5.11 Noise and Vibration

This section evaluates the potential impacts of the SV 50K/Moosa 50K Alternative on noise and vibration. This evaluation includes an assessment of the direct, indirect, short-term, long-term, and cumulative effects of the SV 50K/Moosa 50K Alternative on ambient noise. The evaluation is based on the noise technical report (PBS&J, 2007), which is included as Appendix E to this EIR/EIS.

5.11.1 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 3.11.1 (Noise and Vibration for the Proposed Action) and Section 4.11.1 (Noise and Vibration for the Moosa 100K Alternative) for information on the Affected Environment as it applies to the SV 50K/Moosa 50K Alternative.

5.11.1.1 Environmental Setting

The environmental setting for the SV 50K component of the SV 50K/Moosa 50K Alternative is the same as described in Section 3.11.1.1 (Noise and Vibration for the Proposed Action) of this EIR/EIS, and the setting for the Moosa 50K component is the same as described in Section 4.11.1.1 (Noise and Vibration for the Moosa 100K Alternative) of this EIR/EIS.

5.11.1.2 Regulatory Setting

Refer to Section 3.11.1.2 (Noise and Vibration for the Proposed Action) of this EIR/EIS for a discussion of federal, state, and local plans, policies, and regulations relevant to noise and vibration that also apply to the SV 50K/Moosa 50K Alternative, including: U.S. Office of Surface Mining Reclamation and Enforcement blasting guidelines; Policy 4b of the San Diego County General Plan Noise Element; San Diego County Noise Ordinance; and Water Authority blasting criteria.

5.11.2 Project Design Features

General Conditions and Standard Specifications that will be included in the project construction documents to reduce noise and vibration impacts associated with the SV 50K/Moosa 50K Alternative are summarized in Section 1.9.5 (Introduction, Noise and Vibration) of this EIR/EIS. In addition, the SV 50K/Moosa 50K Alternative would incorporate the same project design feature as described in Section 4.11.2 (Noise and Vibration for the Moosa 100K Alternative) of this EIR/EIS.
5.11.3 Direct and Indirect Effects

5.11.3.1 Thresholds of Significance

Thresholds used to evaluate potential noise and vibration impacts are based on applicable criteria in the State CEQA Guidelines (CCR §§15000-15387), Appendix G, and the County of San Diego noise standards and regulations. A significant noise and/or vibration impact would occur if the SV 50K/Moosa 50K Alternative would:

1. Expose noise-sensitive land uses to construction noise levels exceeding 75 dB(A) $L_{eq}$ during an 8-hour period between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday; or to increases in ambient noise levels equal to or above 3 dB in areas where ambient noise levels already equal or exceed 75 dB(A)$L_{eq}$.

2. Expose sensitive receptors to construction noise between the hours of 7:00 p.m. and 7:00 a.m.

3. Expose off-site noise-sensitive receptors to a road noise level increase of more than 3 dB and either elevate noise levels above 60 dB CNEL or exceed a 3 dB increase above an already noisy condition.

4. Result in operational noise levels that exceed a one-hour average noise level of 50 dB(A) $L_{eq}$ by day or 45 dB(A) $L_{eq}$ at night at the property boundary.

5. Expose persons to or generate excessive vibrations that:
   a. Result in peak particle velocities in excess of 2 inches per second at the nearest structure.
   b. Result in a daily average particle velocity in excess of 0.5 inches per second at the nearest sensitive receptor.

5.11.3.2 Impact Analysis

Methodology

Refer to Section 3.11.3.2 (Noise and Vibration for the Proposed Action) of this EIR/EIS for a discussion of the methodology used to evaluate noise/vibration impacts associated with the Proposed Action that also applies to the SV 50K/Moosa 50K Alternative. The approximate distances given between the identified SV 100K and Moosa 100K components (e.g., dam construction zones, quarry options, pump stations, pipeline tunnel portals, access roads) and the closest residential receptors listed in Sections 3.11.3.2 and 4.11.3.2, respectively, would be the same for the SV 50K and Moosa 50K components. This is because the locations of these components would not change between the larger and smaller alternatives; only the reservoir inundation areas would be different.
The noise impacts of the SV 50K/Moosa 50K Alternative would occur in two different and widely separated portions of San Diego County. Thus, the total noise impact of this alternative would be no greater than that of its individual components (SV 50K and Moosa 50K), as the combined noise impacts would not be relevant.

