3.8 Noise and Vibration

Overview of Impacts

The analytical approach taken by this Subsequent EIR is described in Section 3.0 (Introduction to Environmental Analysis). The following section provides a description of existing noise and vibration conditions in the SSJID area, identifies noise and vibration regulations applicable to the project, and assesses the potential impacts of noise resulting from the proposed program. An analysis of cumulative impacts from other past, present and reasonably foreseeable projects is included in Section 5 (Cumulative Impacts) of this Subsequent EIR.

This table summarizes the noise and vibration impacts for each of the four actions evaluated in this EIR.

<table>
<thead>
<tr>
<th>Noise</th>
<th>Impact 3.8-1: Cause excessive temporary or periodic increase in noise</th>
<th>Impact 3.8-2: Cause excessive groundborne vibration</th>
<th>Impact 3.8-3: Cause excessive permanent increase in noise</th>
<th>Updated Plan to Provide Retail Electric Service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Municipal Services Review</td>
<td>Expanded Sphere of Influence</td>
<td>Proposed 80-acre Annexation</td>
<td>Less than Significant with Mitigation</td>
</tr>
<tr>
<td></td>
<td>No Impact</td>
<td>No Impact</td>
<td>Less than Significant</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No Impact</td>
<td>No Impact</td>
<td>No Impact</td>
<td>Less than Significant</td>
</tr>
<tr>
<td></td>
<td>No Impact</td>
<td>No Impact</td>
<td>Less than Significant</td>
<td>Less than Significant with Mitigation</td>
</tr>
</tbody>
</table>

3.8.1 Existing Setting

The Sphere Plan and MSR describe existing and planned services provided by SSJID, and these services are considered preexisting or previously approved for the purposes of this EIR. Section 2.0 describes the activities outlined in the Sphere Plan and MSR that are considered preexisting or previously approved activities rather than part of the proposed project. Activities supporting SSJID’s existing services are either considered part of the baseline, to the extent that they have already been undertaken, or included in the cumulative impacts analysis as reasonably foreseeable projects, to the extent that they have yet to be implemented.

SSJID is obligated to extend its services to anyone who requests service within the SSJID boundary, and use of the infrastructure necessary to provide utility services can involve short-term construction activities resulting in temporary noise from equipment use. Operation and maintenance of existing facilities also results in temporary noise from inspection and maintenance activities.

3.8.1.1 Community Noise

To describe environmental noise and to assess project impacts on areas that are sensitive to community noise, a measurement scale that simulates human perception is customarily used. The A-weighted scale of frequency sensitivity accounts for the sensitivity of the human ear, which is less sensitive to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. Decibels are logarithmic units that can be used to conveniently compare wide ranges of sound intensities.
Human activities cause community noise levels to be widely variable over time. For simplicity, sound levels are usually best represented by an equivalent level over a given time period (Leq) or by an average level occurring over a 24-hour day-night period (Ldn). The Leq, or equivalent sound level, is a single value (in dBA) for any desired duration, which includes all of the time-varying sound energy in the measurement period, usually one hour. The Ldn, or day-night average sound level, is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to nighttime sounds occurring between 10:00 p.m. and 7:00 a.m.

Community noise levels are usually closely related to the intensity of nearby human activity. Noise levels are generally considered low when ambient levels are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. In wilderness areas, the Ldn noise levels can be below 35 dBA. In small towns or wooded and lightly used residential areas, the Ldn is more likely to be around 50 or 60 dBA. Levels around 75 dBA are more common in busy urban areas, and levels up to 85 dBA occur near major freeways and airports. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, they nevertheless are considered to be adverse to public health.

The surrounding land uses dictate what noise levels would be considered acceptable or unacceptable. Lower levels are expected in rural or suburban areas than what would be expected for commercial or industrial zones. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding daytime levels. In rural areas away from roads and other human activity, the day-to-night difference can be considerably less. Areas with full-time human occupation and residency are often considered incompatible with substantial nighttime noise because of the likelihood of disrupting sleep. Noise levels above 45 dBA at night can result in the onset of sleep interference. At 70 dBA, sleep interference effects become considerable.

### 3.8.1.2 Noise Environment in the Project Area

The range of noise sources in the project area depends on the range of human activity and land use, which spans from high-density residential to open and agricultural within the project area. Ambient noise levels are lowest in the open space areas and away from the major roads and cities. Noise levels in the project area are the highest near Highway 120, Highway 99, and the Union Pacific Railroad. Most of the proposed new segments would occur adjacent to traveled roads and existing traffic noise.

In 2002, noise monitoring was conducted on behalf of SSJID near the railroad mainline and SR 99, south of Ripon. At approximately 200 feet from the center of Highway 99, the 10-minute Leq was found to be about 70 dBA in the daytime and 67 dBA in the nighttime. The data was gathered closer to the railroad, and at 60 feet from the railroad line, the 10-minute Leq was found to be about 80 dBA and with peak levels of 96 dBA (SSJID, 2004).

