3.12 Noise

This section of the Final Environmental Impact Statement/ Environmental Impact Report (referred to throughout as the Final EIS/R) characterizes the existing noise resources within the Phase 2 project area and analyzes whether implementation of the project would cause a substantial adverse effect on noise quality. The information presented is based on a review of the existing noise resources within the area and pertinent federal, state and local regulations. Using this information as context, an analysis of the noise-quality-related environmental impacts of the project is presented for each alternative. The program-level mitigation measures described in Chapter 2, Alternatives, would be implemented with the project. Therefore, this section only discusses additional mitigation or project-level measures as needed.

3.12.1 Physical Setting

Introduction and Methodology

The development of the baseline conditions, significance criteria, and impact analysis in this section is commensurate to and reliant on the analysis conducted in the 2007 South Bay Salt Pond (SBSP) Restoration Project Environmental Impact Statement/Report (2007 EIS/R). It includes a summary of the physical setting, existing noise levels, and the regulatory setting. Applicable regional, state, and local plans and policies concerning noise and vibration were reviewed during preparation of this Final EIS/R.

Acoustic Fundamentals

Noise is generally defined as sound that is loud, disagreeable, unexpected, or unwanted. Sound, as described in more detail below, is mechanical energy transmitted in the form of a wave because of a disturbance or vibration, and as any pressure variation in air that the human ear can detect. Negative effects of noise exposure include physical damage to the human auditory system, interference, and disease. Exposure to noise may result in physical damage to the auditory system, which may lead to gradual or traumatic hearing loss. Gradual hearing loss is caused by sustained exposure to moderately high noise levels over a period of time; traumatic hearing loss is caused by sudden exposure to extremely high noise levels over a short period. Gradual and traumatic hearing loss may both result in permanent hearing damage. Also, noise may interfere with or interrupt sleep, relaxation, recreation, and communication. Although most interference may be classified as annoying, the inability to hear a warning signal may be dangerous. Noise may also be a contributor to diseases associated with stress, such as hypertension, anxiety, and heart disease. The degree to which noise contributes to such diseases depends on the frequency, bandwidth, and level of the noise, and the exposure time (Caltrans 1998).

Noise Descriptors. The selection of a proper noise descriptor for a specific source is dependent on the spatial and temporal distribution, duration, and fluctuation of the noise. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise are defined below (Caltrans 1998; Lipscomb and Taylor 1978).

- L_{max} (Maximum Noise Level): The maximum instantaneous noise level during a specific period of time. The L_{max} may also be referred to as the peak (noise) level.
- L_{min} (Minimum Noise Level): The minimum instantaneous noise level during a specific period of time.

- L_X (Statistical Descriptor): The noise level exceeded X percent of a specific period of time.
- L_{eq} (Equivalent Noise Level): The energy mean (average) noise level. The instantaneous noise levels during a specific period of time in A-weighted decibels (dBA) are converted to relative energy values. From the sum of the relative energy values, an average energy value is calculated, which is then converted back to dBA to determine the L_{eq}. In noise environments determined by major noise events, such as aircraft overflights, the L_{eq} value is heavily influenced by the magnitude and number of single events that produce the high noise levels;
- L_{dn} (Day-Night Noise Level): The 24-hour L_{eq} with a 10 dBA "penalty" for noise events that occur during the noise-sensitive hours between 10 p.m. and 7 a.m. In other words, 10 dBA is "added" to noise events that occur in the nighttime hours, and this generates a higher reported noise level when determining compliance with noise standards. The L_{dn} attempts to account for the fact that noise during this specific period of time is a potential source of disturbance with respect to normal sleeping hours.
- CNEL (Community Noise Equivalent Level): The CNEL is similar to the L_{dn} described above, but with an additional 5 dBA "penalty" added to noise events that occur during the noise sensitive hours between 7 p.m. to 10 p.m., which are typically reserved for relaxation, conversation, reading, and television. If using the same 24-hour noise data, the reported CNEL is typically approximately 0.5 dBA higher than the L_{dn}.
- SENL (Single Event [Impulsive] Noise Level): The SENL describes a receiver's cumulative noise exposure from a single impulsive noise event, which is defined as an acoustical event of short duration that involves a change in sound pressure above some reference value. SENLs typically represent the noise events used to calculate the L_{eq}, L_{dn}, and CNEL.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given noise environment. A common statistical tool to measure the ambient noise level is the average, or equivalent, sound level L_{eq}, which corresponds to a steady-state A-weighted sound level containing the same total energy as a time-varying signal over a given period (usually 1 hour). The L_{eq} is the foundation of the composite noise descriptors such as L_{dn} and CNEL, as defined above, and shows good correlation with community response to noise.

Vibration

Vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of groundborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, such as factory machinery, or transient, such as explosions. As is the case with airborne sound, groundborne vibrations may be described by amplitude and frequency. Construction vibrations can be transient, random, or continuous. Transient construction vibrations are generated by blasting, impact piledriving, and wrecking balls. Continuous vibrations result from vibratory piledrivers, large pumps, horizontal directional drilling, and compressors. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment.

Regional Setting

The communities along San Francisco Bay (Bay) are primarily urban in character; however, open space and other undeveloped areas (including ecological reserves, wildlife refuges, and parks) fringe the southern portion of the Bay and are scattered in and around the communities.

