5.16 Traffic/Circulation

This section evaluates the potential impacts of the SV 50K/Moosa 50K Alternative on traffic and circulation. The evaluation includes an assessment of the direct, indirect, short-term, long-term and cumulative effects of the SV 50K/Moosa 50K Alternative 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.

5.16.1 Affected Environment

The SV 50K study area would be a subset of the larger SV 100K study area, and the Moosa 50K study area would be a subset of the larger Moosa 100K study area. Therefore, the following discussion refers to Section 3.16.1 (Traffic/Circulation for the Proposed Action) of this EIR/EIS and Section 4.16.1 (Traffic/Circulation for the Moosa 100K Alternative) of this EIR/EIS for information on the Affected Environment as it applies to the SV 50K/Moosa 50K Alternative. For more general environmental setting information for the SV 50K/Moosa 50K Alternative, please refer to Section 5.1 of this EIR/EIS.

5.16.1.1 Environmental Setting

The SV 50K/Moosa 50K Alternative would construct a smaller dam raise at the existing San Vicente Dam and a new, smaller dam in Moosa Valley encompassing Turner Lake. Section 2.3.3 (Alternatives Analyzed) of this EIR/EIS describes the improvements included with the SV 50K/Moosa 50K Alternative. In general, the environmental setting for the SV 50K component of the SV 50K/Moosa 50K Alternative would be the same as described in Section 3.16.1.1 (Traffic/Circulation for the Proposed Action), and the setting for the Moosa 50K component would be the same as described in Section 4.16.1.1 (Traffic/Circulation for the Moosa 100K Alternative) of this EIR/EIS. Please refer to those sections for the general environmental setting information for the SV 50K/Moosa 50K Alternative. Major differences between this alternative and the larger Proposed Action and Moosa 100K carryover storage alternatives are that there would be less land and/or structures inundated by water, smaller improvements at both footprints, and less disturbance from excavation for quarry operations due to the smaller dam improvements.

5.16.1.2 Regulatory Setting

Both the SV 50K and Moosa 50K components of this alternative would be located in San Diego County; therefore, the Caltrans responsibilities described for the Proposed Action and the Moosa 100K Alternative would apply to this alternative. Please refer to Sections 3.16.1.2 4.16.1.2 of this EIR/EIS for a discussion of the regulatory context that applies to both the SV 50K and Moosa 50K components of this alternative.

5.16.2 Project Design Features

General Conditions and Standard Specifications that will be included in the project construction documents to reduce traffic/circulation impacts associated with the SV 50K/Moosa 50K Alternative are summarized in Sections 1.9.8 (Introduction, Traffic/Circulation) of this EIR/EIS. The SV 50K/Moosa 50K Alternative would incorporate the same project design features to minimize impacts to traffic/circulation as those described in Section 3.16.2 (Traffic/Circulation for the Proposed Action) of this EIR/EIS.

5.16.3 Direct and Indirect Effects

5.16.3.1 Thresholds of Significance

The thresholds of significance used to evaluate potential traffic and circulation impacts for the SV 50K/Moosa 50K Alternative are the same as those used to evaluate impacts for the Proposed Action and the Moosa 100K Alternative. The thresholds are based on applicable criteria in the 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 50K/Moosa 50K Alternative 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.

5.16.3.2 Impact Analysis

Methodology

Refer to Section 3.16.3.2 (Traffic/Circulation for the Proposed Action) of this EIR/EIS and Section 4.16.3.2 (Traffic/Circulation for the Moosa 100K Alternative) of this EIR/EIS for a discussion of the methodology used to evaluate construction and long-term (operational and recreational) traffic impacts associated with the Proposed Action and Moosa 100K Alternative, respectively, that also applies to the SV 50K and Moosa 50K components of this alternative.

SV 50K Construction Traffic Trip Generation/Distribution/Assignment

Table 5.16-1 summarizes the calculated number of average daily traffic trips during the peak construction period for both the on-site quarry options and off-site quarry option for the SV 50K component. The trip generation for the trucks was based on the estimated construction equipment schedule in Appendix G to this EIR/EIS. Refer to Section 3.16.3.2 (Traffic/Circulation for the Proposed Action) of this EIR/EIS for a discussion of the methodology used to determine construction traffic generation, distribution and assignment associated with the Proposed Action that also applies to the SV 50K component of this alternative.