The existing Manteca Substation is a source of low-frequency (hum) noise and other occasional noise from transformer switching and fans, but the existing PG&E facility is assumed to comply with the Manteca Zoning Ordinance which limits nighttime noise to under 50 dBA, or under 45 dBA for hum.

### 3.8.1.3 Noise Sensitive Areas

Noise sensitive areas occur where excessive noise may convey annoyance. The San Joaquin County Development Title (Section 9-110.4) defines noise-sensitive uses as the following land use types: Residential, Administrative Offices, Child Care Services–Child Care Centers, Community Assembly, Cultural and Library Services,
Educational Services—General, Funeral and Interment Services—Undertaking, Lodging Services, Medical Services, Professional Services, Public Services, Recreation–Indoor Spectator, and Religious Assembly.

Noise sensitive uses are distributed throughout the project area. Low-, medium-, and high-density residences can each be found near many of the proposed work sites, especially within the cities. Schools, religious facilities, hospitals, and parks are also present and would be considered sensitive.

### 3.8.1.4 Applicable Regulations

**State Requirements**

Regulating environmental noise is generally the responsibility of local governments. However, California Government Code Section 53091 Sections (d) and (e) states the following:

(d) Building ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, wastewater, or electrical energy by a local agency.

(e) Zoning ordinances of a county or city shall not apply to the location or construction of facilities for the production, generation, storage, treatment, or transmission of water, or for the production or generation of electrical energy, facilities that are subject to Section 12808.5 of the Public Utilities Code, or electrical substations in an electrical transmission system that receives electricity at less than 100,000 volts. Zoning ordinances of a county or city shall apply to the location or construction of facilities for the storage or transmission of electrical energy by a local agency, if the zoning ordinances make provision for those facilities.

SSJID is an independent governmental agency with its own governing structure, and the activities described in the Sphere Plan and MSR involve existing and previously planned infrastructure and public utility development. As such, SSJID and its utility system construction activities in general are exempt from certain local governmental regulations, as specified below. Local government performance standards and regulations for community noise are shown for purposes of information and characterizing potential noise and vibration impacts.

**Local Requirements**

The following summarizes the requirements of the local communities.

**San Joaquin County Development Title.** Performance standards in the San Joaquin County Development Title (Section 9-1025.9) prohibit excessive noise that is incompatible with nearby sensitive land uses.

- Construction activities conducted between 6:00 a.m. and 9:00 p.m. on any day are exempt from noise standards. Furthermore, construction/demolition of structures or infrastructure and vibration caused by motor vehicles or trains are exempt from vibration standards.
- Projects that will result in new stationary noise sources must not create daytime (7:00 a.m. to 10:00 p.m.) noise levels over 50 dBA Leq or nighttime (10:00 p.m. to 7:00 a.m.) noise levels over 45 dBA Leq at the nearest location of offsite outdoor activity (i.e., the property line of the nearest sound receiver).
- Maximum sound levels (Lmax) must not exceed 70 dBA in the daytime or 65 dBA in the nighttime.
For single tone noise (such as hum), impulsive noise, or noise from speech or music, these standards are reduced by 5 dBA.

Vibration at any lot line must not be perceptible, except within industrial zones.

City of Manteca Zoning Code. Noise standards in the City of Manteca Zoning Code generally prohibit use of land in a manner that creates any dangerous or injurious noise or vibration (Section 17.13.020 and 17.13.040).

The Manteca Zoning Code does not specifically exempt construction activities from these standards. However, in a memo dated October 27, 2009 the city of Manteca identified a number of zoning code issues that need to be addressed as part of the Zoning Code Update. These issues identify adding an exemption to the noise standards for construction (Manteca, 2009).

Section 17.61.030 of the Manteca code defines “noise disturbance” as any sound that (1) endangers or injures the safety or health of human beings or animals, or (2) endangers or injures personal or real property, or (3) annoys or disturbs a reasonable person of normal sensitiveness. The time of day or night that the noise occurs and the duration or recurrence of the noise are factors that are considered in determining whether a violation exists.

Noise received by single and limited multiple family uses must not exceed 60 dBA daytime and 50 dBA in the nighttime. For multiple family, public, and neighborhood commercial uses, the limits are 60 dBA in the daytime and 55 dBA in the nighttime.

These standards are reduced by 5 dBA for noise rising or falling in pitch or volume and hum.

Vibration is limited depending upon the frequency and recurrence of the motion.

Escalon General Plan. Escalon maintains noise compatibility guidelines in its 2005 General Plan Noise Element (Escalon, 2005). The Noise Element identifies the following performance standards within Escalon:

- For boundaries of noise generating uses, noise levels must be under 65 dBA Ldn at sensitive uses.

- The policy for construction noise in Escalon allows noise created by temporary activities to occur for the shortest duration possible, as long as it is limited to time periods that will have the least possible adverse impact on surrounding land uses.

City of Ripon Municipal Code. Section 16.156.090 of the Ripon Municipal Code prohibits excessive noise that is incompatible with nearby sensitive land uses (Ripon, 2010a). The relevant limits in the code are as follows:

- Single and limited multiple family residential: noise sources must not create daytime (7:00 a.m. to 10:00 p.m.) noise levels over 60 dBA Leq or nighttime (10:00 p.m. to 7:00 a.m.) noise levels over 50 dBA Leq.

