1. Significantly worsen congestion at any intersection that is currently operating, or is projected to operate at, LOS E or F, by adding two seconds or more to the delays experienced by motorists at intersections.
2. Cause any roadway segment to be reduced to LOS E or F, or increase the volume-to-capacity ratio by 0.02 or more at any roadway segment currently operating at LOS E or F.
3. Result in delays in emergency vehicle response times or require emergency vehicles to use alternate routes during emergency situations.
4. Result in construction activities within or adjacent to roadway rights-of-way, thereby creating increased risk of motor vehicle accidents and/or pedestrian injury.

3.16.3.2 Impact Analysis

Methodology

This traffic analysis is based on the peak construction period for the Proposed Action, which is projected to be the Year 2010, according to the construction schedule identified in the *Engineering Summary Report* for the Proposed Action (GEI, 2007c). Once the reservoir is fully operational, routine maintenance and operation of the reservoir, and recreational use at the site, are expected to generate minimal traffic volumes. Operational and maintenance activities would include monitoring reservoir levels and outlet and spillway discharges, monitoring dam instrumentation, maintaining appropriate records, and maintaining mechanical and electrical equipment according to the equipment manufacturers' requirements. All of these activities would result in negligible worker trips to the reservoir. In addition, the Proposed Action would include a larger reservoir and an expanded/relocated marina, which would result in a negligible increase in recreational users and visitor trips, compared to current conditions. During peak summer months, the maximum daily recreational trips could increase from an estimated 225 ADT for the existing marina to up to 360 ADT for the new marina (Weber, 2007). Routine maintenance and operational activities at the dam and reservoir, and increased use of the marina and reservoir, would result in a negligible increase in traffic at build-out. Therefore, operational traffic volumes were not evaluated for the Proposed Action.

Analysis of the "Baseline-plus-SV 100K Construction Traffic" scenarios for the off-site quarry option and on-site quarry options consists of estimating the construction traffic associated with the Proposed Action and assigning that traffic to the surrounding circulation network. To account for cumulative traffic volumes during the construction period for the Proposed Action (between years 2006 and 2010), a growth rate of eight percent was added to the existing traffic. The resultant AM and PM peak-hour traffic volumes are used to determine operating conditions. The resultant conditions are compared to baseline conditions in accordance with the above thresholds to determine the significance of construction-related traffic impacts of the Proposed Action.

Construction Traffic Trip Generation

Table 3.16-7 summarizes the calculated number of average daily traffic trips during the peak construction period for both the on- and off-site quarry options for the Proposed Action. Construction traffic would include trucks bringing equipment (e.g., bulldozers, cranes, etc.), cement, fly ash, and aggregate (under the off-site quarry option only) to the SV 100K construction site, as well as construction crew traffic. The trip generations for the following aggregate provision options were calculated separately:

- *Off-Site Quarry Option:* Aggregate and cement to produce conventional concrete and roller-compacted concrete (RCC) would be brought to the site by truck. Conventional concrete and RCC batch plants would be set up near the base of the existing San Vicente Dam.
- *On-Site Quarry Option:* Aggregate would be produced at new on-site quarrying operations. Other materials would be brought in, as with the off-site option.

Table 3.16-7. Construction Traffic Generation

Use	Trucks Trips	Total ADT in PCE ⁽¹⁾	AM Peak Hour				PM Peak Hour					
			% of ADT	In:Out		Volume		% of ADT	In:Out		Volume	
				Split	In	Out	Split		In	Out		
Trip Generation Summary (Trucks only)												
Off-Site Quarry Option	551	1102	10%	80%	20%	88	22	10%	30%	70%	33	77
On-Site Quarry Option	160	320	10%	80%	20%	26	6	10%	30%	70%	10	22
Trip Generation Summary (Crew Vehicles Only)												
Off-Site Quarry Option	894	894	30%	80%	20%	215	54	30%	30%	70%	80	188
On-Site Quarry Option	916	916	30%	80%	20%	220	55	30%	30%	70%	82	192
Trip Generation Summary (Total)												
Off-Site Quarry Option	1445	1996				303	76				113	265
On-Site Quarry Option	1076	1236				246	61				92	214

⁽¹⁾ PCE = Passenger Car Equivalent factor
Source: LLG, 2007

The trip generation for trucks was based on the estimated construction equipment schedule, and trip generation for crew vehicles was based on the estimated manpower tables, both contained in the *Engineering Summary Report* for the Proposed Action (GEI, 2007c). Several potential construction phases were identified in the *Engineering Summary Report* for the Proposed Action (GEI, 2007c), and trip generation values for each construction phase were calculated. Traffic volumes of simultaneous construction phases were combined.