Noise-Sensitive Uses

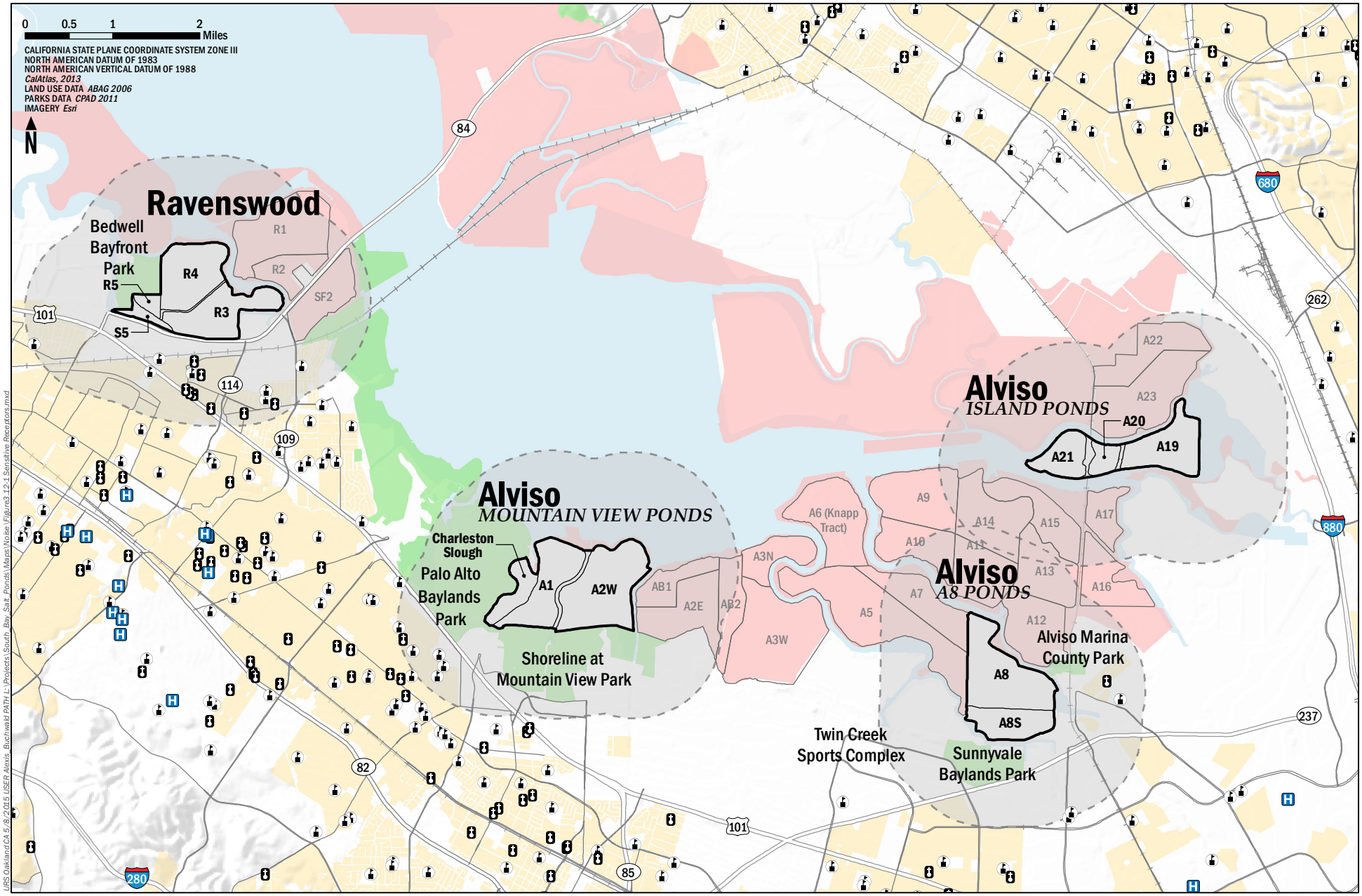
Noise-sensitive land uses generally include those uses where exposure to noise would result in adverse effects and uses where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Other noise-sensitive land uses include schools, hospitals and health-care facilities, parks, hotels, offices, places of worship, libraries, and other uses where low interior noise levels are essential. Figure 3.12-1 shows the locations of nearby noise-sensitive receptors. The locations of these receptors in relation to Phase 2 project area pond clusters are discussed below.

Project Setting

As discussed in Section 3.8, Land Use, the current land uses closest to the Phase 2 project area primarily consist of commercial, industrial, and open-space uses. Sensitive land uses, including residential areas and schools, are typically farther away from the pond clusters than those less sensitive uses, divided by either highway or railroad corridors. Exceptions are the community of Alviso, which is to the east of the A8 pond cluster (across the Guadalupe River and Alviso Slough), and the Shoreline Park in Mountain View Park, which is to the south of the Alviso-Mountain View pond cluster.

Alviso-Island Ponds

The Alviso-Island Ponds (Ponds A19, A20, and A21) are bounded by Coyote Creek to the south, Mud Slough to the north, and their confluence and San Francisco Bay to the west. To the east are the Warm Springs Restoration Area (part of the Refuge) and an industrial-use area. No major noise sources are generated from the operation of these ponds. As such, noise levels are primarily influenced by nearby uses such as surface streets and industrial uses, all of which are more than a ½ mile to the east of Pond A19 (which is the closest pond to any noise-generating uses). The existing Union Pacific Railroad (UPRR) line that separates Ponds A20 and A21 also influences existing noise levels within this pond cluster. The noise level along Interstate 880 is approximately 75 dBA (CNEL) based on the vehicle volume traveling along the highway. Noise levels decrease to 55 dBA (CNEL) at approximately ½ mile from SR 880 (City of Fremont 2011). The closest sensitive land uses to the Island Ponds are residential communities, approximately 2.5 miles to the east of Pond A19 (Figure 3.12-1).



URS

South Bay Salt Pond Restoration Project

Figure 3.12-1
Sensitive Receptors

Alviso-Mountain View Ponds

The Alviso-Mountain View Ponds (Ponds A1 and A2W and Charleston Slough) are the westernmost ponds of the Alviso pond complex. Ponds A1 and A2W are north of the City of Mountain View and the city's Shoreline Park, and east of the City of Palo Alto and the Palo Alto Flood Basin and the Palo Alto Baylands Park and Nature Preserve, immediately adjacent to Charleston Slough. Parkland and public recreation, primarily at Mountain View's Shoreline Park and the sailing lake within this park, are the primary land uses in the vicinity of the Alviso-Mountain View pond cluster. No major noise sources are generated from the operation of these ponds in their current state.

Nearby land uses include light industrial uses in the City of Mountain View. Shoreline Park contains recreational trails (including portions of the Bay Trail), the Shoreline Golf Links, and the Shoreline Park sailing lake. These recreational and nearby industrial uses constitute the existing noise conditions within the Mountain View pond cluster. The noise level along U.S. Highway 101 is approximately 70 dBA (CNEL) based on the vehicle volume traveling along the highway. Noise levels decrease to 60 dBA (CNEL) at approximately 1,500 feet from U.S. Highway 101 (City of Mountain View 2013). Overhead flights from Moffett Field and Mineta San Jose International Airport also contribute to existing ambient noise levels. The nearest sensitive receptors would be users of the at Mountain View Shoreline Park, directly south of Ponds A1 and A2W, and a manufactured-home residential community, about 0.64 mile (3,400 ft) to the south of Pond A2W (Figure 3.12-1).

Alviso-A8 Ponds

Ponds A8 and A8S are in the south-central portion of the Alviso pond complex. This cluster is bounded by Alviso Slough to the northeast; the City of Sunnyvale, a business park built on a closed landfill, and Baylands Community Park to the south; Guadalupe Slough to the west; and the Alviso neighborhood of the city of San Jose to the east. No major noise sources are generated from the operation of this pond; as such, noise levels on-site are primarily influenced by external noise sources such as overflights and recreation adjacent to the pond. The noise level along SR 237 is approximately 75 dBA (CNEL) based on the vehicle volume traveling along the highway. Noise levels decrease to 60 dBA (CNEL) at approximately 660 feet from SR 237 (City of Sunnyvale 2013). The closest sensitive uses within the community of Alviso are approximately 600 feet to the east of Pond A8 (Figure 3.12-1).

Ravenswood Ponds

The Phase 2 Ravenswood pond cluster consists of Ponds R3, R4, R5, and S5, the levees surrounding each of these ponds, some of the fringe marsh outside of these levees, and the All-American Canal (AAC), a former brine ditch used as part of the Cargill salt works. The pond cluster is bounded by Greco Island and open bay water to the north, Ravenswood Slough to the east, SR 84 and the City of Menlo Park to the south, and Menlo Park's Bedwell Bayfront Park to the west. Noise levels in this pond cluster are greatly influenced by vehicular traffic on SR 84 (Dumbarton Bridge), which extends through the southern portion of the Ravenswood pond complex, and on the Bayfront Expressway, along the western boundary of the pond cluster. The noise level along SR 84 is approximately 70 dBA (CNEL) based on the vehicle volume traveling along the highway. Noise levels decrease to 60 dBA (CNEL) at a distance of approximately a ¼ mile to almost a ½ mile from SR 84. The noise level along U.S. Highway 101 is approximately 70 dBA (CNEL) based on the vehicle volume traveling along the highway from a distance of approximately 660 feet, decreasing to 65 dBA (CNEL) at a distance of approximately a ¼ mile (City of Menlo Park 2013). Other noise sources include the Union Pacific Railroad tracks (less than ¼ mile south of the pond

complex) and airplanes flying overhead to and from the San Carlos Airport (situated less than 5 miles to the northwest). No major noise sources exist within this pond cluster. Intermittent noises can be heard in the vicinity of recreational facilities (see Section 3.6, Recreation Resources, for descriptions of these locations). No sensitive receptors occur within the Ravenswood pond cluster. The nearest sensitive receptors are more than 700 feet south of Pond R3 (Figure 3.12-1).