Table 5.16-1. Construction Traffic Generation: SV 50K

Use	Trucks Trips	Total ADT in PCE[1]	AM Peak Hour					PM Peak Hour				
			% of ADT[2]	In:Out Split		Volume In	Volume Out	% of ADT	In:Out Split		Volume In	Volume Out
Trip Generation Summary (Trucks only)												
Off-site Quarry Option	520	1040	10%	80%	20%	83	21	10%	30%	70%	31	73
On-site Quarry Option	154	308	10%	80%	20%	25	6	10%	30%	70%	9	22
Trip Generation Summary (Construction Employees Vehicles Only)												
Off-site Quarry Option	712	712	30%	80%	20%	171	43	30%	30%	70%	64	150
On-site Quarry Option	712	712	30%	80%	20%	171	43	30%	30%	70%	64	150
Trip Generation Summary (Total)												
Off-site Quarry Option	1232	1752				254	64				95	223
On-site Quarry Option	866	1020				196	49				73	172

[1] PCE = Passenger Car Equivalent.
[2] Average Daily Traffic
Source: LL&G, 2007

Future Baseline Conditions (Year 2010 without SV 50K Construction Traffic)

As stated above, except for the following intersections, all Year 2010 Without Project intersections are calculated to operate at LOS D or better during both the AM and PM peak hours:

Intersections

- SR-67/Vigilante Road (LOS F during both AM and PM peak hour);
- SR-67/San Vicente Avenue (LOS F during the AM peak hour and LOS E during the AM peak hour); and
- SR-67/Willow Road (LOS F during the AM peak hour and LOS E during PM peak hour).

Street Segments

For the SV 50K study area, all Year 2010 Without Project street segment operations are calculated to operate at LOS D or better.

Table 5.16-2. Construction Traffic Generation: Moosa 50K

Use	Trucks Trips	Total ADT in PCE[1]	AM Peak Hour					PM Peak Hour				
			% of ADT[2]	In:Out Split		Volume In	Volume Out	% of ADT	In:Out Split		Volume In	Volume Out
Trucks/Equipment Only	292	584	10%	80%	20%	47	12	10%	30%	70%	18	41
Employee Traffic Only	1264	1264	30%	80%	20%	303	76	30%	30%	70%	114	265
Total	1556	1848				350	88				132	306

(1) PCE = Passenger Car Equivalent.
(2) Average Daily Traffic

Moosa 50K Construction Traffic Trip Generation/Distribution/Assignment

Table 5.16-2 summarizes the calculated number of average daily traffic trips during the peak construction period for the Moosa 50K component. The trip generation for the trucks was based on the estimated construction equipment schedule in Appendix G to this EIR/EIS. Refer to Section 4.16.3.2 (Traffic/Circulation for the Moosa 100K Alternative) of this EIR/EIS for a discussion of the methodology used to determine construction traffic generation, distribution and assignment associated with the Proposed Action that also applies to the Moosa 50K component of this alternative.

Future Baseline Conditions (Year 2010 without Moosa 50K Construction Traffic)

As stated above, except for the following intersections, all Year 2010 Without Project intersections are calculated to operate at LOS D or better during both the AM and PM peak hours:

Intersections

- Champagne Boulevard/Old Castle Road (minor street movements operate at LOS F during both AM and PM peak hour);
- I-15 Northbound Ramps/Gopher Canyon Rd (minor street movements operate at LOS F during both AM and PM peak hour); and
- I-15 Southbound Ramps/Gopher Canyon Rd (minor street movements operate at LOS F during both AM and PM peak hour).

Street Segments

For the Moosa study area, except for the Valley Center Road (south of Lilac Road) segment within the Moosa 50K study area, all Year 2010 Without the Alternative street segment operations are calculated to currently operate at LOS D 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

SV 50K

Baseline plus SV 50K Construction Traffic (both Off-site Quarry and On-site Quarry Options) - Intersections

Tables 5.16-3 and 5.16-4 summarize construction-related traffic impacts at intersections within the SV 50K study area for both the off-site quarry and on-site quarry options, respectively.

Table 5.16-3. Intersection Operations – Off-Site Quarry Option: SV 50K

		Existing		Year 2010 Without SV 50K		Year 2010 + SV 50K				
Intersection[3]	Peak Period	Delay[1]	LOS[2]	Delay	LOS	Delay	LOS	Delay Δ[4]	Critical Move Trips	Significant Impact
Pomerado Rd./Scripps Poway Pkwy [Signalized]	AM	24.5	C	25.4	C	25.8	C	0.4	N/A	No
	PM	29.5	C	31.4	C	31.7	C	0.3		No
SR-67/Poway Rd. [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 Pkwy [Signalized]	AM	24.6	C	30.1	C	30.4	C	0.3	N/A	No
	PM	27.3	C	33.3	C	36.9	D	3.6		No
SR-67/Vigilante Rd. [TWSC-WBL]	AM	93.0	F	>100	F	**>100**	**F**	**>10**	**30**	**Yes**
	PM	>100	F	>100	F	**>100**	**F**	**>10**	**111**	**Yes**
SR-67/San Vicente Ave. [TWSC-EB/WB]	AM	>100/28.0	F/D	>100/31.9	F/D	>100/37.5	F/E	>10	0	No
	PM	40.5/15.0	E/C	49.1/16.0	E/C	58.6/16.7	F/C	9.5	0	No
SR-67/Willow Rd [Signalized]	AM	70.2	E	96.4	F	**>100**	**F**	**>10**	**N/A**	**Yes**
	PM	50.6	D	74.6	E	**91.2**	**F**	**16.6**		**Yes**
Vigilante Rd./Morena Ave. [TWSC-SB]	AM	9.8	A	9.9	A	11.5	B	1.6	N/A	No
	PM	10.1	B	10.3	B	10.9	B	0.6		No