To identify the peak construction scenario and evaluate the maximum impact of SV 100K construction traffic, the construction phase with the highest total traffic was analyzed for both aggregate provision options. In the off-site quarry option, the construction phase with trucks bringing aggregate to the site was considered to have the highest traffic. Because the on-site

quarry option does not require trucks to haul aggregate, the construction phase with trucks bringing equipment to the site was assumed for the highest traffic phase. Table 3.16-7 summarizes the trip generation for the peak construction phase for each option. Figures that show the traffic distribution are presented in Appendix G to this EIR/EIS.

A Passenger Car Equivalent (PCE) factor was applied to the generated truck trips. PCE is defined as the number of passenger cars that are displaced by a single heavy vehicle of a particular type under the prevailing traffic conditions. Heavy vehicles have a greater traffic impact than passenger cars because: (1) they are larger than passenger cars, and, therefore, occupy more roadway space; and (2) their performance characteristics are generally inferior to passenger cars, leading to the formation of downstream gaps in the traffic stream (especially on upgrades), which cannot always be effectively filled by normal passing maneuvers. Based on the elevation changes in the vicinity of the Proposed Action, a PCE of 2.0 was applied to each truck trip.

Construction Traffic Trip Distribution/Assignment

The construction traffic generated by the Proposed Action was distributed to the circulation system based on several factors such as potential truck routes, population centers (for crew trips), and the proximity of the material providers. All of the cement and fly ash to be trucked to the SV 100K construction site was assumed to be hauled from the north of San Vicente Reservoir via southbound SR-67. Similarly, all aggregate was assumed to be hauled from distant off-site sources to the south of the reservoir via northbound SR-67. Figures that show the traffic distribution are presented in Appendix G to this EIR/EIS.

Future Baseline Conditions (Year 2010 without SV 100K Construction Traffic)

As shown in Table 3.16-8, except the following, all intersections in Year 2010 are calculated to operate at LOS D or better during both the AM and PM peak hours:

- SR-67/Vigilante Road (westbound left-turn movement would operate at LOS F during both AM and PM peak hour);
- SR-67/San Vicente Avenue (eastbound movement would operate at LOS F during the AM peak hour and LOS E during the PM peak hour); and
- SR-67/Willow Road (LOS F during the AM peak hour and LOS E during PM peak hour).

As discussed under the analysis of Threshold 2, all Year 2010 street segments (without SV 100K Construction Traffic) are calculated to operate at LOS C or better.

Analysis

Threshold 1: Significantly worsen congestion at any intersection that is currently operating, or is projected to operate at, LOS E or F, by adding two seconds or more to the delays experienced by motorists at intersections

Off-Site Quarry Option

Table 3.16-8 summarizes the results of the off-site quarry analysis for intersection operations. Except for the following, all intersections are calculated to operate at LOS D or better during both the AM and PM peak hours:

- SR-67/Vigilante Road (westbound left-turn movement would operate at LOS F during both AM and PM peak hour);
- SR-67/San Vicente Avenue (eastbound movement would operate at LOS F during both AM and PM peak hour, and westbound movement would operate at LOS E during the AM peak hour); and
- SR-67/Willow Road (LOS F during both AM and PM peak hour).

Under the off-site quarry option, construction-related traffic from the Proposed Action would substantially increase delays at the above intersections that are projected to operate at LOS E or F in Year 2010 without SV 100K (although westbound movements at the SR-67/San Vicente Avenue intersection are projected to operate at LOS D in the AM peak hour and LOS C in the PM peak hour in Year 2010 without SV 100K). However, construction-related traffic from the Proposed Action would not add to the critical movements at the unsignalized SR-67/San Vicente Avenue intersection because haul trucks are not allowed on this unpaved road. Therefore, under the off-site quarry option, the construction-related traffic congestion impacts at the SR-67/Vigilante Road and SR-67/Willow Road intersections would be significant, and the construction-related traffic congestion impact at the SR-67/San Vicente Avenue intersection would be less than significant.