- Multiple family, public institutional and neighborhood commercial: noise sources must not create daytime noise levels over 60 dBA Leq or nighttime noise levels over 55 dBA Leq.

- Medium and heavy commercial: noise sources must not create daytime noise levels over 65 dBA Leq or nighttime noise levels over 60 dBA Leq.

- Light industrial: noise levels must not exceed 70 dBA anytime.

- Heavy industrial: noise levels must not exceed 75 dBA anytime.
For noise operating at a percent of any one hour period, these standards are increased by: 5 dBA (20 percent of any one hour period), 10 dBA (5 percent of any one hour period), 15 dBA (1 percent of any one hour period).

For impulse noise (such as hammering) or noise rising or falling in pitch or volume (hum, screech), these standards are reduced by 5 dBA.

Sources of vibration in Ripon are limited by Section 16.156.120 of the Ripon Municipal Code, which prohibits vibration associated with any use that is discernible beyond the boundary line of the property.

**City of Ripon General Plan 2040.** The City of Ripon General Plan 2040 Community Health and Safety section includes policies to protect community health and safety (Ripon, 2010b) and generally protect residents from health hazards and annoyance associated with excessive noise levels. Specific that could apply to the proposed project include:

- **Policy J1.** To require noise buffering, barriers, and/or setbacks as construction techniques in developments in the proximity to the highway, railroad, or major streets as required to maintain City noise standards.
- **Policy J4.** To examine any source of noise projected at or above 70 dB at 50 feet for compatibility with existing or projected planned neighborhood land use before granting a rezoning or conditional use permit.
- **Policy J6.** The following Land Use Compatibility Standards are the adopted noise standards of the City of Ripon.

<table>
<thead>
<tr>
<th>Land Use Type</th>
<th>Normally Unacceptable (dB in Ldn)</th>
<th>Unacceptable (dB in Ldn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential – Multi Family</td>
<td>70–75</td>
<td>&gt; 75</td>
</tr>
<tr>
<td>Transient Lodging – Motel, Hotel</td>
<td>70–75</td>
<td>&gt; 75</td>
</tr>
<tr>
<td>Schools, Libraries, Churches, Hospitals, Nursing Homes</td>
<td>70–80</td>
<td>&gt; 80</td>
</tr>
<tr>
<td>Auditoriums, Concert Halls, Amphitheaters</td>
<td>&gt; 65</td>
<td>N/A</td>
</tr>
<tr>
<td>Sports Arena, Outdoor Spectator Sports</td>
<td>&gt; 70</td>
<td>N/A</td>
</tr>
<tr>
<td>Playgrounds, Neighborhood Parks</td>
<td>68–75</td>
<td>&gt; 73</td>
</tr>
<tr>
<td>Golf Courses, Riding Stables, Water Recreation, Cemeteries</td>
<td>70–80</td>
<td>&gt; 80</td>
</tr>
<tr>
<td>Office Buildings, Business Commercial and Professional</td>
<td>&gt; 75</td>
<td>N/A</td>
</tr>
<tr>
<td>Industrial, Manufacturing, Utilities, Agriculture</td>
<td>&gt; 75</td>
<td>N/A</td>
</tr>
</tbody>
</table>

- **Policy J7.** To minimize the duration of heavy equipment operations in the vicinity of residential uses or other sensitive noise receptors, especially during evening and early morning hours.

### 3.8.2 Environmental Impacts and Mitigation Measures

#### 3.8.2.1 Significance Criteria

The following significance criteria for noise and vibration were derived from Appendix G of the State CEQA Guidelines. The proposed project would result in potentially significant impacts if it would:

- Cause exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
• Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project on days and at times when such heightened noise levels are not permitted by the applicable local government noise ordinance;
• Cause exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
• Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
• For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; or
• For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

The discussion of whether project-related activities and infrastructure could generate noise in excess of local general plan standards or noise ordinances is combined with the following discussions of whether noise increases would be substantial compared to the levels existing without the project.

The SSJID territory and SOI are located within two miles of the Stockton Metropolitan Airport, but no feature of the proposed project would expose people in the area to excessive noise from aircraft. SSJID would not use helicopters for construction or project-related maintenance activities because all of SSJID’s infrastructure is readily accessible from the ground level. As such, airport or aircraft noise is not addressed further.

### 3.8.2.2 Impacts and Mitigation

The following section analyzes the noise impacts of the four separate actions:

• Sphere Plan and Municipal Services Review,
• Proposed Expanded Sphere of Influence,
• Proposed 80-acre annexation, and
• Updated Plan to Provide Retail Electric Service.