[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. WBL=Westbound Left-turn; EB=Eastbound; WB=Westbound; SB=Southbound
[4] Delay in seconds
Shading indicates significant impacts.
Source: LL&G, 2007

Table 5.16-4. Intersection Operations – On-Site Quarry Options: SV 50K

Intersection[3]	Peak Period	Existing		Year 2010 Without SV 50K		Year 2010 + SV 50K				
		Delay[1]	LOS[2]	Delay	LOS	Delay	LOS	Delay Δ[4]	Critical Move Trips	Significant Impact
Pomerado Rd./Scripps Poway Pkwy. [Signalized]	AM	24.5	C	25.4	C	25.8	C	0.4	N/A	No
	PM	29.5	C	31.4	C	31.7	C	0.3		No
SR-67/Poway Rd. [Signalized]	AM	17.8	B	18.7	B	18.7	B	0.0	N/A	No
	PM	18.0	B	18.5	B	18.5	B	0.0		No
SR-67/Scripps Poway Pkwy. [Signalized]	AM	24.6	C	30.1	C	30.4	C	0.3	N/A	No
	PM	27.3	C	33.3	C	37.0	D	3.7		No
SR-67/Vigilante Rd. [TWSC-WBL]	AM	93.0	F	>100	F	**>100**	**F**	**>10**	**16**	**Yes**
	PM	>100	F	>100	F	**>100**	**F**	**>10**	**56**	**Yes**
SR-67/San Vicente Ave. [TWSC-EB/WB]	AM	>100/28.0	F/D	>100/31.9	F/D	>100/34.9	F/D	>10	0	No
	PM	40.5/15.0	E/C	49.1/16.0	E/C	53.7/16.4	F/C	4.6	0	No
SR-67/Willow Rd. [Signalized]	AM	70.2	E	96.4	F	**>100**	**F**	**>10**	**N/A**	**Yes**
	PM	50.6	D	74.6	E	**82.9**	**F**	**8.3**		**Yes**
Vigilante Rd./Morena Ave. [TWSC-SB]	AM	9.8	A	9.9	A	10.9	B	1.0	N/A	No
	PM	10.1	B	10.3	B	10.4	B	0.1		No

(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. WBL=Westbound Left-turn; EB=Eastbound; WB=Westbound; SB=Southbound
(4) Delay in seconds
Shading indicates significant impacts.
Source: LL&G, 2007

Except for the following, all intersections within the SV 50K study area 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 AM and PM peak hours);
- 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 AM peak hour and LOS E during PM peak hour).

Under the on-site quarry options, construction-related traffic from the SV 50K study area would substantially increase delays at the above intersections that are projected to operate at LOS F in Year 2010 without this alternative. However, construction-related traffic from this component 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. Construction traffic at these intersections would contribute traffic to the minor street movement of these affected intersections during peak times, causing significant impacts.

Moosa 50K

Table 5.16-5 summarizes construction-related traffic impacts at intersections within the Moosa 50K study area.

Table 5.16-5. Intersection Operations: Moosa 50K

		Existing		Year 2010 Without Moosa 50K		Year 2010 + Moosa 50K				
Intersection[3]	Peak Period	Delay[1]	LOS[2]	Delay	LOS	Delay	LOS	Delay Δ[4]	Critical Move Trips	Significant Impact
Valley Center Rd/Lilac Rd [Signalized]	AM	24.5	C	27.8	C	39.8	D	12.0	N/A	No
	PM	32.8	C	43.0	D	52.5	D	9.5		No
Lilac Rd/Betsworth Rd [TWSC-NB]	AM	9.6	A	9.8	A	12.7	B	2.9		No
	PM	8.5	A	8.6	A	**>100**	**F**	**>10**	**186**	**Yes**
Old Castle Rd/Lilac Rd [TWSC-SB]	AM	7.3	A	7.4	A	9.2	A	1.8	N/A	No
	PM	6.9	A	6.9	A	7.3	A	0.4		No
Champagne Blvd/Old Castle Rd [TWSC-WBL]	AM	35.7	E	50.0	F	>100	F	>10	1	No
	PM	80.1	F	>100	F	>100	F	>10	3	No
Old Hwy 395/Gopher Cyn Rd. [Signalized]	AM	23.3	C	24.0	C	24.2	C	0.2	N/A	No
	PM	23.3	C	24.1	C	26.3	C	2.2		No
I-15 NB Ramps/Gopher Cyn Rd [TWSC-NBTL]	AM	35.7	E	50.1	F	62.3	F	12.2	0	No
	PM	>100	F	>100	F	>100	F	>10	0	No
I-15 SB Ramps/Gopher Cyn Rd [TWSC-SBTL]	AM	>100	F	>100	F	**>100**	**F**	**>10**	**19**	**Yes**
	PM	>100	F	>100	F	**>100**	**F**	**>10**	**8**	**Yes**
Old Hwy 395/Circle R Dr [TWSC-WBL]	AM	8.2	A	8.3	A	8.4	A	0.1	N/A	No
	PM	8.2	A	8.4	A	8.4	A	0.0		No