On-Site Quarry Options

Table 3.16-9 summarizes the results of the on-site quarry option analysis for existing intersections. Except for the following, all intersections are calculated to operate at LOS D or better during both the AM and PM peak hours:

- SR-67/Vigilante Road (westbound left-turn movement would operate at LOS F during both AM and PM peak hour)
- SR-67/San Vicente Avenue (eastbound movement would operate at LOS F during both AM and PM peak hour, and westbound movement would operate at LOS E during the AM peak hour); and
- SR-67/Willow Road (LOS F during both AM and PM peak hour).

Table 3.16-8. Intersection Operations – Off-Site Quarry Option

Intersection	Peak Period	Existing		Year 2010 Without SV 100K		Year 2010 + SV 100K				Significant Impact
		Delay ⁽¹⁾	LOS	Delay	LOS	Delay	LOS	Delay Δ ⁽²⁾	Critical Move Trips	
Pomerado Road/Scripps Poway Parkway [Signalized]	AM	24.5	C	25.4	C	25.9	C	0.5	N/A	No
	PM	29.5	C	31.4	C	31.8	C	0.4	N/A	No
SR-67/Poway Road [Signalized]	AM	17.8	B	18.7	B	18.8	B	0.1	N/A	No
	PM	18.0	B	18.5	B	18.5	B	0.0	N/A	No
SR-67/Scripps Poway Parkway [Signalized]	AM	24.6	C	30.1	C	30.5	C	0.4	N/A	No
	PM	27.3	C	33.3	C	37.8	D	4.5	N/A	No
SR-67/Vigilante Road [TWSC-WBL] ⁽³⁾	AM	93.0	F	>100	F	>100	F	>10	36	Yes
	PM	>100	F	>100	F	>100	F	>10	127	Yes
SR-67/San Vicente Avenue [TWSC-EB/WB]	AM	>100/28.0	F/D	>100/31.9	F/D	>100/38.4	F/E	>10	0	No
	PM	40.5/15.0	E/C	49.1/16.0	E/C	60.2/16.9	F/C	9.7	0	No
SR-67/Willow Road [Signalized]	AM	70.2	E	96.4	F	>100	F	>10	N/A	Yes
	PM	50.6	D	74.6	E	93.8	F	19.2	N/A	Yes
Vigilante Road/Moreno Avenue [TWSC-SB]	AM	9.8	A	9.9	A	11.8	B	1.9	N/A	No
	PM	10.1	B	10.3	B	11.4	B	1.1	N/A	No

⁽¹⁾ Average delay expressed in seconds per vehicle.

⁽²⁾ Change in delay measured in seconds.

⁽³⁾ TWSC – Two-Way Stop Controlled intersection. Minor street left turn delay is reported. WBL=Westbound Left-turn; EB=Eastbound; WB=Westbound; SB=Southbound.

Source: LLG, 2007

Table 3.16-9. Intersection Operations – On-Site Quarry Options

Intersection	Peak Period	Existing		Year 2010 Without SV 100K		Year 2010 + SV 100K				Significant Impact
		Delay ⁽¹⁾	LOS	Delay	LOS	Delay	LOS	Delay Δ ⁽²⁾	Critical Move Trips	
Pomerado Road/Scripps Poway Parkway [Signalized]	AM	24.5	C	25.4	C	25.9	C	0.5	N/A	No
	PM	29.5	C	31.4	C	31.9	C	0.5		No
SR-67/Poway Road [Signalized]	AM	17.8	B	18.7	B	18.8	B	0.1	N/A	No
	PM	18.0	B	18.5	B	18.5	B	0.0		No
SR-67/Scripps Poway Parkway [Signalized]	AM	24.6	C	30.1	C	30.5	C	0.4	N/A	No
	PM	27.3	C	33.3	C	37.9	D	4.6		No
SR-67/Vigilante Road [TWSC-WBL] ⁽³⁾	AM	93.0	F	>100	F	>100	F	>10	20	Yes
	PM	>100	F	>100	F	>100	F	>10	71	Yes
SR-67/San Vicente Avenue [TWSC-EB/WB]	AM	>100/28.0	F/D	>100/31.9	F/D	>100/35.4	F/E	>10	0	No
	PM	40.5/15.0	E/C	49.1/16.0	E/C	54.9/16.5	F/C	5.8	0	No
SR-67/Willow Road [Signalized]	AM	70.2	E	96.4	F	>100	F	>10	N/A	Yes
	PM	50.6	D	74.6	E	84.9	F	10.3	N/A	Yes
Vigilante Road/Moreno Avenue [TWSC-SB]	AM	9.8	A	9.9	A	11.3	B	1.4	N/A	No
	PM	10.1	B	10.3	B	10.8	B	0.5		No

⁽¹⁾ Average delay expressed in seconds per vehicle.