**Analysis**

*Threshold 1: Expose noise-sensitive land uses to construction noise levels exceeding 75 dB(A) $L_{eq}$ during an 8-hour period between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday; or to increases in ambient noise levels equal to or above 3 dB in areas where ambient noise levels already equal or exceed 75 dB(A)$L_{eq}$*

**General Daytime Construction Activities**

**SV 50K and Moosa 50K**

As discussed in Sections 3.11.3.2 and 4.11.3.2 (Noise and Vibration for the Proposed Action and Moosa 100K Alternative, respectively) of this EIR/EIS, daytime construction and blasting activities associated with the Proposed Action and Moosa 100K Alternative would be less than the 75 dBA standard for construction activities. Operation of construction equipment for the SV 50K and Moosa 50K components of this alternative would result in similar construction and blasting noise levels at nearby receptors as analyzed under the Proposed Action and Moosa 100K Alternative because the distances between noise sources and receptors would be the same between the larger and smaller alternatives. Therefore, the noise impacts from general construction and blasting activities during the daytime hours for both components of the SV 50K/Moosa 50K Alternative would be less than significant.

Refer to Section 5.6.3.2 (Biological Resources for the SV 50K/Moosa 50K Alternative) of this EIR/EIS for a discussion of construction noise impacts and mitigation for sensitive breeding bird species.

*The SV 50K/Moosa 50K Alternative would not exceed the 75 dBA $L_{eq}$ noise standard for daytime construction and blasting activities. Therefore, impacts of the SV 50K/Moosa 50K Alternative would be less than significant.*

*Threshold 2: Expose sensitive receptors to construction noise between the hours of 7:00 p.m. and 7:00 a.m.*

**SV 50K**

As discussed in Section 3.11.3.2 (Noise and Vibration for the Proposed Action) of this EIR/EIS, nighttime noise levels from construction activities, batch plant operations, and blasting for tunneling operations within the dam construction zone would exceed the 45 dBA $L_{eq}$ interior noise standard at the nearest residential receptor. However, nighttime noise levels from batch plant operations near the Marina Quarry Option would not exceed the nighttime noise standard. Nighttime construction for the SV 50K component would result in similar noise levels at the
nearest residential receptor to the south of the dam construction zone, as analyzed under the Proposed Action, because the distances between noise sources and this receptor would be the same between the larger and smaller alternatives. Therefore, the noise impacts from nighttime construction activities, batch plant operations, and blasting for tunneling operations within the dam construction zone for the SV 50K component of the SV 50K/Moosa 50K Alternative would be significant, but nighttime noise levels from batch plant operations near the Marina Quarry Option would be less than significant.

Moosa 50K

As discussed in Section 4.11.3.2 (Noise and Vibration for the Moosa 100K Alternative) of this EIR/EIS, nighttime noise levels from pipeline tunneling operations (including blasting) would exceed the 45 dBA L\text{eq} interior noise standard at nearby residential receptors. Nighttime construction for pipeline tunneling operations (including blasting) associated with the Moosa 50K component would result in similar noise levels at nearest residential receptors to the pipeline tunnel portals, as analyzed under the Moosa 100K Alternative, because the distances between noise sources and the receptors would be the same between the larger and smaller alternatives. Therefore, the noise impacts from nighttime pipeline tunneling operations (including blasting) for the Moosa 50K component of the SV 50K/Moosa 50K Alternative would be significant.

The SV 50K/Moosa 50K Alternative would expose sensitive receptors to nighttime construction and blasting noise levels that would exceed the 45 dBA L\text{eq} interior noise standard for residential uses. Therefore, impacts of the SV 50K/Moosa 50K Alternative would be significant (Impact SV/M/NV 1).