**Sphere Plan and Municipal Services Review**

This analysis discusses the potential impacts associated with the Sphere Plan and MSR that can be identified during this programmatic review, and separate discussions follow disclosing the impacts related to the other adoption and approval actions: the proposed SOI expansion, proposed 80-acre annexation, and plan to provide retail electric service. Projects that would occur with or without the adoption and approval of the Sphere Plan and MSR, such as the Water Transfer Renewal Project, Phase II of the South County Water Supply Program (SCWSP), the supply of drinking water to Escalon and Ripon, and the Division 9 Project were subject to or will in the future be subject to separate environmental review. These infrastructure improvements are analyzed as part of this EIR as foreseeable projects for potential cumulative impacts (Section 5, Cumulative Impacts). Improvements associated with the proposed retail electric service plan that appear in the Sphere Plan and MSR are analyzed below as part of the Updated Plan to Provide Retail Electric Service.

The Sphere Plan and MSR describe a variety of infrastructure investments necessary to provide an adequate level of service within the SOI. The analysis of the Sphere Plan and MSR discusses the general types of site-specific impacts that could occur. However, no construction activities are proposed for approval
with the potential adoption of the Sphere Plan and MSR. Any construction related to these infrastructure investments would occur with or without the adoption and approval of the Sphere Plan and MSR.

The MSR, technically, is not a plan that commits SSJID to any particular course of action; rather, it is a review of services provided within a particular area, with the idea that it will provide information useful to LAFCo as it makes decisions.

**Impact 3.8-1: Cause excessive temporary or periodic increase in noise**

The Sphere Plan and MSR describe a variety of infrastructure improvements necessary to provide an adequate level of service within the SOI. Infrastructure improvements and maintenance activities needed for providing services, at times, requires mobilizing a construction workforce. The number of workers necessary and the related construction or maintenance traffic would be limited to only the needed crews, usually a few workers. Haul truck traffic would include trucks carrying equipment and materials, such as pipes or trenchers. These activities are typically located a minimum of 50 feet or more away from residential structures, given the typical setbacks of the residences from their property lines and the setback of public utility easements. However, because the existing and previously planned services provided by SSJID and improvements described in the Sphere Plan and MSR are necessary to support existing services, no new construction or change in action would occur with adoption of the Sphere Plan and MSR. No impacts related to excessive temporary or periodic increase in noise would occur with adoption of the Sphere Plan and MSR.

*Mitigation for Impact 3.8-1*

No mitigation is required.

**Impact 3.8-2: Cause excessive groundborne vibration**

As discussed above for Impact 3.8-1, because the existing and previously planned services provided by SSJID and improvements described in the Sphere Plan and MSR are considered baseline activities, no construction proposal or change in action would occur with adoption of the Sphere Plan and MSR. No impacts related to excessive groundborne vibration would occur.

*Mitigation for Impact 3.8-2*

No mitigation is required.

**Impact 3.8-3: Cause excessive permanent increase in noise**

As discussed above for Impact 3.8-1, because the existing and previously planned services provided by SSJID and improvements described in the Sphere Plan and MSR are necessary to support existing services, no new construction or change in action would occur. Operational noise would be that of existing setting. Adoption of the Sphere Plan and MSR would not increase operational, permanent noise levels. No impacts related to excessive permanent noise increases would occur with adoption of the Sphere Plan and MSR.

*Mitigation for Impact 3.8-3*

No mitigation is required.
Proposed Expanded Sphere of Influence

The following presents a general discussion of whether the proposed expanded sphere of influence (SOI) would create an adverse effect to noise and vibration. This analysis is a programmatic assessment of the proposed SOI described in Section 2.3.2.

The expanded SOI would make the SOI boundaries consistent with the Manteca city limits. The proposed SOI requires no construction or operation activities. Because there would be no construction or operation activities, the proposed SOI would have no potential to cause noise or vibration. There would be no potential to cause an increase in noise that would be excessive or in excess of local general plan standards or noise ordinances. There would be no temporary or permanent noise or vibration sources associated with the proposed SOI.

Proposed 80-Acre Annexation

The following presents a discussion of whether the 80-acre annexation would create an adverse effect related to noise and vibration. This analysis is a project-level assessment of the annexation. This annexation has been proposed as a separate action wholly independent of and for distinctly different reasons than SSJID’s proposed plan to provide retail electric services, and it is not dependent in any way upon SSJID’s separate proposal to provide such electric services.

The proposed 80-acre annexation is described in Section 2.3.3 and would be located in unincorporated San Joaquin County near the intersection of French Camp Road and Austin Road. Construction activities would include installation of a sprinkler sump from the existing SSJID irrigation facilities to the 80-acre property. This construction would be limited in nature and is expected to take one month or less to complete. The parcel is currently in agriculture production as an existing orchard. The property is surrounded on all sides by orchards. The noise sensitive areas in the vicinity of the annexation are limited to rural residential homes along the roadways accessing the 80-acre annexation, including French Camp Road, Austin Road, and Castle Road.

The proposed annexation would not result in any new source of or potential for groundborne vibration. Therefore, the potential for adverse vibration under the annexation is not discussed further.