⁽²⁾ Change in delay measured in seconds.

⁽³⁾ TWSC – Two-Way Stop Controlled intersection. Minor street left turn delay is reported. WBL=Westbound Left-turn; EB=Eastbound; WB=Westbound; SB=Southbound.

Source: LLG, 2007

Under the on-site quarry option, construction-related traffic from the Proposed Action would substantially increase delays at the three intersections listed above, which are projected to operate at LOS E or F in Year 2010 without SV 100K (although westbound movements at the SR-67/San Vicente Avenue intersection are projected to operate at LOS D in the AM peak hour and LOS C in the PM peak hour in Year 2010 without SV 100K). However, construction-related traffic from the Proposed Action would not add to the critical movements at the unsignalized SR-67/San Vicente Avenue intersection because haul trucks are not allowed on this unpaved road. Therefore, under the on-site quarry options, the construction-related traffic congestion impacts at the SR-67/Vigilante Road and SR-67/Willow Road intersections would be significant, and the construction-related traffic congestion impact at the SR-67/San Vicente Avenue intersection would be less than significant.

*Under both the off-site quarry option and the on-site quarry options, construction-related traffic from the Proposed Action would significantly worsen congestion at the SR-67/Vigilante Road intersection (**Impact SV/TC 1**) and at the SR-67/Willow Road intersection (**Impact SV/TC 2**). Therefore, impacts of the Proposed Action would be significant.*

Under both the off-site quarry option and the on-site quarry options, construction-related traffic from the Proposed Action would not add to the critical movements at the SR-67/San Vicente Avenue intersection, for which other movements are projected to operate at LOS E or F. Therefore, impacts of the Proposed Action would be less than significant.

Threshold 2: Cause any roadway segment to be reduced to LOS E or F, or increase the volume-to-capacity ratio by 0.02 or more at any roadway segment currently operating at LOS E or F

Off-Site Quarry Option

Table 3.16-10 summarizes the results of the off-site quarry analysis for segment operations. All roadway segments are calculated to operate at LOS D or better with SV 100K construction traffic. Therefore, under the off-site quarry option, the contribution of construction-related traffic on roadway segments in the vicinity would be less than significant.

On-Site Quarry Options

Table 3.16-11 summarizes the results of the on-site quarry option analysis for segment operations. All roadway segments are calculated to operate at LOS D or better with SV 100K construction traffic. Therefore, under the on-site quarry options, the contribution of construction-related traffic on roadway segments in the vicinity would be less than significant.

The Proposed Action would not cause any roadway segment to operate at LOS E or F. Therefore, impacts of the Proposed Action would be less than significant.

Table 3.16-10. Street Segment Operations – Off-Site Quarry Option

Segment	Capacity ⁽¹⁾ LOS E	Existing			Year 2010 Without SV 100K			Year 2010 + SV 100K			Significant Impact
		ADT	V/C	LOS	ADT	V/C	LOS	ADT	V/C	LOS	
SR-67											
Poway Road to Scripps Poway Parkway	37,000	22,240	0.60	B	24,020	0.65	B	24,270	0.66	B	No
Scripps Poway Parkway to Vigilante Road	37,000	27,540	0.74	C	29,740	0.80	D	30,480	0.82	D	No
South of Vigilante Road	37,000	24,480	0.66	B	26,440	0.71	C	27,680	0.75	C	No
Scripps Poway Parkway											
West of SR-67	37,000	20,380	0.55	A	22,010	0.59	A	22,500	0.61	B	No
Vigilante Road											
East of SR-67	16,200	2,070	0.13	B	2,240	0.14	B	4,220	0.26	C	No

⁽¹⁾ Capacities based on County of San Diego Roadway Classification Table.