Threshold 3: Expose off-site noise-sensitive receptors to a road noise level increase of more than 3 dB and either elevate noise levels above 60 dB CNEL or exceed a 3 dB increase above an already noisy condition

Construction-Related Roadway Noise Impacts

SV 50K

During the peak construction months, the SV 50K component of this alternative is estimated to generate 520 truck trips per day with an off-site quarry option, and approximately 154 truck trips per day with an on-site quarry option. In addition to truck trips, the SV 50K component would generate about 712 vehicle trips per day for construction crew vehicles. Noise level increases during construction at selected locations are presented in Table 5.11-1. For the off-site quarry option, the maximum traffic noise level increases would be 6.0 dBA along Vigilante Road and 5.7 dBA along Moreno Road during the PM peak hour. These noise level increases would exceed the 3 dB significance threshold. Although less than the off-site quarry option, the Year 2010 maximum traffic noise level increases for the on-site quarry options would also exceed the 3 dB significance threshold along the two identified roadways. Therefore, construction traffic noise impacts associated with the SV 50K component of the SV 50K/Moosa 50K Alternative would be significant.
Moosa 50K
During the peak construction months, the Moosa 50K component of this alternative is estimated to require 292 truck trips per day. In addition to truck trips, the Moosa 50K component would generate about 1,264 vehicle trips per day for construction crew vehicles. Noise level increases during construction at selected locations are presented in Table 5.11-1. The Moosa 50K component would result in a maximum noise level increase of 7.6 dBA along Betsworth Road west of Lilac Road at the Moosa site during the PM peak hour, which would exceed the 3 dB significance threshold. The noise level increases due to construction traffic would be temporary, but would exceed the identified thresholds for the duration of construction activities. Therefore, construction traffic noise impacts associated with the Moosa 50K component of the SV 50K/Moosa 50K Alternative would be significant.

Table 5.11-1. Calculated Roadway Noise Levels at Selected Noise-Sensitive Locations

<table>
<thead>
<tr>
<th>Roadway Segment</th>
<th>Receptor</th>
<th>Year 2010 Without SV 50K/Moosa 50K (dBA)</th>
<th>Year 2010 with SV 50K/Moosa 50K (dBA)</th>
<th>Maximum Increase over Year 2010 Without SV 50K/Moosa 50K (dBA)</th>
<th>Maximum Increase over Year 2010 Without SV 50K/Moosa 50K (dBA)</th>
<th>Above the 3 dB Significance Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Vicente Site</td>
<td>Vigilante Road, Moreno Avenue to SR 67</td>
<td>Residential</td>
<td>64.1</td>
<td>70.1</td>
<td>67.6</td>
<td>6.0</td>
</tr>
<tr>
<td>Moreno Avenue, South of Vigilante Road</td>
<td>Residential</td>
<td>65.6</td>
<td>71.3</td>
<td>70.1</td>
<td>5.7</td>
<td>4.5</td>
</tr>
<tr>
<td>SR 67, North of Vigilante Road</td>
<td>Residential</td>
<td>68.8</td>
<td>69.6</td>
<td>69.2</td>
<td>0.8</td>
<td>0.4</td>
</tr>
<tr>
<td>SR 67, South of Vigilante Road</td>
<td>Residential</td>
<td>68.8</td>
<td>69.1</td>
<td>68.9</td>
<td>0.3</td>
<td>0.1</td>
</tr>
<tr>
<td>Moosa Site</td>
<td>Betsworth Road, west of Lilac Road</td>
<td>Residential</td>
<td>53.1</td>
<td>60.7</td>
<td>--</td>
<td>7.6</td>
</tr>
<tr>
<td>Lilac Road, north of Betsworth Road</td>
<td>Residential</td>
<td>61.2</td>
<td>63.2</td>
<td>--</td>
<td>2.0</td>
<td>--</td>
</tr>
<tr>
<td>Old Castle Road, west of Lilac Road</td>
<td>Residential</td>
<td>63.8</td>
<td>66.5</td>
<td>--</td>
<td>2.7</td>
<td>--</td>
</tr>
<tr>
<td>Old Castle Road, east of Champagne Boulevard</td>
<td>Residential</td>
<td>66.9</td>
<td>68.4</td>
<td>--</td>
<td>1.5</td>
<td>--</td>
</tr>
</tbody>
</table>