(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. WBL=Westbound Left-turn; EB=Eastbound; WB=Westbound; SB=Southbound
(4) Delay in seconds
Shading indicates significant impacts.
Source: LL&G, 2007

As shown in Table 5.16-5, except for the following, all intersections are calculated to operate at LOS D or better during both the AM and PM peak hours:

- Lilac Road/Betsworth Road (LOS F during PM peak hour);
- Champagne Boulevard/Old Castle Road (LOS F during both AM and PM peak hours); and
- I-15 Northbound and Southbound Ramps at Gopher Canyon Road (LOS F during both AM and PM peak hours).

Construction-related traffic from the Moosa 50K component would substantially increase delays at the above facilities, which are projected to operate at LOS A or F in Year 2010 without Moosa 50K traffic. However, construction-related traffic from the Moosa 50K component would not add to the critical movements at the Champagne Boulevard/Old Castle Road intersection and the I-15 northbound ramps at Gopher Canyon Road. Therefore, the construction-related traffic congestion impacts at the Lilac Road/Betsworth Road intersection and the I-15 southbound ramps at Gopher Canyon Road would be significant, and the construction-related traffic congestion impacts at the Champagne Boulevard/Old Castle Road intersection and the I-15 northbound ramps at Gopher Canyon Road would be less than significant.

Combined Impacts

The SV 50K/Moosa 50K Alternative would significantly affect four intersections, with three of them significantly affected for both the AM and PM peak hours and one significantly affected during the PM peak hour. Two intersections would be affected by the SV 50K component, and three intersections would be affected by the Moosa 50K component. Thus, the total impact of the SV 50K/Moosa 50K Alternative is potentially greater than that of either the Proposed Action or the Moosa 100K Alternative alone. Therefore, the combined impacts of the SV 50K and Moosa 50K components would be significant.

*Construction-related traffic from the SV 50K/Moosa 50K Alternative would significantly worsen traffic congestion at two intersections in the SV 50K study area (**Impacts SV/M/TC 1 and 2**) and two intersections in the Moosa 50K study area (**Impacts SV/M/TC 3 and SV/M/TC 4**). Therefore, construction impacts of the SV 50K/Moosa 50K Alternative would be 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

SV 50K

Baseline plus SV 50K Construction Traffic – Street Segments

Table 5.16-7 summarizes construction-related traffic impacts for street segments within the SV 50K study area. All roadway segments are projected to operate at LOS D or better with the addition of construction traffic.

Moosa 50K

Baseline plus Moosa 50K Construction Traffic – Street Segments

Table 5.16-8 summarizes construction-related traffic impacts for street segments within the Moosa 50K study area. Except the Valley Center Road (south of Lilac Road) segment ***(Impact SV/M/TC 5)***, all roadway segments are projected to operate at LOS D or better with the addition of construction traffic from the SV 50K/Moosa 50K Alternative construction.

Table 5.16-7. Street Segment Operations – On-Site Quarry Options: SV 50K

Segment	Capacity LOS E[1]	Existing			Year 2010 Without SV 50K			Year 2010 + SV 50K		
		ADT[2]	V/C[3]	LOS	ADT	V/C	LOS	ADT	V/C	LOS
SR-67										
Poway Rd to Scripps Poway Pkwy	37,000	22,240	0.60	B	24,020	0.65	B	24,250	0.66	B
Scripps Poway Pkwy to Vigilante Rd	37,000	27,540	0.74	C	29,740	0.80	D	30,400	0.82	D
South of Vigilante Rd	37,000	24,480	0.66	B	26,440	0.71	C	26,780	0.72	C
Scripps Poway Pkwy										
West of SR-67	37,000	20,380	0.55	A	22,010	0.59	A	22,450	0.61	B
Vigilante Rd										
East of SR-67	16,200	2,070	0.13	B	2,240	0.14	B	3,250	0.20	B

(1) Capacities based on County of San Diego Roadway Classification Table.
(2) Average Daily Traffic Volumes.
(3) Volume Capacity Ratio

Table 5.16-8. Street Segment Operations: Moosa 50K

Segment	Capacity LOS E[1]	Existing			Year 2010 Without Moosa 50K			Year 2010 + Moosa 50K		
		ADT[2]	V/C[3]	LOS	ADT	V/C	LOS	ADT	V/C	LOS
Valley Center Rd										
South of Lilac Rd	16,200	22,690	1.40	F	**24,510**	**1.51**	**F**	**25,035**	**1.55**	**F**
Old Castle Road										
East of Champagne Blvd	16,200	8,920	0.55	D	9,630	0.59	D	10,730	0.66	D
West of Lilac Rd	16,200	8,060	0.50	D	8,700	0.54	D	9,838	0.61	D
Betsworth Rd										
South of Lilac Rd	16,200	1,350	0.08	A	1,460	0.09	A	3,308	0.20	B

(1) Capacities based on County of San Diego Roadway Classification Table.
(2) Average Daily Traffic Volumes.
(3) Volume Capacity Ratio
Source: LLG, 2007
Note: a growth factor of 2% was also applied to these counts

Combined Impacts

The SV 50K/Moosa 50K Alternative would significantly affect one street segment, which is associated with the Moosa 50K study area. There would be no significant street segment impacts associated with the SV 50K study area. Thus, the combined impacts of the SV 50K and Moosa 50K components would be significant.