3.12.2 Regulatory Setting

Noise is regulated in the Phase 2 project area and the regional area through implementation of local general plan policies and noise regulations. Local general plans identify general principles intended to guide and influence development plans, and noise regulations set forth specific standards and procedures for addressing particular noise sources and activities.

Generally, the goal of noise regulations is to protect the health and welfare of the public by minimizing excessive, unreasonable, and unnecessary noise. Each jurisdiction defines unacceptable noise levels and, in most cases, noise level standards and work hour limitations, to achieve this goal.

Laws and Regulations

Alviso-Island Ponds

Alameda County. The Alameda General Plan Countywide Noise Element provides background information about evaluating the effects of noise on communities and the current regulatory framework. It also presents baseline information for the existing noise environment in Alameda County, along with goals, policies, and actions for controlling noise in existing and future development (Alameda County 1994). Acceptable noise levels range from 55 to 65 L_{dn} for residential and educational uses to 70 L_{dn} for commercial and to 75 L_{dn} for industrial and open-space recreation and parks uses.

Relevant countywide noise policies include the following.

Goal #1:

> The peace, health, safety, and welfare of the residents of Alameda County require protection from excessive, unnecessary, and unreasonable noises from any and all sources in the cities and unincorporated territory.

Goal #2:

> Promote the compatibility of land uses with respect to noise generation by legislatively protecting sensitive land uses from noise sources.

Chapter 6.60, Noise, of the Alameda County Code of Ordinances prohibits unnecessary, excessive, and annoying noise to ensure public health, welfare, and safety (Alameda County 1966). This chapter provides maximum exterior noise limits for specific land uses during specified time periods. Permissible noise levels range from 45 to 65 dBA for residential and public area uses and from 60 to 80 dBA for commercial properties during the night (10 p.m. to 7 a.m.). Permissible noise levels range from 50 to 70 dBA for residential and public area uses and from 65 to 85 dBA for commercial properties anytime during the day (7 a.m. to 10 p.m.).

City of Fremont. The City of Fremont General Plan (City of Fremont 2011) includes the following relevant policies.

Policy 10-8.2: Acceptable Noise Environment:

Guidelines articulated by Table 10-4 are not intended to be applied reciprocally. In other words, if an area currently is below the desired noise standards, an increase in noise up to the maximum should not necessarily be allowed. The impact of a proposed project on an existing land use should be evaluated in terms of potential for adverse community response based on a substantial increase in existing noise levels, regardless of the compatibility guidelines.

Policy 10-8.5: Construction Noise Levels:

Control construction noise at its source to maintain existing noise levels and in no case to exceed the acceptable noise levels.

Chapter 18.160, Construction Hours, of the Fremont Municipal Code contains noise performance standards for the land uses within the city, at the property line nearest the source of a suspected violation. The maximum noise generated by such use cannot exceed 60 dBA when adjacent uses are residential, park, or institutional uses. Less stringent standards apply to adjacent commercial or industrial uses (65 to 70 dBA, respectively). Excluded from these standards are occasional sounds generated by the movement of railroad equipment, temporary construction activities, or warning devices. Section 18.160.010 of the Fremont Municipal Code limits construction activity hours within 500 feet of one or more residences, lodging facilities, nursing homes, or inpatient hospitals to the weekday hours of 7:00 a.m. to 7:00 p.m. and the Saturday or holiday hours of 9:00 a.m. to 6:00 p.m., and Sunday construction is not allowed. Construction activity for projects not within 500 feet of residences, lodging facilities, nursing homes, or inpatient hospitals shall be limited to the weekday hours of 6:00 a.m. to 10:00 p.m. and the weekend or holiday hours of 8:00 a.m. to 8:00 p.m. A holiday shall be as defined in Section 2.35.010 (City of Fremont 2005).

Alviso-Mountain View Ponds

Santa Clara County. The Santa Clara County General Plan provides noise compatibility standards for land use within the county and strategies and policies to ensure that residents are free from noise that affects their health and well-being (Santa Clara County 1994). Satisfactory noise levels range from 45 to 55 L_{dn} for residential uses, hotel uses, parks, open-space reserves, and wildlife refuges; 65 L_{dn} for public or semipublic facilities (churches, hospitals, nursing homes, school, libraries, and civic buildings); 65 L_{dn} for other non-hotel commercial uses and agricultural uses; and 70 L_{dn} for industrial uses.

Relevant noise strategies, policies, and implementation include:

Strategy #1: Prevent or Minimize Noise Conflicts:

> C-HS 24. Environments for all residents of Santa Clara County free from noises that jeopardize their health and well-being should be provided through measures which promote noise and land use compatibility.
>
> C-HS 25. Noise impacts from public and private projects should be mitigated.

C-HS(i) 25. Prohibit construction in areas which exceed applicable interior and exterior standards, unless suitable mitigation measures can be implemented.

Chapter VIII, Section B-11 of the Santa Clara County Code prohibits unnecessary, excessive, and annoying noise to ensure public health, welfare, and safety (Santa Clara County 2003). This section provides maximum exterior noise limits for specific land uses during specified time periods. Permissible noise levels range from 45 to 75 dBA for residential uses during the night (10 p.m. to 7 a.m.) to heavy industrial uses anytime during the day, respectively. Residential public space is limited to 55 dBA during the daytime hours (7 a.m. to 10 p.m.). Higher noise levels are permitted for construction and demolition activities. The maximum noise levels for repetitively scheduled and relatively long-term operation of stationary equipment ranges from 60 to 70 dBA between the hours of 7 a.m. to 7 p.m., depending on the land use. Noise levels for nonscheduled, intermittent short-term operation increases by 15 dBA above the stationary source level.

The Santa Clara County Code also provides exterior noise limits for various receiving land use categories. For one- to two- story residential uses, noise levels cannot exceed 45 and 55 dBA for more than 30 minutes in any hour from 10 p.m. to 7 a.m. and from 7 a.m. to 10 p.m., respectively (Santa Clara County 2003).

Mountain View. The City of Mountain View 2030 General Plan (City of Mountain View 2012) provides noise acceptability guidelines for specific land uses and identifies policies to meet the city's goal to reduce noise and its effects on people. Normally acceptable external noise levels for public parks, recreation, and passive open space range from 50 to 70 L_{dn} or CNEL. Levels above 70 L_{dn} are either normally unacceptable or clearly unacceptable (Table 7.1 of the City of Mountain View 2030 General Plan). Acceptable noise levels for commercial, intensive open-space, and industrial uses are higher.