Note: Noise levels calculated using FWHA’s TNM. Noise levels calculated for the PM peak hour at the setback of the identified receptors for San Vicente sites and 100 feet from centerline of roadway for Moosa sites. Based on traffic data from Linscott, Law, & Greenspan Engineers’ Traffic Impact Analysis San Vicente Dam Raise November 2006. Source: EIP Associates, a division of PBS&J, 2006.
Operational (Recreational Trips) Roadway Noise Impacts

**SV 50K and Moosa 50K**

Both the relocated marina associated with the SV 50K component and the new marina associated with the Moosa 50K component of this alternative would result in the same traffic volumes as projected for the Proposed Action and Moosa 100K Alternative, respectively. As evaluated in Sections 3.11.3.2 [Noise and Vibration for the Proposed Action] and 4.11.3.2 [Noise and Vibration for the Moosa 100K Alternative] of this EIR/EIS, the expected increase in recreational traffic volumes along vicinity roadways to access the SV 50K and Moosa 50K marinas would not generate noise levels at nearby residential receptors above the 3 dB threshold. Therefore, long-term traffic noise impacts associated with the SV 50K and Moosa 50K components of the SV 50K/Moosa 50K Alternative would be less than significant.

During the peak construction months in Year 2010, construction traffic from the SV 50K/Moosa 50K Alternative would increase roadway noise levels at residential properties along Vigilante Road and Moreno Avenue for the SV 50K component, and along Betsworth Road for the Moosa 50K component, such that the 3 dB significance threshold would be exceeded. Therefore, impacts of the SV 50K/Moosa 50K Alternative would be significant (Impact SV/M/NV 2).

The expected increase in recreational traffic volumes along vicinity roadways to access the SV 50K and Moosa 50K marinas would not generate noise levels at nearby residential receptors above the 3 dB significance threshold. Therefore, impacts of the SV 50K/Moosa 50K Alternative would be less than significant.

**Threshold 4: Result in operational noise levels that exceed a one-hour average noise level of 50 dB(A) L_{eq} by day or 45 dB(A) L_{eq} at night at the property boundary**

**SV 50K and Moosa 50K**

Because there would be no residents near the shorelines of either the expanded San Vicente Reservoir (SV 50K component) or the new Moosa Reservoir (Moosa 50K component) due to the required septic system setback, the use of recreational motorboats at the reservoirs would not exceed the 50 dBA L_{eq} (daytime) and the 45 dBA L_{eq} (nighttime) noise standards for residential uses. Therefore, there would be no noise impacts on nearby residents from motorboats using the SV 50K and Moosa 50K reservoirs for the SV 50K/Moosa 50K Alternative.

Noise impacts from operation of new pump stations associated with the Moosa 50K component of this alternative would be the same as evaluated for the Moosa 100K Alternative. With implementation of the project design feature in Section 4.11.2 of this EIR/EIS (i.e., pump stations will be enclosed or shielded and include the use of sound absorption materials as needed), noise levels from pump stations would be expected to meet the 50 dBA L_{eq} (daytime) and the 45 dBA L_{eq} (nighttime) noise standards for residential uses. Therefore, impacts from pump station operation noise associated with the Moosa 50K component of the SV 50K/Moosa 50K Alternative would be less than significant.
The use of motorboats on the SV 50K and Moosa 50K reservoirs would not generate noise levels at nearby residential receptors above the 50 dBA $L_{eq}$ (daytime) and the 45 dBA $L_{eq}$ (nighttime) noise standards. Therefore, impacts of the SV 50K/Moosa 50K Alternative would be less than significant.

The pump stations associated with the Moosa 50K component of the SV 50K/Moosa 50K Alternative would be designed to provide acoustic shielding such that operational noise levels would meet the 50 dBA $L_{eq}$ (daytime) and the 45 dBA $L_{eq}$ (nighttime) noise standards. Therefore, impacts of the SV 50K/Moosa 50K Alternative would be less than significant.