*The SV 50K/Moosa 50K Alternative would cause the Valley Center Road (south of Lilac Road) segment to increase the volume-to-capacity ratio by more than 0.02 (**Impact SV/M/TC 5**). Therefore, construction impacts of the SV 50K/Moosa 50K Alternative would be significant.*

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

SV 50K

The SV 50K study area dam construction zone downstream of the dam is within City of San Diego property, and is situated away from public roads. Therefore, construction activities in the dam construction zone would not result in delays in or block emergency response vehicles or routes.

Moosa 50K

The addition of Moosa 50K study area construction traffic along SR-67, Vigilante Road, Moreno Avenue, Champagne Boulevard/Old Castle Road, and the Northbound and Southbound Ramps at Gopher Canyon Road could, at times, decrease travel speeds below posted limits on these segments. However, any decreases in travel speeds on vicinity roadways would not cause a delay in emergency vehicle response times.

Combined Impacts

Although there is the potential for travel delays associated with construction traffic, as indicated in Section 3.14 (Public Services of the Proposed Action) of this EIR/EIS, it is not anticipated that the potential delays from SV 50K/Moosa 50K Alternative construction traffic would diminish or disrupt emergency service in either the SV 50K or the Moosa 50K component study areas, as all traffic must yield to emergency vehicles. Therefore, combined impacts of the SV 50K and Moosa 50K components would be less than significant.

The SV 50K/Moosa 50K Alternative would not diminish or disrupt emergency services. Therefore, impacts of the SV 50K/Moosa 50K Alternative 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

SV 50K

Construction traffic, such as heavy trucks, entering and leaving the dam construction zone could create an on-site safety hazard with 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 SV 50K/Moosa 50K Alternative construction to temporarily restrict all public access through the dam construction zone.

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 SV 50K component of this alternative due to the addition of construction-related traffic on SR-67, both north and south of Vigilante Road (see 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 from the SV 50K component would be significant.

Moosa 50K

The roads and areas surrounding the Moosa 50K construction site would be closed to the public during construction to temporarily restrict all public access through the dam construction zone as a way to ensure public safety. The Moosa 50K component would not contribute truck traffic that could result in a potential increased risk of accidents along roadways. Therefore, impacts of the Moosa 50K component would be less than significant.

Combined Impacts

Construction sites would be closed to the public to ensure public safety; however, an increased risk of conflicts between cross traffic, in the vicinity of the unsignalized Vigilante Road intersection, and southbound traffic on SR-67 would be exacerbated by SV 50K construction traffic on SR-67. This would result in an increased risk of motor vehicle accidents and pedestrian injuries, which would be a significant impact. Construction traffic associated with the Moosa 50K component of the alternative would not have potential construction traffic conflicts. Because there are no significant increased risk of motor vehicle accidents and/or pedestrian injury associated with the Moosa 50K study area, the total impact of the SV 50K/Moosa 50K Alternative would be less than the Moosa 100K Alternative and the same as the Proposed Action. The combined impacts of the SV 50K and Moosa 50K components would be significant.

Because the construction sites and related access roads would be closed to the public during SV 50K/Moosa 50K construction periods, there would be no increased risk of motor vehicle accidents and/or pedestrian injury at the construction sites.

Under both the off-site quarry option and the on-site quarry options, the SV 50K component 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 SV/M/TC 6)****. Therefore, impacts of the SV 50K/Moosa 50K Alternative would be significant.*

5.16.3.3 Mitigation Measures

SV 50K

The SV 50K/Moosa 50K Alternative would result in significant construction-related traffic congestion impacts at the SR-67/Vigilante Road intersection ***(Impact SV/M/TC 1)*** *and* SR-67/Willow Road intersection ***(Impact SV/M/TC 2)*** in the AM and PM peak hours. For the SV 50K component of the alternative, the impacts at the SR-67/Vigilante Road and SR-67/Willow Road intersections could be avoided by prohibiting haul trucks and crew vehicles from accessing the construction site during both AM and PM peak hours (7:00-8:00 a.m. and 4:00-6:00 p.m.). However, this is not a feasible mitigation measure because hauling, materials deliveries, and crew access must occur on a continuous basis to support the 24/7 operations associated with RCC dam construction. Several additional mitigation scenarios were examined specific to each intersection as discussed below; however, none was determined to be feasible or practicable, as explained below.