Table 3.16-11. Street Segment Operations – On-Site Quarry Options

Segment	Capacity ⁽¹⁾ LOS E	Existing			Year 2010 Without SV 100K			Year 2010 + SV 100K			Significant Impact
		ADT	V/C	LOS	ADT	V/C	LOS	ADT	V/C	LOS	
SR-67											
Poway Road to Scripps Poway Parkway	37,000	22,240	0.60	B	24,020	0.65	B	24,290	0.66	B	No
Scripps Poway Parkway to Vigilante Road	37,000	27,540	0.74	C	29,740	0.80	D	30,540	0.83	D	No
South of Vigilante Road	37,000	24,480	0.66	B	26,440	0.71	C	26,850	0.73	C	No
Scripps Poway Parkway											
West of SR-67	37,000	20,380	0.55	A	22,010	0.59	A	22,540	0.61	B	No
Vigilante Road											
East of SR-67	16,200	2,070	0.13	B	2,240	0.14	B	3,460	0.21	B	No

⁽¹⁾ Capacities based on County of San Diego Roadway Classification Table.

Threshold 3: Result in delays in emergency vehicle response times or require emergency vehicles to use alternate routes during emergency situations

The following analysis of potential delays in emergency vehicle response times or rerouting of emergency vehicles due to construction activities associated with the Proposed Action applies to both the off-site quarry option and the on-site quarry options.

The SV 100K dam construction zone is within City of San Diego property downstream of the dam, and is situated away from public roads. Construction activities in the dam construction zone would not result in delays in emergency vehicle response times, or require emergency vehicles to use alternate routes during emergency situations, along public roadways in the vicinity. Therefore, impacts of the Proposed Action would be less than significant.

The addition of slow-moving construction traffic from the Proposed Action along SR-67, Vigilante Road, and Moreno Avenue could result in an overall slowing of traffic on these segments. However, as evaluated in Section 3.14 (Public Services for the Proposed Action) of this EIR/EIS, all vehicles on the road are required to yield to approaching emergency response vehicles when they are operating sirens and/or flashing emergency lights. Any decreases in travel speeds on vicinity roadways resulting from slow-moving construction traffic associated with the Proposed Action would not cause a delay in emergency vehicle response times. Therefore, impacts of the Proposed Action would be less than significant.

Under both the off-site quarry option and the on-site quarry options, construction-related traffic associated with the Proposed Action would not result in delays in emergency vehicle response times, or require emergency vehicles to use alternate routes during emergency situations. Therefore, impacts of the Proposed Action would be less than significant.

Threshold 4: Result in construction activities within or adjacent to roadway rights-of-way, thereby creating increased risk of motor vehicle accidents and/or pedestrian injury

The following analysis of potential increased risk of motor vehicle accidents and pedestrian injuries due to construction activities associated with the Proposed Action applies to both the off-site quarry option and the on-site quarry options.

Construction traffic, such as heavy trucks, entering and leaving the SV 100K dam construction zone could create an on-site safety hazard for other vehicles, bicycles, and pedestrians, if the public were allowed access through this area (e.g., to reach the San Vicente Marina). However, the marina and access road would be closed to the public during the construction period. Therefore, there would be no potential for increased risk of motor vehicle accidents and pedestrian injuries due to construction activities adjacent to the Vigilante Road and Moreno Avenue rights-of-way, and impacts would not occur.

According to Caltrans, the portion of SR-67 near San Vicente Reservoir has a high accident rate due to conflicts between cross traffic in the vicinity of the unsignalized Vigilante Road intersection, which is located at the bottom of a steep downgrade, and southbound traffic on SR-67 traveling at high speeds. This situation would be exacerbated during construction of the Proposed Action due to the addition of construction-related traffic on SR-67, both north and south of Vigilante Road (Tables 3.16-10 and 3.16-11). Therefore, the potential for increased risk of motor vehicle accidents and pedestrian injuries due to construction-related traffic on this portion of SR-67 would be significant.

Because the marina and access road would be closed to the public during the construction period for the Proposed Action, there would be no potential for increased risk of motor vehicle accidents and pedestrian injuries on site and along the adjacent rights-of-way for Vigilante Road and Moreno Avenue. Therefore, there would be no impacts of the Proposed Action.

Under both the off-site quarry option and the on-site quarry options, the Proposed Action would contribute construction-related traffic that could result in a potential for increased risk of motor

vehicle accidents and pedestrian injuries along SR-67 in the vicinity of the unsignalized Vigilante Road intersection. Therefore, impacts of the Proposed Action would be significant (Impact SV/TC 3).