**Threshold 5a: Expose persons to or generate excessive vibrations that result in peak particle velocities in excess of 2 inches per second at the nearest structure**

**SV 50K and Moosa 50K**

Blasting conditions for the SV 50K and Moosa 50K components of this alternative would be similar to those described in Sections 3.11.3.2 [Noise and Vibration for the Proposed Action] and 4.11.3.2 [Noise and Vibration for the Moosa 100K Alternative] of this EIR/EIS. Similarly, construction activities associated with this alternative would not generate vibration from blasting that would exceed the PPV damage threshold of 2.0 inches per second at any structure. Therefore, impacts of the both the SV 50K and Moosa 50K components of the SV 50K/Moosa 50K Alternative would be less than significant.

**Threshold 5b: Expose persons to or generate excessive vibrations that result in a daily average particle velocity in excess of 0.5 inches per second at the nearest sensitive receptor**

**SV 50K and Moosa 50K**

Blasting conditions for the SV 50K and Moosa 50K components of this alternative would be similar to those described in Sections 3.11.3.2 [Noise and Vibration for the Proposed Action] and 4.11.3.2 [Noise and Vibration for the Moosa 100K Alternative] of this EIR/EIS. Similarly, construction activities associated with this alternative would not generate vibration from blasting that would exceed the daily average particle velocity threshold of 0.5 inch per second at any structure. Therefore, impacts of the both the SV 50K and Moosa 50K components of the SV 50K/Moosa 50K Alternative would be less than significant.
5.11.3.3 Mitigation Measures

To mitigate significant impacts associated with nighttime noise levels from batch plant operations south of the SV 50K dam (Impact SV/M/NV 1), the Water Authority will implement the following mitigation measure:

**SV/M/NV 1-1**

If feasible, the batch plant operations will be located at the on-site Marina Quarry Option. If the batch plant operations cannot be located at the on-site Marina Quarry Option, then the significant nighttime noise impacts from batch plant operations south of the dam would be unmitigable because there are no other feasible mitigation measures available to reduce these impacts to a level considered less than significant.

To reduce the noise impacts from SV 50K dam construction activities associated with blasting and tunneling operations downstream of San Vicente Dam (Impact SV/M/NV 1), the placement of noise attenuation barriers along the southerly and easterly limits of the construction zone was examined. However, given the height of standard truck exhaust stacks and the height of stationary equipment associated with possible quarry operations, it is speculative that barriers could feasibly be constructed at the height necessary to attenuate nighttime construction noise levels at the residences located south of the dam construction zone to below the 45 dBA $L_{eq}$ exterior noise standard for residential uses. While the barriers may reduce the nighttime noise levels, there are no feasible mitigation measures available to reduce these impacts to a level considered less than significant.

In addition, the significant impacts from nighttime noise levels associated with Moosa 50K pipeline tunneling operations (Impact SV/M/NV 1) may be reduced through the use of acoustical barriers or other measures, such as hourly restrictions for certain types of noisy equipment. However, because the specific locations of tunnel portals for the Moosa 50K component of this alternative are unknown, it is speculative to assume that the nighttime noise impacts could be fully mitigated or avoided. If this alternative is selected, detailed noise studies and modeling would be performed based on known acoustical factors (e.g., line-of-sight, intervening topography, elevation differences) to determine the barrier parameters (e.g., locations, orientations, heights) and other measures that may be necessary to reduce, avoid or mitigate nighttime noise impacts associated with Moosa 50K pipeline tunneling operations. Because the mitigation for these impacts is speculative, the nighttime construction noise impacts associated with SV 50K/Moosa 50K Alternative would be significant and unmitigable.

The significant impacts from increased noise levels along Vigilante Road and Moreno Avenue (SV 50K component) and along Betsworth Road (Moosa 50K component) due to construction traffic (Impact SV/M/NV 2) cannot be reduced by any measure other than reducing construction-related vehicle trips below the estimated traffic volumes associated with the on-site quarry options. This is not considered practicable for the reasons provided in Sections 3.11.3.3 [Noise and Vibration for the Proposed Action] and 4.11.3.3 [Noise and Vibration for the Moosa 100K Alternative] of this EIR/EIS. There are no feasible mitigation measures available to reduce these
impacts to a level considered less than significant. Therefore, the impacts of the SV 50K/Moosa 50K Alternative would be significant and unmitigable.