Section 8.23 of the Mountain View Municipal Code provides limitations on the hours of construction. Construction activity (any physical activity on the construction site or in the staging area, including the delivery of materials) is limited to the hours of 7 a.m. and 6 p.m., Monday through Friday (City of Mountain View 2003). Construction activity is not permitted on Saturday or Sunday or holidays unless prior written approval is granted by the building official. Construction hours can be modified by the building official, with sufficient notice and as long as appropriate signage is installed. The City of Mountain View Municipal Code does not provide noise limitations for stationary noises.

Alviso-A8 Ponds

Santa Clara County. The Santa Clara County General Plan provides noise compatibility standards for land use within the county and strategies and policies to ensure that residents are free from noise that affects their health and well-being (Santa Clara County 1994). Satisfactory noise levels range from 45 to 55 L_{dn} for residential uses, hotel uses, parks, open-space reserves, and wildlife refuges; 65 L_{dn} for public or semipublic facilities (churches, hospitals, nursing homes, school, libraries, and civic buildings); 65 L_{dn} for other non-hotel commercial uses and agricultural uses; and 70 L_{dn} for industrial uses.

Relevant noise strategies, policies, and implementation include:

Strategy #1: Prevent or Minimize Noise Conflicts:

C-HS 24. Environments for all residents of Santa Clara County free from noises that jeopardize their health and well-being should be provided through measures which promote noise and land use compatibility.

C-HS 25. Noise impacts from public and private projects should be mitigated.

C-HS(i) 25. Prohibit construction in areas which exceed applicable interior and exterior standards, unless suitable mitigation measures can be implemented.

Chapter VIII, Section B-11 of the Santa Clara County Code prohibits unnecessary, excessive, and annoying noise to ensure public health, welfare, and safety (Santa Clara County 2003). This section provides maximum exterior noise limits for specific land uses during specified time periods. Permissible noise levels range from 45 to 75 dBA for residential uses during the night (10 p.m. to 7 a.m.) to heavy industrial uses anytime during the day, respectively. Residential public space is limited to 55 dBA during the daytime hours (7 a.m. to 10 p.m.). Higher noise levels are permitted for construction and demolition activities. The maximum noise levels for repetitively scheduled and relatively long-term operation of stationary equipment ranges from 60 to 70 dBA between the hours of 7 a.m. to 7 p.m., depending on the land use. Noise levels for nonscheduled, intermittent short-term operation increases by 15 dBA above the stationary source level.

The Santa Clara County Code also provides exterior noise limits for various receiving land use categories. For one- to two- story residential uses, noise levels cannot exceed 45 and 55 dBA for more than 30 minutes in any hour from 10 p.m. to 7 a.m. and from 7 a.m. to 10 p.m., respectively (Santa Clara County 2003).

San Jose. The City of San Jose General Plan 2040 identifies goals and policies to reduce noise impacts on people. Specifically, its goal is to minimize noise levels through noise reduction and suppression techniques and appropriate land use policies. The city's acceptable noise level objectives are 55 L_{dn} for long-range exterior noise quality level, and 60 L_{dn} for the short-range exterior noise quality level (City of San Jose 2011).

Chapter 20 of the City of San Jose Municipal Code provides exterior noise standards for specific land use districts. Noise level standards vary from a maximum noise level of 55 dBA (e.g., residential) to 70 dBA (e.g., industrial or open space next to industrial uses) unless a conditional use permit is granted. The San Jose Municipal Code does not specifically call out noise exemptions for construction activities (City of San Jose 2004).

Sunnyvale. The goals of the Noise Sub-Element of the City of Sunnyvale General Plan (City of Sunnyvale 2011) is to maintain a compatible noise environment for all land uses in the community, reduce transportation noise, and maintain or achieve acceptable limits for the levels of noise generated by land use operations and single events. The general plan identifies policies and action statements to achieve these goals.

Section 16.08.110 of the Sunnyvale Municipal Code specifies noise limitations and hours of construction. The section describes qualitative noise standards that include no loud environmentally disruptive noises (e.g., air compressors without mufflers, continuously running motors or generators, loud-playing musical

instruments and radios) if such noises are a nuisance to adjacent residential neighborhoods. Construction is permitted between 7 a.m. and 6 p.m. Monday through Friday and 8 a.m. and 5 p.m. on Saturdays. Construction activities are prohibited within the city on Sundays and national holidays. Exceptions to these hours are permitted only for homeowners (City of Sunnyvale 2013).

The City of Sunnyvale Municipal Code does not provide noise limitations for stationary noises.

Ravenswood Ponds

San Mateo County. The San Mateo General Plan provides noise compatibility standards for land use within the county and strategies and policies to ensure that residents are free from noise that affects their health and well-being (San Mateo County 1986). Satisfactory noise levels range from 50 to 65 L_{dn} for residential and transient-lodging uses to 70 L_{dn} for semipublic facilities (churches, hospitals, nursing homes, schools, libraries, civic buildings, halls, and theaters) and office buildings to 75 L_{dn} for industrial, open-space and recreation, and outdoor sports uses.

Chapter 4.88, Noise, of the San Mateo County Code of Ordinances prohibits unnecessary, excessive, and annoying noise to ensure public health, welfare, and safety (San Mateo County 1982). This chapter provides maximum exterior noise limits for specific land uses during specified time periods. Permissible noise levels range from 50 to 70 dBA for residential and semipublic facilities (churches, hospitals, schools, and libraries) during the night (10 p.m. to 7 a.m.) and from 55 to 75 dBA during the day (7 a.m. to 10 p.m.).

Menlo Park. The City of Menlo Park General Plan (City of Menlo Park 2013) provides noise acceptability guidelines for specific land uses and identifies policies to meet the city's goal to reduce noise and its effects on people. Normally acceptable external noise levels for public parks, recreation, and passive open space range from 50 to 75 L_{dn} or CNEL. Levels above 70 L_{dn} are either normally or clearly unacceptable. Acceptable noise levels for commercial, intensive open space, and industrial uses are higher.

Section 8.06.030 of the Menlo Park Municipal Code defines the noise limitations within city boundaries. For all sources of sound measured from any residential property, the night- and day-time noise limitations are 50 dBA and 60 dBA, respectively (City of Menlo Park 2004). Construction activities are allowed between the hours of 8 a.m. and 6 p.m. Monday through Friday. Exceptions are granted when a use permit is issued by the city that specifically allows noise levels to be exceeded, but this requires posting of signage with the permitted hours of construction. Limitations are also set for powered equipment that is operated on a temporary, occasional, or infrequent basis between the hours of 8 a.m. and 6 p.m. Monday through Friday. No piece of equipment is allowed to generate levels in excess of 85 dBA at 50 feet.

3.12.3 Environmental Impacts and Mitigation Measures

Approach to Analysis – Construction

The following sections provide an overview of how construction activities may generally influence existing noise conditions in relation to each Phase 2 pond cluster. It describes predicted noise and vibration levels created by certain construction equipment that are used later to prepare the impact assessment according to the stated thresholds of significance. This overview is intended to inform the impact assessment by presenting the key concepts associated with the noise and vibration impact assessment.