3.16.3.3 Mitigation Measures

The significant construction-related traffic congestion impacts at the SR-67/Vigilante Road intersection (*Impact SV/TC 1*) and at the SR-67/Willow Road intersection (*Impact SV/TC 2*) due to the Proposed Action, under both the off-site quarry option and the on-site quarry options, could be avoided by prohibiting haul trucks and crew vehicles from accessing the construction site during both AM and PM peak hours. However, this is not a feasible mitigation measure because hauling, materials deliveries, and crew access must occur on a continuous basis to support the 24 hours per day, 7 days per week operations associated with RCC dam construction. Several additional mitigation scenarios were examined specific to each intersection; however, as explained below, none were determined to be feasible or practicable.

SR-67/Vigilante Road

Under both the off-site quarry option and the on-site quarry options, the significant construction-related traffic congestion impact at the SR-67/Vigilante Road intersection (*Impact SV/TC 1*) could be mitigated by installing a traffic signal and extending the southbound left-turn pocket on SR-67 by 150 feet. However, based on discussions with Caltrans staff, the agency would not likely support the installation of a traffic signal at this intersection. Therefore, this measure is not considered feasible.

Additional mitigation scenarios for this intersection were considered, such as rerouting truck and crew traffic to the SR-67/Willow Road intersection; however, this would substantially increase trip lengths and result in delays for haul trucks traveling southbound on SR-67 from locations north of the site. As such, there are no other feasible measures to mitigate the significant construction-related traffic congestion impact at the SR-67/Vigilante Road intersection (*Impact SV/TC 1*) due to the high volume of daily haul trucks estimated throughout the construction period (Table 3.16-7). Therefore, the construction-related traffic congestion impact at this intersection under both the off-site quarry option and on-site quarry options would be significant and unmitigable.

SR-67/Willow Road

Under both the off-site quarry option and the on-site quarry options, the significant construction-related traffic congestion impact at the SR-67/Willow Road intersection (*Impact SV/TC 2*) could be mitigated via signal retiming, lane reconfigurations or “fair-share” funding of unidentified improvements. Retiming the signals at this intersection is not a viable mitigation scenario because substantial delays already exist for all movements, and it is important to minimize congestion on the SR-67 through movements.

Lane reconfigurations, additions and widening were considered for the SR-67 southbound approach to allow adequate capacity and “green” signal time for trucks making left turns. However, the narrow right-of-way in this area precludes such improvements; a cut slope exists on the west side, and a convenience store is located on the east side of SR-67 at this intersection. Another mitigation scenario involves the addition of a Left Turn Only lane on the westbound Willow Road approach. There appears to be sufficient right-of-way on the south side of Willow Road to accommodate an additional left-turn lane. A dedicated left-turn lane on the westbound Willow Road approach would decrease the overall “green” signal time needed to serve Willow Road, which, in turn, would allow for an increase in “green” signal time for southbound SR-67 movements. Although this mitigation scenario was identified as the most feasible to implement at this intersection, it is not considered practicable given that this significant traffic impact from the Proposed Action would only occur during the construction period, and the Proposed Action would not have any impact at this intersection after completion of construction.

Contributing a “fair-share” payment to Caltrans towards the future improvement at this intersection was also considered as a possible mitigation scenario. However, Caltrans does not have a mechanism to accept a “fair-share” contribution, and therefore, this scenario was also rejected. There are no other feasible measures to mitigate this impact. Therefore, the construction-related traffic congestion impacts at the SR-67/Willow Road intersection, under both the off-site quarry option and the on-site quarry options, would be significant and unmitigable.

The potential for increased risk of motor vehicle accidents and pedestrian injuries on SR-67 due to the addition of construction-related traffic from the Proposed Action (*Impact SV/TC 3*), under both the off-site quarry option and the on-site quarry options, could be mitigated by installing a traffic signal at SR-67/Vigilante Road intersection and extending the southbound left turn pocket on SR-67 by 150 feet. However, as stated above, Caltrans has indicated they would not support the installation of a traffic signal at this intersection. The Water Authority will coordinate with Caltrans to identify other measures to slow traffic on this segment of SR-67, such as installing rumble strips or flashing signs to warn of slow trucks making left turns at this intersection, but there are no feasible measures to completely mitigate this impact. Therefore, the construction-related traffic safety impacts of the Proposed Action would be significant and unmitigable, under both the off-site quarry option and the on-site quarry options.