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/M/TC 1***) could be mitigated by installing a traffic signal and extending the southbound left-turn pocket on SR-67 by 150 feet. However, Caltrans has indicated they would not support the installation of a traffic signal at this intersection. Therefore, this measure is not considered feasible. Additional mitigation scenarios for this intersection are discussed below.

For the off-site quarry option, there are no other feasible measures to mitigate the significant construction-related traffic congestion impact at the SR-67/Vigilante Road intersection due to the high volume of daily haul trucks estimated throughout the construction period. Therefore, the construction-related traffic congestion impacts at this intersection under the off-site quarry option 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/M/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 SV 50K component would only occur during the construction period, and the SV 50K component 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.

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, 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. Therefore, there are no other feasible measures to mitigate this impact, and the construction-related traffic safety impacts of the SV 50K/Moosa 50K Alternative would be significant and unmitigable, under both the off-site quarry option and the on-site quarry options ***(Impact SV/M/TC 6)***.

Moosa 50K

Lilac Road/Betsworth Road and I-15 NB and SB Ramps/Gopher Canyon Road

The significant construction-related traffic congestion impacts at the Lilac Road/Betsworth Road intersection in the PM peak hour ***(Impact SV/M/TC 3)*** and the I-15 Southbound Ramps/Gopher Canyon Road intersection in the AM and PM peak hours (***Impact SV/M/TC 4***) could be avoided by prohibiting haul trucks and construction vehicles from accessing the construction site during the AM and PM peak hours. However, this is not a feasible mitigation measure because hauling, materials deliveries, and construction employee access must occur on a continuous basis to support the 24 hours per day/seven days a week operation associated with pipeline tunnel construction. Alternatively, the significant construction-related traffic congestion impacts at these two intersections could be mitigated by installing a traffic signal at each intersection. However, this measure is not considered practicable given that this significant traffic impact from the Moosa 100K Alternative would only occur during the construction period, and the Moosa 100K Alternative would not have any impact at these intersections after completion of construction.

Valley Center Road South of Lilac Road Street Segment

The SV 50K/Moosa 50K Alternative would contribute construction traffic to the Valley Center Road south of Lilac Road segment, which is projected to operate at LOS F with the alternative traffic resulting in a significant impact ***(Impact SV/M/TC 5)***. The planned widening of Valley Center Road to four lanes would mitigate the significant impact of temporary construction-related traffic in the road segment of Valley Center Road south of Lilac Road. However, Valley Center Road is a County of San Diego facility and, therefore, is not within the jurisdiction of the Water Authority. Therefore, the impact would remain significant and unmitigable.

To reduce the significant temporary construction-related traffic impact at Old Castle Road east of Champagne Boulevard road segment, the intersection at Champagne Boulevard/Old Castle Road could be signalized to provide additional capacity. However, as discussed above, this measure is not considered practicable. Therefore, the impact would remain significant and unmitigable.

5.16.3.4 Residual Impacts after Mitigation

SV 50K

There are no feasible measures to mitigate the significant construction-related impacts at the SR-67/Vigilante Road ***(Impact SV/M/TC 1)*** and SR-67/Willow Road ***(Impact SV/M/TC 2)*** intersections, or the increased risk of motor vehicle accidents and pedestrian injuries on SR-67 from the SV 50K component of the SV 50K/Moosa 50K Alternative ***(Impact SV/M/TC 6)***. The significant impact associated with an increased risk of accidents on SR-67 due to the proposed project's construction traffic would also be unmitigable because all mitigation scenarios analyzed were determined to be infeasible or not practicable.

Moosa 50K

The significant construction-related impacts at the Lilac Road and Betsworth Road intersection ***(Impact SV/M/TC 3)***, the I-15 southbound ramps at Gopher Canyon Road ***(Impact SV/M/TC 4)***, and the street segment of Valley Center Road south of Lilac Road ***(Impact SV/M/TC 5)*** could be mitigated to a level of less than significant with the installation of traffic signals. However, installation of traffic signals at the affected intersections and roadways would provide a long-term solution to a short-term, construction-related impact and, therefore, would not be practical for the Water Authority to implement. Additionally, due to the proposed 20- to 24-hour construction schedule for the tunneling operations only (see Section 2.3.2 [Alternatives Analyzed] of this EIR/EIS), limiting construction-related traffic to the project site during the AM and PM peak hours would not be a practical solution for the Water Authority to implement, as such restrictions would substantially interfere with the construction schedule. Also, widening Valley Center Road is not within the jurisdiction of the Water Authority to accomplish. These significant impacts would cease upon the completion of construction. A Statement of Overriding Considerations would be required for the SV 50K/Moosa 50K Alternative.