Construction activities would occur under the SBSP Phase 2 Restoration Project Action Alternatives (Alternatives Island B, Island C, Mountain View B, Mountain View C, A8 B, Ravenswood B, Ravenswood C, and Ravenswood D). Construction activities would not occur under the No Action Alternatives (Alternatives Island A, Mountain View A, A8 A, and Ravenswood A).

Construction Noise

Noise impacts from construction equipment would depend on the type of activity, the equipment used, and the distance from sensitive receptors. A discussion of the typical construction equipment that would be used and their associated noise levels, the distances of the SBSP Phase 2 Restoration Project sites from sensitive receptors, and projected noise levels at the sensitive receptors from construction and operation of the project are presented below.

In general, construction activities would include excavation, backfilling, material transport, and other miscellaneous activities (using both land-based and amphibious equipment). For various pond clusters and for various alternatives, on-site construction equipment may include (but is not limited to) long-reach excavators, amphibious excavators, barges, bulldozers, dump trucks, a compaction roller, a water tanker, refueling tanks, cranes, piledrivers, and pickup vehicles for transportation in and out of a project site. Water-based equipment may include small barges. According to the Federal Transit Administration's (FTA's) Transit Noise and Vibration Assessment (FTA 2006), noise levels for typical construction equipment (including those listed above) range from 74 to 101 dBA at 50 feet without feasible control measures. Table 3.12-1 provides a summary of typical noise levels generated by construction equipment at a distance of 50 feet with and without feasible noise controls installed. Noise levels could decrease by 1 dBA to as much as 16 dBA with feasible noise-control measures such as intake mufflers, exhaust mufflers, and engine shrouds in accordance with manufacturers' specifications.

Table 3.12-1 Typical Construction-Equipment Noise Levels for Various Types of Equipment

TYPES OF EQUIPMENT	NOISE LEVEL IN DBA AT 50 FT WITHOUT FEASIBLE NOISE CONTROL[1]
Dozer or tractor	85
Excavator	88
Front-end loader	85
Backhoe	80
Vibratory roller	74
Crane	83
Truck	88
Pile driver (impact)	101
Pile driver (sonic)	96
Water pump	76
Dump truck	88
Compaction roller	74
Diesel generator	81

Source: FTA 2006.
1. Feasible noise controls include the use of intake mufflers, exhaust mufflers, and engine shrouds in accordance with manufacturers' specifications.

Tables 3.12-2 and 3.12-3 show the distances of the nearest sensitive receptors from construction and operations and maintenance (O&M) activities at each Phase 2 pond cluster and the predicted noise levels at various distances, respectively. Short-term construction activities would include general earthmoving activities using the equipment identified in Table 3.12-1. Table 3.12-2 distinguishes between general construction activities and piledriving activities. General construction activities can occur anywhere within the pond clusters, so the edges of the ponds closest to sensitive receptors were used to determine the approximate distance to the nearest sensitive receptors. Piledriving activities would only be required to install boxcar bridges and repair or install water control structures, and the project would utilize the sonic piledriving (vibration) method. These are short-term construction actions that would not be an ongoing part of the construction work and would occur in only two or three places at each pond cluster.

The existing and proposed water control structures and the locations of the proposed boxcar bridges are shown in the Phase 2 restoration plans (Figures 2-3 through 2-14) in Chapter 2, Alternatives. As such, the distance from piledriving activities to the nearest sensitive receptors can be better approximated than other general construction activities. The assumptions about the distances from work sites form the basis of the analyses presented later in this section.

Table 3.12-2 Project Alternatives: Distances to the Nearest Sensitive Receptors

PHASE 2 POND COMPLEX / POND	APPROXIMATE DISTANCE FROM THE NEAREST CONSTRUCTION (EARTHMOVING) ACTIVITIES (FT)[1]	APPROXIMATE DISTANCE FROM THE NEAREST PILEDRIVING ACTIVITY (FT)[2]
Alviso-Island Ponds		
A19	10,000	—
A20	13,500	—
A21	17,000	—
Alviso-Mountain View Ponds		
A1	3,400	—
A2W	6,700	6,900 (PG&E tower foundation)
Charleston Slough	3,400	—
Alviso-A8 Ponds		
A8S	1700	—
A8	2,100	—
Ravenswood Ponds		
R3	1,000	2,200 (R3/S5 WCS)
R4	2,800	3,300 (R4/R5 WCS)
R5	2,400	3,300 (R4/R5 WCS)
S5	1,600	1,900 (S5/Flood Slough WCS)

Note: Distances are rounded to the nearest 100 ft.

1. The distances are measured from the edge of the pond closest to the sensitive receptors (residential uses). Earthmoving activities may occur anywhere within the pond complexes

2. The distances are measured from the location where piledriving (sonic) would occur (typically at water control facilities) to the nearest sensitive receptors.

PG&E = Pacific Gas and Electric Company
WCS = water control structure

Table 3.12-3 Predicted Construction Noise Levels at Various Distances

PHASE 2 PONDS CONSTRUCTION SITES[1]	DISTANCE BETWEEN CONSTRUCTION SITES AND SENSITIVE RECEPTORS (FT)[2]	PREDICTED PEAK CONSTRUCTION NOISE LEVELS (DBA)
Baseline	**50**	**102**
R3	1,000	77
S5	1,600	72
A8	1,700	72
R5	2,400	69
R4	2,800	68
A8S	3,000	67
A1	3,400	66
Charleston Slough	3,400	66
A2W	6,700	60
A19	10,000	57
A20	13,500	54
A21	17,000	52

Note: Noise levels are based on attenuation at 6 dB for doubling of distance.

1. The nearest sensitive receptors are based on the measurement from the edge of the pond closest to the sensitive receptors to the sensitive receptors.

2. No sensitive receptors are within 50 ft of the Phase 2 project area. This distance and associated noise level are presented to identify the assumed equipment noise levels at 50 ft. The subsequent distances and noise levels show how such noise levels attenuate as distance increases.

Table 3.12-3 shows the calculated predicted noise levels at various distances associated with construction activities. It also shows the expected noise levels at sensitive receptors at specific ponds. The noise levels were calculated based on the following two assumptions (used in the 2007 South Bay Salt Pond Restoration Project Programmatic EIS/R [2007 EIS/R] and thus reapplied here):

- Combined intermittent noise levels of 102 dBA at 50 feet without feasible noise control, based on the simultaneous use of the three noisiest types of construction equipment shown in Table 3.12-1; and
- A typical noise-attenuation rate of 6 dBA per doubling of distance.

The assumption associated with the use of the three noisiest types of construction equipment provides for the most conservative analysis of potential noise levels associated with construction activities at each of the Phase 2 pond clusters and for each Phase 2 Action Alternative. It should be noted that in some cases, piledriving is not necessary, and use of a sonic/vibratory driver would further reduce peak noise levels. Also, each piledriving activity would be done in a few hours or a day at most, reducing the duration of that noise. In other cases, construction activities would not occur at the edge of the pond nearest to the sensitive receptors, so noise levels would likely be lower than those reported below. Finally, construction activities would not only occur at the edge of the pond, but would likely be distributed throughout the

pond or pond clusters. In those cases, the longer distance between sensitive receptors and the construction work area would further decrease noise levels through distance attenuation.