3.16.3.4 Residual Impacts after Mitigation

Under both the off-site quarry option and on-site quarry options, the significant impacts associated with construction-related traffic congestion at the SR-67/Vigilante Road intersection (*Impact SV/TC 1*) and SR-67/Willow Road intersection (*Impact SV/TC 2*), and the significant impact associated with an increased risk of accidents on SR-67 due to construction-related traffic from the Proposed Action (*Impact SV/TC 3*), would be unmitigable because all mitigation scenarios analyzed were determined to be infeasible or not practicable. These significant impacts would cease upon the completion of construction. A Statement of Overriding Considerations would be required for the Proposed Action.

3.16.4 Cumulative Effects

3.16.4.1 Other CIP Projects

The PEIR for the Regional Water Facilities Master Plan concluded that construction of CIP facilities, such as Slaughterhouse Terminal Reservoir, could result in direct increases in traffic levels (i.e., existing LOS to levels of D or lower), delays, or hazards. In addition, construction activities would contribute cumulatively to an overall increase in traffic volumes on a localized and temporary basis only. Assuming the Slaughterhouse Terminal Reservoir would be constructed concurrently with the Proposed Action, the construction-related traffic volumes associated with this CIP project would affect the same segments and intersections on SR-67 as evaluated for the Proposed Action. The direct and cumulative construction-related traffic impacts associated with the CIP projects were determined to be less than significant with implementation of specific mitigation measures identified in the Master Plan PEIR. The above conclusions regarding cumulative traffic impacts for the Slaughterhouse Terminal Reservoir CIP project are incorporated into the cumulative traffic analyses in Section 3.16.4.3 below.

3.16.4.2 ESP Projects

Operations and maintenance activities associated with the San Vicente Pump Station Facility would generate minimal trips, and, therefore, would not have cumulatively considerable contributions to significant construction-related traffic congestion impacts in conjunction with the Proposed Action. However, construction-related traffic associated with the San Vicente Pipeline tunnel portal, in conjunction with the Proposed Action, would add to cumulatively significant traffic congestion impacts at the facilities identified in Section 3.16.3 above. The above conclusions regarding cumulative traffic impacts for the listed ESP projects are incorporated into the cumulative traffic analyses in Section 3.16.4.3 below.

3.16.4.3 Other Planned Projects with CIP and ESP Projects

This section evaluates the cumulative traffic impacts of the Proposed Action when considered in conjunction with the other planned projects listed in Table 3.2-1, and incorporates the cumulative traffic impacts associated with the CIP and ESP projects described in the above sections. The following cumulative traffic analysis addresses each of the four significance thresholds listed in Section 3.16.3 above.

Cumulative Threshold 1: Significantly worsen congestion at any intersection that is currently operating, or is projected to operate at, LOS E or F, by adding two seconds or more to the delays experienced by motorists at intersections

Based on the cumulative projects listed in Table 3.2-1, the surrounding active extraction projects (i.e., Baxter Major Use Permit (MUP 89-033-03) and Enniss Sand Mine (Permit 87-075-01)) and development projects for Schmidt and Lakeside Ranch, if construction times coincide, have the greatest potential to add cumulatively to the Proposed Action's traffic congestion impacts at the SR-67/Vigilante Road and SR-67/Willow Road intersections, under both the off-site quarry

option and the on-site quarry options. However, because it is not possible to predict with certainty how many trips from these projects would be assigned to the surrounding circulation system coincident with SV 100K construction traffic, a growth factor of eight percent (approximately two percent growth per year for four years) was added to existing traffic counts to represent future baseline Year 2010 conditions. As such, cumulative projects have already been factored into the traffic analysis in Section 3.16.3.2 above. Therefore, the cumulative contribution of SV 100K construction traffic at the affected SR-67/Vigilante Road (***Impact SV/TC 1C***) and SR-67/Willow Road (***Impact SV/TC 2C***) intersections, under both the off-site quarry option and on-site quarry options, when combined with traffic volumes from the CIP, ESP, and other planned cumulative projects listed in Table 3.2-1, would be significant.

Construction-related traffic from the Proposed Action would not add to the critical movements at the unsignalized SR-67/San Vicente Avenue intersection because haul trucks are not allowed on this unpaved road. Therefore, the cumulative contribution of SV 100K construction traffic at the affected SR-67/San Vicente Avenue intersection, under both the off-site quarry option and on-site quarry options, when combined with traffic volumes from the CIP, ESP, and other planned cumulative projects listed in Table 3.2-1, would be less than significant.