5.11.3.4 Residual Impacts after Mitigation

No residual nighttime noise impacts associated with the SV 50K batch plant operations (Impact SV/M/NV 1) would remain if Mitigation Measure SV/M/NV 1-1 is feasible and is implemented. If the batch plant operations cannot be located at the on-site Marina Quarry Option, then the significant nighttime noise impacts from batch plant operations south of the SV 50K dam would be unmitigable. In addition, the noise impacts due to nighttime construction activities at both the SV 50K and Moosa 50K components (Impact SV/M/NV 1), and due to construction traffic volumes along Vigilante Road, Moreno Avenue, and Betsworth Road (Impact SV/M/NV 2), would be significant and unmitigable for the reasons stated in Sections 3.11.3.3 [Noise and Vibration for the Proposed Action] and 4.11.3.3 [Noise and Vibration for the Moosa 100K Alternative] of this EIR/EIS. Even with implementation of General Conditions and Standard Specifications listed in Section 1.9.5 (Introduction, Noise and Vibration) of this EIR/EIS, the significant impacts from nighttime noise levels from construction activities (Impact SV/M/NV 1), and from increased roadway noise levels due to construction traffic (Impact SV/M/NV 2), cannot be reduced to levels considered less than significant. These significant impacts would cease upon the completion of construction. A Statement of Overriding Considerations would be required for approval of the SV 50K/Moosa 50K Alternative.

5.11.4 Cumulative Effects

5.11.4.1 Other CIP Projects

CIP projects that would contribute to cumulative noise and vibration impacts of the SV 50K/Moosa 50K Alternative would include those projects that would also impact the Proposed Action and the Moosa 100K Alternative identified in Sections 3.11.4.1 and 4.11.4.1, 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 PEIR for the Regional Water Facilities Master Plan concluded that noise impacts associated with the proposed water infrastructure projects would occur primarily during construction and would be short-term in nature. From a long-term operational standpoint, noise from equipment or machinery operation at Water Authority facilities is mitigated to achieve the necessary noise limits established in the local regulations for noise sensitive locations. Therefore, there would be no long-term cumulative noise impacts due to CIP projects when combined with the SV 50K/Moosa 50K Alternative. The above conclusions regarding cumulative noise impacts for the four CIP projects described above are incorporated into the cumulative analyses in Section 5.11.4.3.
5.11.4.2 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. The construction activities at the San Vicente Pipeline tunnel portal and the operation of pumps at the San Vicente Pump Station Facility would not generate short-term or long-term noise impacts due to the absence of nearby noise-sensitive receptors, similar to the SV 50K component. However, construction related traffic for the San Vicente Pipeline project would contribute to cumulatively significant roadway noise levels at residences along vicinity roadways. The above conclusions regarding cumulative noise impacts for the ESP projects are incorporated into the cumulative analyses in Section 5.11.4.3.

5.11.4.3 Other Planned Projects with CIP and ESP Projects

This section evaluates the cumulative noise impacts of the SV 50K/Moosa 50K Alternative when considered in conjunction with the other planned projects listed in Table 5.2-1 (Section 5.2 [Cumulative Projects for the SV 50K/Moosa 50K Alternative] of this EIR/EIS), and incorporates the cumulative noise impacts associated with the CIP and ESP projects described in the above sections. The following cumulative noise analysis addresses each of the five significance thresholds listed in Section 5.11.3 above.

Cumulative Threshold 1: Expose noise-sensitive land uses to construction noise levels exceeding 75 dB(A) $L_{eq}$ during an 8-hour period between the hours of 7:00 a.m. and 7:00 p.m., Monday through Saturday; or to increases in ambient noise levels equal to or above 3 dB in areas where ambient noise levels already equal or exceed 75 dB(A)$L_{eq}$

Other cumulative projects in the vicinity of the SV 50K study area primarily include five mining projects and a number of residential subdivisions. Other cumulative projects in the vicinity of the Moosa 50K study area primarily include several small and large subdivisions along with a few small commercial, institutional and industrial developments. The combined noise levels from the construction and operation of these facilities and the CIP and ESP projects may be cumulatively significant. However, the SV 50K/Moosa 50K Alternative would not exceed noise standards during general daytime construction activities, and the contribution to this impact would not be cumulatively considerable. Therefore, cumulative noise impacts due to the SV 50K/Moosa 50K Alternative, when combined with impacts from the CIP, ESP, and other planned cumulative projects listed in Table 5.2-1, would be less than significant.