Construction Traffic-Related Noise

The upland fill material would be brought to the Phase 2 ponds by trucks. Assuming transportation of fill only occurs using trucks with a storage capacity of 11 cubic yards (cy) per truck, over 57,000 one-way truck trips would be required to fulfill the high-end estimate of total fill required for all Phase 2 alternatives considered here. These truck trips are not actually generated by the SBSP Restoration Project. The material would come from other, unrelated construction projects in nearby communities. So, in the absence of the SBSP Restoration Project, the material would be generated and transported to a landfill or other disposal site. Thus, this analysis only addresses the transportation of the material from the nearest highway or major arterial to the ponds where it would be used.

The truck trips would occur over several construction seasons. Up to 200 one-way truck trips would be generated daily for the delivery of fill material at the Alviso-Mountain View cluster, up to 180 daily trips at the Alviso-A8 cluster, and up to 150 daily trips at the Ravenswood cluster (as described in Section 3.11, Traffic). These trips are calculated by alternative in Table 3.12-4. For the purposes of this analysis, one-way daily trips are used. Detailed evaluations of traffic-related noise impacts based on more realistic estimates are conducted as part of the project-level environmental review below.

Table 3.12-4 Construction Fill (CY) and Truck Trips

POND CLUSTER	ALTERNATIVE	VOLUME OF FILL IMPORTED BY TRUCK (CY)	TRUCK TRIPS	CONSTRUCTION PERIOD INVOLVING HAULING FILL (MONTHS)1	ONE-WAY MAX DAILY TRUCK TRIPS
Island	Alternative B	—	—	—	—
Island	Alternative C	—	—	—	—
Mountain View	Alternative B	296,400	26,945	6.1	200
Mountain View	Alternative C	369,600	33,600	7.6	200
A8	Alternative B	48,600	4,418	1.1	180
Ravenswood	Alternative B	37,900	3,445	1.0	150
Ravenswood	Alternative C	210,400	19,127	5.8	150
Ravenswood	Alternative D[2]	—	—	—	—

1. For this analysis, a typical month has 22 work-days.

2. Cut volumes for Alternative Ravenswood D would be 56,700 cy, but the City of Redwood City's associated Bayfront Canal and Atherton Channel Project would generate a surplus of 31,200 cy that would be available for use in the Ravenswood Ponds; this creates a surplus of material of almost 15,000 that could be used on-site for other levee enhancements or restoration features.

Construction-Related Vibration

Construction activities would generate vibration. Vibration levels depend on the specific construction equipment used and the operations involved. Vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increased distance. Table 3.12-5 shows the vibration levels generated by typical construction equipment. The California Department of

Transportation's (Caltrans') recommended standard with respect to the prevention of structural building damage is 0.2 in/sec peak particle velocity (PPV) for normal structures, and the FTA's maximum-acceptable vibration standard is 80 vibration decibels (VdB) (FTA 2006) with respect to human annoyance for residential uses. As shown in Table 3.12-5, the highest vibration associated with construction equipment for all Phase 2 Action Alternatives would be generated from impact piledrivers. Vibration created by piledrivers would exceed both the Caltrans and the FTA standards at a distance of 25 feet. The use of trucks, drilling, and bulldozers would also exceed FTA standards at 25 feet with respect to human annoyance for residential uses. In general, piledriving would be used wherever cofferdams and dewatering would be needed (the sheet piles to form the cofferdams would need to be driven). The two places where this need exists are where the boxcar bridges and the water control structures are to be located. Predicted vibration levels at nearby sensitive receptors from construction activities are shown in Table 3.12-6.

Table 3.12-5 Typical Construction Equipment Vibration Levels

EQUIPMENT		PPV AT 25 FT (IN/SEC)[1]	APPROXIMATE LV AT 25 FT[2]
Piledriver (impact)	Upper range	1.518	112
	Typical	0.644	104
Piledriver (sonic)	Upper range	0.734	105
	Typical	0.170	93
Large bulldozer		0.089	87
Trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

Source: FTA 2006.

1. PPV is the peak particle velocity

2. Lv is the velocity level in decibels (VdB) referenced to 1 µinch/second and based on the root mean square (RMS) velocity amplitude.

Table 3.12-6 Predicted Vibration Levels at Nearby Sensitive Receptors from Construction Activities

DISTANCE (FT)	PPV (IN/SEC)	APPROXIMATE LV (VDB)	EQUIPMENT USED	PROJECT CONSTRUCTION SITES (CLOSEST POND)[1]
10,000	0.00001	9.7	Bulldozer	Island (Pond A19)
6,900	0.0003	39.0	Piledriving	Mountain View (Pond A2W)
2,100	0.0001	29.9	Bulldozer	A8 (Pond A8)
1,900	0.0021	55.6	Piledriving	Ravenswood (Ponds R3, R4, R5, and S5)

Note: Vibration levels generated by piledriving and/or other construction equipment as designated in the fourth column.

1. Pond that is closest to a sensitive receptor.

PPV at 25 feet is based on FTA 2006. To calculate PPV at other distances, the following equation (FTA 2006) was used:

PPV at distance D = PPV (at 25 ft) * [(25/D)^1.5]

Approach to Analysis – Operations

Operation and Maintenance

Under the No Action Alternatives, no new activities would occur under Phase 2 and the pond clusters would continue to be monitored and managed through the activities described in the Adaptive Management Plan (AMP) and in accordance with current United States Fish and Wildlife Service (USFWS) practices for management of the Don Edwards San Francisco Bay National Wildlife Refuge (Refuge). The existing breached levees would continue to be scoured from hydraulic action and naturally degrade. Some levees would continue to be maintained and repaired as needed to prevent unplanned breaches and provide flood protection. Ongoing monitoring and studies to track the progress of these ponds toward restoration as tidal marsh would be the principal component of the continued implementation of the AMP at these pond clusters. Additional details regarding the implementation of the AMP are described in the 2007 EIS/R.

Long-Term Operations

The project area would be open space, consisting of tidal habitat/managed ponds and passive recreational facilities. New recreational facilities would be constructed for all Action Alternatives, except those associated with the Island Ponds. Under the Action Alternatives, the pond complexes would include recreational facilities that permit walking/hiking/biking, birdwatching, kayaking, viewing wildlife and wetlands, and learning about the history and uses of the area. No active recreational uses (e.g., ball fields) would be constructed. The anticipated noise levels generated by the passive recreational uses would not substantially alter the ambient noise environment, especially in areas where recreation already exists within the pond complexes or is adjacent to the pond complexes. The low and occasional noise levels generated by recreational users would not be noticeable from off-site locations, especially in relation to the distance from sensitive receptors (in almost all cases in Phase 2, industrial uses separate the open-space uses and residential uses). Noise generated by area roadways and highways, railroads, and overflights, the dominant noise source in the area, would in some cases be much higher than any noise generated from passive recreational users.

Significance Criteria

For the purposes of this Final EIS/R, a significant noise impact would occur if the project resulted in the following:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plans or noise ordinances or the applicable standards of other agencies;
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity due to construction activities; or
- Exposure of people residing or working in the project area to excessive aircraft-generated noise levels.

The quantitative noise standards depend on the jurisdictions where activities would occur (see Section 3.12.2, Regulatory Setting), and are discussed below in relation to the SBSP Restoration Project.