Impact 3.8-1: Cause excessive temporary or periodic increase in noise

Construction activities would introduce the presence of equipment, materials, and a small work force for approximately one month or less for installing the sprinkler sump. No new infrastructure would need to be installed for SSJID to provide irrigation service to the property, except for the landowners’ installation of the sprinkler sump. As the landowner would complete installation of the sprinkler sump, any potential construction noise would be isolated within the subject property and not result in any substantial change in noise levels for adjacent receptors, which are exposed to similar occasional noise due to agricultural operations on the property. The work would occur during daytime business hours. As the annexation site is located within unincorporated San Joaquin County, any construction-related noise would be consistent with San Joaquin County Development Title Section 9-1025.9 noise standards (as identified in Section 3.8.1.4), which provides an exemption for construction activities conducted between 6:00 am and 9:00 pm, and this noise impact would be less than significant.

Mitigation for Impact 3.8-1

No mitigation is required.
Impact 3.8-3: Cause excessive permanent increase in noise

The proposed annexation is currently in agriculture production, and the annexation would lead to the owner installing a sprinkler sump from the existing SSJID irrigation facilities to serve the property. This new infrastructure would not be a substantial source of noise, and use of the new irrigation system would be consistent with the existing agricultural use. Once operational, the new sprinkler system would only generate noise within the subject property and at close proximity of each sprinkler head, resulting in no substantial permanent change in noise levels for adjacent receptors. Operational activities would be consistent with San Joaquin County Development Title Section 9-1025.9 noise standards, as identified in Section 3.8.1.4, and the impact would be less than significant.

Mitigation for Impact 3.8-3

No mitigation is required.

Updated Plan to Provide Retail Electric Service

The following presents a discussion of whether the updated plan to provide retail electric service would create an adverse effect related to noise and vibration. This analysis is a project-level and programmatic-level assessment of the proposed electrical system upgrades.

The proposed plan to provide retail electric service is described in Section 2.3.4 and would include SSJID plans to acquire the electric distribution facilities currently owned, operated, and used by PG&E to provide retail electric service to end users within the SSJID territory. These acquisitions include portions of the Manteca, Ripon, Jack Tone, and MID Clough substations, affecting 746 miles of distribution lines or cables within San Joaquin County, including the cities of Manteca, Escalon, and Ripon. Some new infrastructure would need to be built to physically and operationally separate the facilities that SSJID plans to acquire from PG&E’s remaining electric distribution system and to ensure that PG&E’s remaining customers do not experience any degradation in service. Noise sensitive uses in the proposed electric service area include receptors in close proximity to the existing substations and distribution lines, as well as those along roadways accessing the sites.

SSJID has no immediate plans to annex areas within Area “D” or Area “E” (Figure 2-2 in the Project Description) or to provide retail electric service in these areas. These areas are outside the current SSJID territory, but inside its Sphere of Influence. However, if the current proposal for retail electric service is approved and if the areas are annexed in the future, SSJID would likely expand this service to Area “E” within 10 years and to Area “D” within 30 years. Foreseeable future impacts from this possible expansion of SSJID’s retail electric service are addressed generally in the discussion below of programmatic impacts. Mitigation measures that apply to the proposal for retail electric service would likely also apply to the future expansion of electric service within the SOI. Approval of the proposed project, however, would not commit SSJID to exactly these mitigation measures for possible future annexations because considerations may arise within 30 years that would make the near-term measures obsolete or outdated. Specific proposals for annexations or service beyond SSJID’s existing territory may need to undergo the project-level environmental review process and other required approvals should SSJID decide to pursue such an annexation or service expansion in the future.

Impact 3.8-1: Cause excessive temporary or periodic increase in noise

Construction necessary for implementing the proposed plan to provide retail electric service would require short-term use of heavy-duty equipment such as trenchers, excavators, drill rigs, cranes, and trucks in
close proximity to residential areas and other sensitive land use types. During the anticipated duration of construction work to modify the distribution system, occurring primarily over approximately nine months, concurrent activity would occur across the SSJID territory and at some locations immediately outside the District boundaries.

Construction activity would also be centered at Manteca, Ripon, and Clough Substations for installing new transformers and switching over service. During the construction phase, crews would access the substations frequently as new feeders are built around the substations. Construction of the proposed Jack Tone Substation would require about 3 months of work followed by inspection and testing before the stations are energized. While the location of the Jack Tone Substation has been identified, as electricity demand grows, SSJID would be obligated to expand its distribution system as needed at locations that have not yet been identified, as it must provide services and basic infrastructure for new customers and growth in the customer base over the long term. Building long-term improvements of electric system infrastructure would involve similar construction noise as that shown here for the Jack Tone Substation. Construction of new feeders and reconductoring activities would require typically a day or two of crew work at any one location. Installing the feeders, including underground cable, and the reconductoring activity would affect the largest number of receptors because the work would be scattered throughout the SSJID territory.

Noise levels for typical pieces of construction equipment (at 50 feet) are listed in Table 3.8-1.