Cumulative Threshold 2: Cause any roadway segment to be reduced to LOS E or F, or increase the volume-to-capacity ratio by 0.02 or more at any roadway segment currently operating at LOS E or F

As explained in the Cumulative Threshold 1 impact, cumulative projects have already been factored into the traffic analysis in Section 3.16.3.2 above. As shown in Tables 3.16-10 and 3.16-11, no roadway segments are projected to operate below LOS D in Year 2010 with and without the construction traffic volumes associated with the Proposed Action and cumulative projects. Therefore, the cumulative contribution of SV 100K construction traffic on vicinity roadways, under both the off-site quarry option and on-site quarry options, when combined with traffic volumes from the CIP, ESP, and other planned cumulative projects listed in Table 3.2-1, would be less than significant.

Cumulative Threshold 3: Result in delays in emergency vehicle response times or require emergency vehicles to use alternate routes during emergency situations

The addition of slow-moving construction traffic from the Proposed Action and from the CIP, ESP, and other planned cumulative projects listed in Table 3.2-1 could result in an overall slowing of traffic on vicinity roadway segments. However, as evaluated in Section 3.14 (Public Services for the Proposed Action) of this EIR/EIS, all vehicles on the road are required to yield to approaching emergency response vehicles when they are operating sirens and/or flashing emergency lights. Therefore, any decreases in travel speeds on vicinity roadways resulting from slow-moving construction traffic associated with the Proposed Action, under both the off-site quarry option and on-site quarry options, when combined with traffic volumes from the CIP, ESP, and other planned cumulative projects listed in Table 3.2-1, would not cause a delay in emergency vehicle response times and associated cumulative impacts would be less than significant.

Cumulative Threshold 4: Result in construction activities within or adjacent to roadway rights-of-way, thereby creating increased risk of motor vehicle accidents and/or pedestrian injury

The potential for accidents on SR-67 in the vicinity of the unsignalized Vigilante Road intersection would be exacerbated by the addition of construction-related traffic volumes from the Proposed Action and from the CIP, ESP, and other planned cumulative projects listed in Table 3.2-1. Therefore, the potential for increased risk of motor vehicle accidents and pedestrian injuries on this portion of SR-67 due to construction-related traffic associated with the Proposed Action, under both the off-site quarry option and on-site quarry options, when combined with traffic volumes from the CIP, ESP, and other planned cumulative projects listed in Table 3.2-1, would be cumulatively significant (***Impact SV/TC 3C***).

Under both the off-site quarry option and the on-site quarry options, construction-related traffic from the Proposed Action would not add to the critical movements at the SR-67/San Vicente Avenue intersection, for which other movements are projected to operate at LOS E or F; would not cause any roadway segment to operate at LOS E or F; and would not result in delays in emergency vehicle response times, or require emergency vehicles to use alternate routes during emergency situations. Therefore, cumulative impacts due to the Proposed Action for these activities, when combined with the construction-related and operational traffic volumes associated with the Slaughterhouse Terminal Reservoir (CIP), San Vicente Pipeline (ESP), and other planned cumulative projects listed in Table 3.2-1, would be less than significant.

*Under both the off-site quarry option and the on-site quarry options, the Proposed Action would result in significant project-specific traffic congestion impacts at the SR-67/Vigilante Road intersection (***Impact SV/TC 1C***) and the SR-67/Willow Road intersection (***Impact SV/TC 2C***) during construction, both of which are projected to operate at LOS E or F in Year 2010, by adding two seconds or more to the delays at these intersections. Under both the off-site quarry option and the on-site quarry options, the Proposed Action would contribute construction-related traffic that could result in a potential for increased risk of motor vehicle accidents and pedestrian injuries along SR-67 in the vicinity of the unsignalized Vigilante Road intersection (***Impact SC/TC 3C***). These impacts were determined to be unmitigable. Therefore, the construction-related cumulative traffic impacts of the Proposed Action, when combined with the construction-related and operational traffic volumes associated with the Slaughterhouse Terminal Reservoir (CIP), San Vicente Pipeline (ESP.) and other planned cumulative projects listed in Table 3.2-1, would be significant for the duration of construction (***Impacts SV/TC 1C, SV/TC 2C, and SV/TC 3C***). No feasible measures are available to mitigate the cumulative construction traffic impacts of the Proposed Action. However, these cumulative impacts would cease upon completion of construction. A Statement of Overriding Considerations would be necessary for project approval.*