The SBSP Restoration Project would not expose people residing in (though no habitable structures exist within the project area) or near or working in the Phase 2 project area to excessive aircraft-generated noise levels, because no habitable structures would be located within the pond complexes, and the Phase 2 project area is not in an area with excessive aircraft-generated noise levels. Therefore, this significance criterion is not assessed in the project-level evaluation below.

As adopted in the 2007 EIS/R, the project is committed to implementing SBSP Mitigation Measure 3.13-2, which ensures that contractors use routes that require trucks to avoid residential areas for haul routes.

As explained in Section 3.1.2, Environmental Setting and Impact Analysis, even though both the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA and the California Environmental Quality Act (CEQA) Guidelines were considered during the impact analysis, impacts identified in this Final EIS/R are characterized using CEQA terminology. Section 3.1.2 describes the terminology used to explain the severity of the impacts.

Program-Level Evaluation

The 2007 EIS/R conducted broad, regional analyses of program-level noise impacts from the types of activities that would be necessary to implement Programmatic Alternative A (the No Action Alternative) and Programmatic Alternatives B and C (the two program-level Action Alternatives). The 2007 EIS/R evaluated the potential noise and vibration impacts of three long-term alternatives, which were each determined to have less than significant impacts to persons, ambient noise levels, and the established standards of local plans. The 2007 EIS/R found that under each programmatic alternative, noise impacts from construction activities, traffic, water pumping, and O&M activities would be less than significant with mitigation incorporated. Furthermore, the 2007 EIS/R found that none of the long-term alternatives would result in vibration levels in excess of the Caltrans or FTA standards.

Project-Level Evaluation

Phase 2 Impact 3.12-1: Short-term construction noise effects.

Alviso-Island Ponds

Alternative Island A (No Action). Under Alternative Island A, the No Action Alternative, no new construction would occur under Phase 2 and the pond cluster would continue to be monitored and managed through the activities described in the AMP in accordance with current USFWS practices. As such, no short-term construction noise impacts would occur.

Alternative Island A Level of Significance: No Impact

Alternative Island B. Implementation of Alternative Island B would involve construction and earthmoving activities, including lowering the levees along the north and south perimeter of Pond A19 and removing the existing levees that currently separate Ponds A19 and A20. Alternative Island B would also create two new breaches along the north side of Pond A19, creating additional connection with Mud Slough. Construction could be accomplished using excavators, a barge (for fueling and possibly access to

the project site), a low-bed truck, other common construction equipment, a skiff, and pickup vehicles for transportation in and out of the project site.

As shown in Table 3.12-3, the exterior noise levels caused by short-term use of the construction equipment listed referred to in Table 3.12-3 and as experienced by the closest residence would be 57 dBA (L_{eq}), and noise levels would further decrease as the distance between construction activities and sensitive receptors increases. This noise level would not exceed the City of Fremont noise ordinance Article 19, Section 8-21904, which states that for land uses within the city, the maximum noise generated by such use cannot exceed 60 dBA when adjacent uses are residential, park, or institutional uses. Less-stringent standards apply to adjacent commercial or industrial uses (65 to 70 dBA, respectively). There are no parks, schools, churches, or hospital or health-care facilities within 1 mile of the cluster.

As adopted in the 2007 EIS/R, the project is committed to implementing SBSP Mitigation Measure 3.13-1**,** which requires that construction activities be limited to the days and hours or noise levels designated for the City of Fremont and the County of Alameda where the work activities would occur. Therefore, construction activities will not occur during noise-sensitive hours. The project is also committed to implementation of SBSP Mitigation Measure 3.13-2, which requires trucks to avoid residential areas for haul routes. Therefore, noise impacts from short-term construction activities would be less than significant.

Alternative Island B Level of Significance: Less than Significant

Alternative Island C. Alternative Island C would include all of the components of Alternative Island B with the addition of three components: levee breaches on the north sides of ponds A20 and A21, pilot channels in Pond A19, and the widening of the existing breaches on the southern levee of Pond A19. Construction could be accomplished using excavators, a barge (for fueling and possibly access to the project site), a low-bed truck, other construction equipment, a skiff, and pickup vehicles for transportation in and out of the project site.

Therefore, implementation of Alternative: Island C would result in similar noise impacts as Alternative Island B (57 dBA [L_{eq}], as experienced by the nearest sensitive receptor) because construction activities would involve the same equipment and construction would occur generally in the same locations relative to the nearby sensitive receptors. This noise level would not exceed City of Fremont noise ordinance Article 19, Section 8-21904, which states that for land uses within the city, the maximum noise generated by such use cannot exceed 60 dBA when adjacent uses are residential, park, or institutional uses. Less stringent standards apply to adjacent commercial or industrial uses (65 to 70 dBA, respectively).

As adopted in the 2007 EIS/R, the project is committed to implementing SBSP Mitigation Measure 3.13-1**,** which ensures that construction activities will be limited to the days and hours or noise levels designated for the City of Fremont and the County of Alameda, where the work activities would occur. Therefore, construction activities will not occur during noise-sensitive hours. The project is also committed to implementation of SBSP Mitigation Measure 3.13-2, which requires trucks to avoid residential areas for haul routes. Therefore, noise impacts from short-term construction activities would be less than significant.

Alternative Island C Level of Significance: Less than Significant

Alviso-Mountain View Ponds

Alternative Mountain View A (No Action). Under Alternative Mountain View A, no new activities would be implemented as part of Phase 2. The USFWS is maintaining the ponds as part of the Don Edwards San Francisco Bay National Wildlife Refuge and the AMP. The pond cluster would continue to be managed through the activities described in the AMP in accordance with current USFWS practices. Under Alternative Mountain View A, no construction activities would occur within the Mountain View pond cluster. As such, no short-term construction noise impacts would occur.

Alternative Mountain View A Level of Significance: No Impact

Alternative Mountain View B. Alternative Mountain View B would breach levees at several locations along the perimeter levees of Ponds A1 and A2W. Alternative Mountain View B would also raise the levee between Charleston Slough and Pond A1 and construct habitat transition zones on the south sides of Ponds A1 and A2W. Alternative Mountain View B would also raise the west levee of Pond A1 and construct several islands within Ponds A1 and A2W. PG&E would raise existing boardwalks, add a new length of boardwalk, and pour newer and higher concrete foundations around each tower footing. Recreational components such as interpretive platforms, viewing platforms, and several trails would also be improved.

The armoring and bridging of breaches on the east levee of Pond A2W would be done in the dry. Armoring and bridging the breaches on the east levee of Pond A2W would require dewatering activities. Cofferdams would be installed at the breach and bridge locations to facilitate the construction of concrete abutments and wingwalls. Cofferdams would also be built for dewatering around each PG&E tower footing so that a newer and higher concrete footing can be added to each footing. Construction would be accomplished using excavators, bulldozers, dump trucks, a compaction roller, a water tanker, refueling tanks, pile driving equipment, pumps, cranes, a portable barge, skiffs, paving equipment, and pickup vehicles for transportation in and out of the project site.

An assessment of nearby sensitive residential land uses of 3,400 feet (Ponds A1), 6,700 feet (Ponds A2W) and 3,400 feet (Charleston Slough) (see Table 3.12-2, column 2) indicated that the exterior noise levels at noise-sensitive receptors would be 66, 60, and 66 dBA (L_{eq}), respectively (see Table 3.12-3) and noise levels would further decrease as the distance from the receptors increases. These noise levels would not exceed the City of Mountain View standards, which generally provide that noise levels over 70 L_{dn} are unacceptable.