Construction activities at the substation sites, in the project right-of-way, and at staging areas would create both intermittent and continuous noises. Intermittent noise would be caused by periodic, short-term equipment operation, such as jackhammer use during foundation work. Continuous noise would emanate from equipment operation over longer periods, such as steady generator or excavator use. The intermittent noise levels from a construction work spread would typically range from 85 to 92 dBA at 50 feet. These would be the highest levels expected for foundation development or underground excavation activities, but peaks could range up to 98 dBA if rock drilling occurs, although it is not expected to be necessary. Continuous noise levels from construction would be lower because most equipment would not be operated steadily. At 50 feet, continuous noise levels could range up to about 82 dBA. Because sound fades over distance, these levels would diminish over additional distance and could be reduced further by intervening structures. At 100 feet from a work spread, continuous noise levels could range up to 76 dBA and at 200 feet, up to 70 dBA.

Construction would also cause noise away from work areas, primarily from commuting workers and from trucks needed to bring materials to the sites. Haul trucks would make trips to bring poles, conductor line, and other materials to the construction sites and remove excavated soil and waste. The peak noise levels associated with passing trucks and commuting worker vehicles would be approximately 70

<table>
<thead>
<tr>
<th>Table 3.8-1. Typical Noise Levels for Construction Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
</tr>
<tr>
<td>Front loaders</td>
</tr>
<tr>
<td>Backhoes, excavators</td>
</tr>
<tr>
<td>Tractors, dozers</td>
</tr>
<tr>
<td>Graders, scrapers</td>
</tr>
<tr>
<td>Trucks</td>
</tr>
<tr>
<td>Concrete pumps, mixers</td>
</tr>
<tr>
<td>Cranes (movable)</td>
</tr>
<tr>
<td>Cranes (derrick)</td>
</tr>
<tr>
<td>Forklifts</td>
</tr>
<tr>
<td>Pumps</td>
</tr>
<tr>
<td>Generators</td>
</tr>
<tr>
<td>Compressors</td>
</tr>
<tr>
<td>Pneumatic tools</td>
</tr>
<tr>
<td>Jack hammers, rock drills</td>
</tr>
<tr>
<td>Pavers</td>
</tr>
<tr>
<td>Compactors</td>
</tr>
<tr>
<td>Drill rigs</td>
</tr>
</tbody>
</table>

to 75 dBA at 50 feet, and would be concentrated along the major arterial streets and smaller streets and access roads leading to individual work sites.

SSJID would take routine precautions to avoid creating unnecessary noise, especially near residential or other sensitive land uses. Depending on the persistence of construction activity and its proximity to the residential and other sensitive receptors in the project area and along haul routes, construction noise could cause some irritation and generate complaints. SSJID would coordinate all construction activities to occur during the daytime, unless required by an emergency repair. Construction would not be expected to cause a violation of any local standards regarding timing of construction activity (allowed to occur between 6:00 a.m. and 9:00 p.m. in San Joaquin County). Because daytime construction noise is explicitly exempt from the San Joaquin County noise standards, the potential to violate the standards in unincorporated areas would be less than significant. Although the code in Manteca and Ripon does not specifically exempt construction activities from these standards, daytime construction is allowed (7:00 a.m. to 7:00 p.m.) if appropriate noise controls are incorporated. Uncontrolled construction noise could therefore generate complaints at noise sensitive uses. In order to ensure that excessive noise levels are avoided, appropriate noise controls are incorporated, and relevant jurisdictions are notified of planned work, Mitigation Measures 3.8-1a and 3.8-1b are recommended. Implementing these measures would ensure that temporary noise from construction would not be excessive, resulting in a less than significant impact.

The impacts of the possible future expansion of SSJID’s retail electric service to Area “D” or Area “E” (Figure 2-2 in Chapter 2, Project Description) would be similar to these impacts described for the proposed project; however, there are no plans for this possible expansion currently under consideration. Mitigation measures that apply to the current proposed project would likely also apply to these future, programmatic impacts.

**Mitigation for Impact 3.8-1**

**3.8-1a** Implement appropriate noise controls during construction. During construction of infrastructure improvements, including modifications to electric distribution substations and distribution facilities, SSJID shall:

- Limit noise generating activities to occur only between the hours of 7:00 a.m. and 7:00 p.m. when within 500 feet of a residence or other noise-sensitive land use,
- Use only internal combustion engine-driven equipment that is equipped with intake and exhaust mufflers that are in good condition and appropriate for the equipment,
- Limit unnecessary idling of construction equipment,
- Inform nearby residents and property owners of anticipated noise disturbances and the availability of the public liaison between two and four weeks prior to construction, and provide a public liaison person to respond to concerns about construction disturbances. SSJID shall establish a toll-free telephone number for receiving questions or complaints during construction and procedures for responding to callers. The liaison shall determine the cause of any noise complaints and impose reasonable noise control measures to correct the origin of the complaint. [Updated from 2006 Final EIR Mitigation Measure 3.8-1a]

**3.8-1b** Provide notice of construction noise and vibration. SSJID shall submit a letter of advance notification to the City of Manteca and/or City of Ripon for planned construction activities within 500 feet of a residence or other noise-sensitive land use inside the City of
Manteca and/or City of Ripon. The letter shall be provided to the applicable city at least four weeks prior to commencing electric distribution system construction. The letter describes the planned construction activities and identify contractor specifications established by SSJID to avoid excessive noise and vibration levels, including temporary noise barriers or acoustic blankets for equipment and the steps taken per Mitigation Measure 3.8-1a. [Updated from 2006 Final EIR Mitigation Measure 3.1-3a and Mitigation Measure 3.1-3b]