Cumulative Threshold 2: Expose sensitive receptors to construction noise between the hours of 7:00 p.m. and 7:00 a.m.

Nighttime noise impacts from the SV 50K component would be significant and unmitigable. None of the cumulative projects in the vicinity of this component would generate nighttime noise levels at the affected residence. However, the SV 50K component would contribute to a cumulative noise impact for the duration of construction with respect to nighttime construction activities. The significant nighttime noise impacts of the Moosa 50K component would be
mitigable, so would be less than cumulatively considerable. Therefore, cumulative nighttime noise impacts due to the SV 50K/Moosa 50K Alternative, when combined with impacts from the CIP, ESP, and other planned cumulative projects listed in Table 5.2-1, would be significant (*Impact SV/M/NV IC*).

**Cumulative Threshold 3: Expose off-site noise-sensitive receptors to a road noise level increase of more than 3 dB and either elevate noise levels above 60 dB CNEL or exceed a 3 dB increase above an already noisy condition**

The SV 50K component would cause significant and unmitigable noise increases along Vigilante Road and Moreno Avenue due to construction traffic. The Moosa 50K component would cause significant and unmitigable noise increases along Betsworth Road. These impacts would be limited to the construction period and would cease once construction is completed; however, no measures appear to be feasible to mitigate these impacts. Therefore, cumulative construction traffic noise impacts due to the SV 50K/Moosa 50K Alternative, when combined with impacts from the CIP, ESP, and other planned cumulative projects listed in Table 5.2-1, would be significant (*Impact SV/M/NV 2C*).

**Cumulative Threshold 4: Result in operational noise levels that exceed a one-hour average noise level of 50 dB(A) \(L_{eq}\) by day or 45 dB(A) \(L_{eq}\) at night at the property boundary**

The SV 50K/Moosa 50K Alternative would not result in significant noise impacts due to the operation of motorboats on the reservoirs or pump stations associated with the Moosa 50K component. Therefore, cumulative operational noise impacts due to the SV 50K/Moosa 50K Alternative, when combined with impacts from the CIP, ESP, and other planned cumulative projects listed in Table 5.2-1, would be less than significant.

**Cumulative Threshold 5: Expose persons to or generate excessive vibrations that (a) result in peak particle velocities in excess of 2 inches per second at the nearest structure; and (b) result in a daily average particle velocity in excess of 0.5 inches per second at the nearest sensitive receptor**

The SV 50K/Moosa 50K Alternative would not result in significant vibration impacts from blasting. Therefore, cumulative vibration impacts due to the SV 50K/Moosa 50K Alternative, when combined with impacts from the CIP, ESP, and other planned cumulative projects listed in Table 5.2-1, would be less than significant.

The SV 50K/Moosa 50K Alternative would not exceed construction noise standards during the daytime, would not generate vibration from blasting that would exceed the threshold at the nearest sensitive receptors, and would not generate noise above the significance thresholds during operation. Therefore, cumulative noise impacts of these activities due to the SV 50K/Moosa 50K Alternative, when combined with noise impacts associated with the CIP and ESP projects listed above, and other planned cumulative projects listed in Table 5.2-1, would be less than significant.
The SV 50K/Moosa 50K Alternative would result in significant construction noise impacts due to nighttime construction and increased traffic along Vigilante Road, Moreno Avenue, and Betsworth Road. These impacts were determined to be unmitigable. Therefore, cumulative construction noise impacts due to the SV 50K/Moosa 50K Alternative, when combined with noise impacts associated with the CIP and ESP projects listed above, and other planned cumulative projects listed in Table 5.2-1, would be significant for the duration of construction (Impacts SV/M/NV 1C and SV/M/NV 2C). No feasible mitigation measures are available to reduce the cumulative construction noise impacts of the SV 50K/Moosa 50K Alternative 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 project approval.