5.16.4 Cumulative Effects

5.16.4.1 Other CIP Projects

CIP projects that would contribute to cumulative traffic/circulation impacts of the SV 50K/Moosa 50K Alternative would include those projects that would also affect the Proposed Action and the Moosa 100K Alternative identified in Sections 3.16.4.1 and 4.16.4.1, respectively. These projects would include the Slaughterhouse Terminal Reservoir, Hubbard Hill Flow Regulatory Structure, North County Distribution Pipeline Flow Regulatory Structure, and Second Crossover Pipeline. The cumulative effects of this alternative's construction traffic would affect both the SV 50K study area and the Moosa 50K study area.

For the SV 50K study area, 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 during construction. In addition, construction activities would contribute cumulatively to an overall increase in traffic volumes on a localized and temporary basis only, because most Water Authority facilities are unmanned and operated from a central office in Escondido. Assuming the Slaughterhouse Terminal Reservoir would be constructed concurrently with the SV 50K/Moosa 50K Alternative, the construction-related traffic volumes associated with this CIP project would affect the same segments and intersections on SR-67 as evaluated for the SV 50K/Moosa 50K Alternative. 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 5.16.4.3 below.

For the Moosa 50K study area, it was determined that Hubbard Hill Flow Regulatory Structure, North County Distribution Pipeline Flow Regulatory Structure, and Second Crossover Pipeline are the only CIP projects with the potential for cumulative impacts when combined with the Moosa 50K component of this alternative. The PEIR for the Regional Water Facilities Master Plan concluded that construction activities associated with the proposed water infrastructure facilities would contribute to an overall increase in traffic volumes on the existing and planned roadway networks on a localized and temporary basis only, because most Water Authority facilities are unmanned and operated from a central office in Escondido. Following construction, the projects would not contribute to cumulative regional traffic and transportation impacts associated with other projects in the region. As there would be no long-term cumulative impact due to the Moosa 50K component of this alternative when combined with traffic and circulation impacts associated with the CIP projects listed above, cumulative traffic impacts would be less than significant. The above conclusions are incorporated into the cumulative traffic analyses in Section 5.16.4.3 below.

5.16.4.2 ESP Projects

ESP projects that would be in the vicinity of the SV 50K component would include the San Vicente Pipeline, the San Vicente Pump Station, and the San Vicente Surge Control Facility. 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 SV 50K component of this alternative. However, construction-related traffic associated with the San Vicente Pipeline tunnel portal, in conjunction with the SV 50K component of this alternative, would add to cumulatively significant traffic congestion impacts at the facilities identified in Section 5.16.3 above. The above conclusions regarding cumulative traffic impacts for the listed ESP projects are incorporated into the cumulative traffic analyses in Section 5.16.4.3 below. There are no ESP projects in the vicinity of the Moosa 50K component of this alternative that would contribute a cumulative traffic impact.

5.16.4.3 Other Planned Projects with CIP and ESP Projects

This section evaluates the cumulative traffic impacts of the SV 50K/Moosa 50K Alternative when considered in conjunction with the other planned projects listed in Table 5.2-1, and incorporates the cumulative traffic impacts associated with the CIP and ESP projects described in the above sections. The analysis is segregated by the study area for each major component of this alternative (SV 50K and Moosa 50K) because the traffic effects would not overlap into each component's study area. The following cumulative traffic analysis addresses each of the four significance thresholds listed in Section 5.16.3 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 5.2-1, 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 SV 50K component traffic congestion impacts at the SR-67/Vigilante Road ***(Impact SV/M/TC 1)*** and SR-67/Willow Road ***(Impact SV/M/TC 2)*** 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 50K component 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 5.16.3.2 above. Therefore, the cumulative contribution of SV 100K construction traffic at the impacted SR-67/Vigilante Road and SR-67/Willow Road 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 5.2-1, would be significant.

Construction-related traffic from the SV 50K component of this alternative 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 the SV 50K component construction traffic at the impacted 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 5.2-1, would not be considerable, and the cumulative impact would be less than significant.

Construction of the Moosa 50K component of this alternative would contribute construction traffic to the intersections of Lilac Road/Betsworth Road ***(Impact SV/M/TC 3)*** and the I-15 Southbound Ramps/Gopher Canyon Road ***(Impact SV/M/TC 4)***, which are projected to operate at LOS E or F. The cumulative projects in the vicinity of the Moosa 100K Alternative listed in Table 5.2-1 (assumed to be under construction and/or operation concurrent with the Moosa 50K component of this alternative), could contribute traffic that would result in a decrease in level of service below the established standard. Therefore, the construction-related cumulative traffic impacts associated with Moosa 50K component would be significant and unmitigable during construction, but would cease upon completion of construction.

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 5.16.3.2 above. As shown in Tables 5.16-7, no roadway segments are projected to operate below LOS D in Year 2010 with and without the construction traffic volumes associated with the SV 50K component of this alternative. Therefore, the cumulative contribution of SV 50K component 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 5.2-1, would not be cumulatively considerable, and the cumulative impact would be less than significant.