Impact 3.8-2: Cause excessive groundborne vibration

Groundborne vibration levels from construction equipment and activities might be perceptible to receptors in the immediate vicinity of the distribution line work or substation sites. The activity that would be most likely to cause groundborne vibration would be the passing of heavy trucks on uneven surfaces. The impact from construction-related groundborne vibration would be short-term and confined to only the immediate area around activity (within about 25 feet). As pole locations and work sites, including the work within the existing Manteca Substation, would be more than 25 feet from residences, no homes would be exposed to excessive vibration, and the impact would be less than significant.

The impacts of the possible future expansion of SSJID’s retail electric service to Area “D” or Area “E” (Figure 2-2 in Chapter 2, Project Description) would be similar to these impacts described for the proposed project; however, there are no plans for this possible expansion currently under consideration.

Mitigation for Impact 3.8-2

No mitigation is required.

Impact 3.8-3: Cause excessive permanent increase in noise

The retail electric service plan would introduce new permanent noise sources at the proposed Jack Tone Substation and along new segments of distribution lines. Operation of the transformers and cooling fans at the new and modified substations, the corona effect of the new overhead segments of lines, and routine inspection and maintenance activities could each potentially cause offensive noise.

Substations usually generate steady noise from the process of power conversion and the operation of transformers and auxiliary equipment needed to cool the transformers. Transformer noise contains pure-tone or “hum” components. This tonal quality is typically the most offensive characteristic of transformer noise. Auxiliary equipment includes cooling fans and oil pumps that operate depending on the internal temperature of the transformer oil.

New equipment proposed for the Manteca, Ripon, and Clough Substations would include a new 115/17 kV transformer at each. This equipment could contribute to increased noise levels at the three substations, and residences are located within 500 feet of each substation. Without an additional measure to ensure that the modifications would not exacerbate noise levels within these communities, residences near the Manteca, Ripon, and Clough Substations could experience potentially significant noise impacts. Mitigation is identified below (Mitigation Measure 3.8-3a) to reduce this potentially significant impact to a less than significant level.

Noise from the proposed Jack Tone Substation, including two new 115/17 kV transformers is expected to be less than 55 dBA for all locations within 200 feet of the substation boundaries, based on data from and experience with similar substation designs. Noise generated by the proposed Jack Tone Substation would
occur in an area that is currently dedicated to agricultural use. The new equipment would be required to achieve the ambient noise standards of the San Joaquin County Development Title Section 9-1025.9, as discussed in Section 3.8.1.4.\(^1\) This means that the equipment at the substation would need to achieve 45 dBA Leq at the nearest residences or outdoor activity areas. Based on the distance to the nearest residential use on Louise Avenue being approximately 850 feet \((\text{Aspen, 2010})\) and the natural attenuation and spreading of noise as it travels over the soft surfaces of the agricultural surroundings \((\text{reduction of at least 6 dBA for each doubling of distance})\), noise from the proposed Jack Tone Substation site would attenuate to levels below San Joaquin County Development Title Section 9-1025.9 noise standards before reaching any receptor. As such, no potentially significant noise impact would occur and the substation would be consistent with San Joaquin County Development Title Section 9-1025.9.

While the location of the Jack Tone Substation has been identified, the location of the long-term improvements and upgrades for new customers and growth in the customer base has not been identified. This may include a potential future new substation south of Manteca to serve anticipated demand after 2026. While the location of such a substation is not known at this time, to ensure operational noise impacts are reduced to the maximum extent feasible, Mitigation Measure 3.8-3a is recommended below to apply to all new substation equipment. While a potential future substation may be needed in the unincorporated area, the application of noise performance standards from the City of Manteca and the City of Ripon would ensure consistency.

Audible power line noise is generated from corona discharge, which is usually experienced as a random crackling or hissing sound. The potential for noise from corona discharge is greatest with high voltage lines during wet weather or near inconsistencies or cuts in the metal surface of the line itself. For example, noise generated by a 220 kV line during wet weather conditions is usually expected to be about 40 dBA at 40 feet from the outer conductor. Corona noise associated with proposed new segments of the 17 kV distribution system would be considerably less and barely audible to noise receptors, such as residences near the right-of-way, due to the relatively low voltage and existing ambient noise levels, which can mask corona noise. Because no substantial increase in noise levels would occur along the power lines, operational noise impacts associated with corona noise would be less than significant.

Maintenance work would vary by location and frequency within the entire SSJID territory, but noise related to maintenance work would be localized and temporary by its nature. Maintenance work that would be performed by SSJID in the upkeep of the electric distribution facilities would be exempt from the San Joaquin County Development Title noise standards \([\text{as in Section 9-1025.9(c)(7)}]\). Only periodic visits to the lines and substations would be necessary for routine inspection and maintenance of the distribution system. Visits to the substations would not normally involve a large crew. Additional noise produced at the substation may occur during activation of circuit breakers. Because each of these noise sources would be infrequent and isolated, no substantial noise increase would occur, and maintenance work conducted by SSJID would cause less than significant noise impacts.

To address the potentially significant impact of noise from operation of the new equipment at the existing substations, the following measure is recommended for reducing noise impacts to less than significant levels.

\(^1\) The requirements of Section 9-1025.9 include that: (1) Projects that will result in new stationary noise sources must not create daytime noise levels over 50 dBA Leq or nighttime noise levels over 45 dBA Leq at the nearest location of offsite outdoor activity \((i.e., \text{the property line of the nearest sound receiver})\); (2) Maximum sound levels \((L_{\text{max}})\) must not exceed 70 dBA in the daytime or 65 dBA in the nighttime.
SSJID Plan to Provide Retail Electric Service, Sphere Plan, MSR, and Annexation

3.8 Noise and Vibration

The impacts of the possible future expansion of SSJID’s retail electric service to Area “D” or Area “E” (Figure 2-2 in Chapter 2, Project Description) would be similar to these impacts described for the proposed project; however, there are no plans for this possible expansion currently under consideration. Mitigation measures that apply to the current proposed project would likely also apply to these future, programmatic impacts.

\textit{Mitigation for Impact 3.8-3}

\textbf{3.8-3a Design substation modifications to avoid noise increases.} SSJID shall use a combination of site planning, equipment selection, noise attenuating structures, and noise barriers, as needed to achieve the ambient noise standards equivalent to those of the City of Manteca Zoning Ordinance Section 17.13.040, Ripon Municipal Code Section 16.156.090, and City of Ripon General Plan 2040 Community Health and Safety section Policy J6 (land use compatibility standards). The equipment associated with the modifications at the Manteca, Ripon, and Clough Substations shall be designed to achieve 45 dBA Leq at the nearest residences. [Updated from 2006 Final EIR Mitigation Measure 3.2-1a]

\textbf{3.8.3 Conclusion}

With implementation of the identified mitigation measures, all of the potential impacts of the project related to noise and vibration would be reduced to less than significant levels. Appropriate noise controls would be implemented during construction, and substation equipment would be properly designed to avoid potential noise impacts.
3.8.4 Mitigation Monitoring Program

Table 3.8-2 shows the mitigation monitoring, compliance, and reporting program for Noise and Vibration.

Table 3.8-2. Mitigation Monitoring Program – Noise and Vibration

<table>
<thead>
<tr>
<th>IMPACT 3.8-1</th>
<th>Cause excessive temporary or periodic increase in noise</th>
</tr>
</thead>
<tbody>
<tr>
<td>MITIGATION MEASURE</td>
<td>3.8-1a: Implement appropriate noise controls during construction</td>
</tr>
<tr>
<td>Location</td>
<td>Any electric distribution system construction site</td>
</tr>
<tr>
<td>Monitoring / Reporting Action</td>
<td>Public liaison to monitor noise levels and public noise complaints</td>
</tr>
<tr>
<td>Effectiveness Criteria</td>
<td>Public liaison to keep notices and complaints on file for 90 days after completion of each construction project</td>
</tr>
<tr>
<td>Responsible Agency</td>
<td>South San Joaquin Irrigation District</td>
</tr>
<tr>
<td>Timing</td>
<td>Prior and during construction</td>
</tr>
<tr>
<td>MITIGATION MEASURE</td>
<td>3.8-1b: Provide notice of construction noise and vibration</td>
</tr>
<tr>
<td>Location</td>
<td>Construction of new electric distribution system facilities inside incorporated Cities of Manteca and/or Ripon</td>
</tr>
<tr>
<td>Monitoring / Reporting Action</td>
<td>Public liaison to monitor noise levels, receptor distances, and public noise complaints</td>
</tr>
<tr>
<td>Effectiveness Criteria</td>
<td>Public liaison to keep approved variances on file for 90 days after completion of each construction project</td>
</tr>
<tr>
<td>Responsible Agency</td>
<td>South San Joaquin Irrigation District</td>
</tr>
<tr>
<td>Timing</td>
<td>Prior and during construction</td>
</tr>
<tr>
<td>IMPACT 3.8-3</td>
<td>Cause excessive permanent increase in noise</td>
</tr>
<tr>
<td>MITIGATION MEASURE</td>
<td>3.8-3a: Design substation modifications to avoid noise increases</td>
</tr>
<tr>
<td>Location</td>
<td>Proposed modifications to Manteca, Ripon, and Clough Substation and any potential future substation needed for growth in the customer base</td>
</tr>
<tr>
<td>Monitoring / Reporting Action</td>
<td>Provide information showing noise control design or approach</td>
</tr>
<tr>
<td>Effectiveness Criteria</td>
<td>Modified equipment achieves less than 45 dBA Leq at nearest residences</td>
</tr>
<tr>
<td>Responsible Agency</td>
<td>South San Joaquin Irrigation District</td>
</tr>
<tr>
<td>Timing</td>
<td>Prior to selecting new equipment</td>
</tr>
</tbody>
</table>

3.8.5 References