Construction of the Moosa 50K component of this alternative would contribute construction traffic to the street segment of Valley Center Road (south of Lilac Road) such that this street segment would operate at LOS F ***(Impact SV/M/TC 5)***. The cumulative projects in the vicinity of the Moosa 50K component of this alternative listed in Table 5.2-1 (assumed to be under construction and/or operation concurrent with the Moosa 50K component), could potentially contribute traffic that would result in the volume-to-capacity ratio that is increased by more than 0.02. Therefore, the construction-related cumulative traffic impacts associated with the Moosa 50K component would be significant and unmitigable during construction, but would cease upon completion of construction.

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 SV 50K/Moosa 50K Alternative and from the CIP, ESP, and other planned cumulative projects in Table 5.2-1 could result in an overall slowing of traffic on vicinity roadway segments. However, as evaluated in Section 5.14 (Public Services for the SV 50K/Moosa 50K Alternative) 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 SV 50K/Moosa 50K Alternative, when combined with traffic volumes from the CIP, ESP, and other planned cumulative projects listed in Table 5.2-1, 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 could be exacerbated by the addition of construction-related traffic volumes from the SV 50K component and from the CIP, ESP, and other planned cumulative projects listed in Table 5.2-1. 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 SV 50K component, 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 5.2-1, would be cumulatively considerable; therefore, the impact would be significant ***(Impact SV/M/TC 6)***.

Construction of the Moosa 50K component would not contribute truck traffic that could result in a potential increased risk of accidents along roadways. The cumulative projects in the vicinity of the Moosa 50K component listed in Table 5.2-1 (assumed to be under construction and/or operation concurrent with the Moosa 50K component) either would not cause increased risks or would be required to comply with mitigation measures or regulations intended to avoid or mitigate significant impacts of increased risks. Therefore, effects would not be cumulatively considerable, and the cumulative impacts of potential risk of accidents from the Moosa 50K component would be less than significant.

Under both the off-site quarry option and the on-site quarry options, construction-related traffic from the SV 50K component of the SV 50K/Moosa 50K Alternative 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 SV 50K component for these activities, when combined with the construction-related and

operational traffic volumes associated with the CIP, ESP, and other planned cumulative projects listed in Table 5.2-1, would be less than significant.

*Under both the off-site quarry option and the on-site quarry options, the SV 50K component of this alternative would result in significant project-specific traffic congestion impacts at both the SR-67/Vigilante Road intersection (**Impact SV/M/TC 1C**) and the SR-67/Willow Road intersections (**Impact SV/M/TC 2C**) during construction, both of which are projected to operate at LOS E or F in Year 2010. Under both the off-site quarry option and the on-site quarry options, the SV 50K component 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 SV/M/TC 3C**). These impacts were determined to be unmitigable. Therefore, the construction-related cumulative traffic impacts of the SV 50K component, when combined with the construction-related and operational traffic volumes associated with the CIP, ESP, and other planned cumulative projects listed in Table 5.2-1, would be significant for the duration of construction (**Impacts SV/M/TC 1C, and TC 3C**). No feasible measures are available to mitigate the cumulative construction traffic impacts of the SV 50K component. However, these cumulative impacts would cease upon completion of construction. A Statement of Overriding Considerations would be necessary for approval of the SV 50K/Moosa 50K Alternative.*

*Construction-related traffic associated with the Moosa 50K component would cause the level of service to exceed established standards at the intersections of Lilac Road/Betsworth Road (**Impact SV/M/TC 3C**), the I-15 Northbound and Southbound Ramps/Gopher Canyon Road (**Impact SV/M/TC 4C**), and the street segment of Valley Center Road (south of Lilac Road **(Impact SV/M/TC 5C)**. These impacts were determined to be unmitigable. Therefore, the construction-related cumulative traffic impacts of the Moosa 50K component, when combined with traffic impacts from concurrent construction and/or operation of the CIP and other planned cumulative projects listed in Table 5.2-1, would be significant for the duration of construction (**Impacts SV/M/TC 1** and **SV/M/TC 2**). No feasible mitigation measures are available to reduce cumulative construction traffic impacts of the Moosa 50K component to below a level of significance. However, these cumulative impacts would cease upon completion of construction. A Statement of Overriding Considerations would be necessary for approval of the SV 50K/Moosa 50K Alternative.*

*The SV 50K component would result in a significant cumulative impact related to increased risk of motor vehicle accidents and pedestrian injuries on a segment of SR-67 in the vicinity of the unsignalized Vigilante Road intersection due to construction-related traffic **(Impact SV/M/TC 6C)**.. However, construction and implementation of the Moosa 50K component would not disrupt emergency services or contribute to truck traffic that would result in risk to increased accidents. Therefore, cumulative impacts due to the Moosa 50K component for these activities would be less than significant. The significant impact associated with an increased risk of accidents on SR-67 due to the SV 50K component's construction traffic would be unmitigable because all mitigation scenarios analyzed were determined to be infeasible or not practicable. However, this cumulative impact would cease upon completion of construction. A Statement of Overriding Considerations would be necessary for approval of the SV 50K/Moosa 50K Alternative.*

This page is intentionally left blank.