As adopted in the 2007 EIS/R, the project is committed to implementing SBSP Mitigation Measure 3.13-1**,** which requires that construction activities be limited to the days and hours or noise levels designated for the City of Mountain View, where the work activities would occur. Therefore, construction activities will not occur during noise-sensitive hours. The project is also committed to implementation of SBSP Mitigation Measure 3.13-2, which limits the hours trucks may deliver fill and requires trucks to avoid residential areas for haul routes. Therefore, noise impacts from short-term construction activities would be less than significant.

Alternative Mountain View B Level of Significance: Less than Significant

Alternative Mountain View C. Alternative Mountain View C would breach levees and lower levee heights to increase tidal flows in Pond A1, Pond A2W, and Charleston Slough and add recreation opportunities. Other modifications would include adding habitat transitions zones and islands. Flood

control would be maintained with improvements to the southern and western levees of Charleston Slough. A new primary water intake for Mountain View's sailing lake would be constructed at the breach between Pond A1 and Charleston Slough. PG&E would raise existing boardwalks, add a new length of boardwalk, and pour newer, higher concrete foundations around each tower footing. Several new trails, viewing platforms, and interpretative platforms would be installed or replaced to improve recreation and public access at the pond cluster. Upland fill material could be imported into the ponds to raise levees, construct islands, or build habitat transition zones.

Implementation of Alternative Mountain View C would result in similar noise impacts as Alternative Mountain View B (66, 60, and 66 dBA [Leq]), respectively, for Pond A1, Pond A2W, and Charleston Slough, as experienced by the nearest sensitive receptor, because construction activities would involve the same equipment and construction would occur generally in the same locations relative to the nearby sensitive receptors. This noise level would not exceed the City of Mountain View noise standard, which generally provides that noise levels over 70 L_{dn} are unacceptable. As such, the short-term impacts from use of construction equipment for Alternative Mountain View C would be less than significant.

As adopted in the 2007 EIS/R, the project is committed to implementing SBSP Mitigation Measure 3.13-1**,** which requires that construction activities be limited to the days and hours or noise levels designated for the City of Mountain View, where the work activities would occur. Therefore, construction activities will not occur during noise-sensitive hours. The project is also committed to implementation of SBSP Mitigation Measure 3.13-2, which requires trucks to avoid residential areas for haul routes. Therefore, noise impacts from short-term construction activities would be less than significant.

Alternative Mountain View C Level of Significance: Less than Significant

Alviso-A8 Ponds

Alternative A8 A (No Action). Under Alternative A8 A (No Action), no upland fill material would be added to the pond bottoms or the border levees of either Pond A8 or Pond A8S. The USFWS would continue to operate and maintain the ponds in accordance with the AMP and other ongoing management practices that have been in place since the implementation of Phase 1 actions. The Phase 2 No Action Alternative for the A8 Ponds would not require construction activities within the ponds. As such, no short-term construction noise impacts would occur.

Alternative A8 A Level of Significance: No Impact

Alternative A8 B. Implementation of Alternative A8 B would construct habitat transition zones in the southwest and southeast corners of Pond A8S. Construction equipment to accomplish this action would include haul trucks, bulldozers, water trucks, compaction rollers, other construction equipment, and vehicles for transportation in and out of the project site.

An assessment of nearby sensitive land uses of 2,100 feet (Pond A8) and 1,700 feet (Pond A8S) (see Table 3.12-3, column 2) indicated that exterior noise levels at noise-sensitive receptors would be 70 and 72 dBA (L_{eq}), respectively (see Table 3.12-3). Noise levels would decrease as the distance from the receptors increases.

These noise levels would not exceed Santa Clara County or City of Sunnyvale noise standards, which limit noise levels as experienced by sensitive receptors during nighttime hours. Chapter 20 of the City of San Jose Municipal Code provides exterior noise standards for specific land use districts. Noise level standards vary from a maximum noise level of 55 dBA (e.g., residential) to 70 dBA (e.g., industrial or

open space next to industrial uses). The closest residence is at least 1,700 feet away from the construction areas at the A8 Ponds, so the construction noise levels will be below that threshold. Several businesses and open-space uses are closer than 500 feet away, so the 70 dBA limit from the San Jose Municipal Code may be approached. If a conditional use permit is required from the city to address periodic exceedances of the lists, one will be obtained.

As adopted in the 2007 EIS/R, the project is committed to implementing SBSP Mitigation Measure 3.13-1, which requires that construction activities be limited to the days and hours or noise levels designated for the City of San Jose, where the work activities would occur. All construction equipment staging areas would be located at the furthest distance possible from nearby noise-sensitive land uses, and construction equipment would be properly maintained and equipped with noise control, such as mufflers, in accordance with manufacturers' specifications. Therefore, noise impacts from short-term construction activities would be less than significant.

Alternative A8 B Level of Significance: Less than Significant

Ravenswood Ponds

Alternative Ravenswood A (No Action). Under Alternative Ravenswood A, no new activities would be implemented as part of Phase 2. The USFWS is maintaining the ponds as part of the Refuge system and the AMP. As such, Alternative Ravenswood A would not require construction activities within the ponds. As such, no impacts from short-term construction noise would occur.

Alternative Ravenswood A Level of Significance: No Impact

Alternative Ravenswood B. Alternative Ravenswood B would open Pond R4 to tidal flows, improve levees to provide additional flood protection, create a habitat transition zone along the western edge of Pond R4, establish managed ponds to improve habitat for diving and dabbling birds, increase pond connectivity, and improve recreation and access. Ponds R5 and S5, which are currently seasonal managed ponds, would be converted into enhanced managed ponds through the construction of water control structures, removal or modification of levees within and between the ponds, creation of islands, and specific operational techniques. A water control structure would be installed on Pond R3 to enhance it for western snowy plover habitat Construction could be accomplished using excavators, bulldozers, amphibious equipment such as an aquatic excavator, dump trucks, compaction rollers or vibratory plates, a water tanker, refueling tanks, and pickup vehicles for transportation in and out of the project site.

An assessment of nearby sensitive land uses of 1,000 feet (Pond R3), 2,800 feet (Pond R4), 2,400 feet (Pond R3), and 1,600 feet (Pond S5) (see Table 3.12-3, column 2), exterior noise levels at noise-sensitive receptors would be 77, 68, 69, and 72 dBA (L_{eq}), respectively (see Table 3.12-3). Noise levels would decrease as the distance from the receptors increases. These noise levels would not exceed the County of San Mateo Chapter 4.88 Noise Ordinance standards or the City of Menlo Park Municipal Code, which limits noise levels as experienced by sensitive receptors during certain hours.[1]

As adopted in the 2007 EIS/R, the project is committed to implementing SBSP Mitigation Measure 3.13-1**,** which requires that construction activities be limited to the days and hours or noise levels designated for the City of Menlo Park, where the work activities would occur. Therefore, construction activities would not occur during noise-sensitive hours. The project is also committed to implementation

1 Per 2007 EIS/R Mitigation Measure 3.13-1.

of SBSP Mitigation Measure 3.13-2, which requires trucks to avoid residential areas for haul routes. Therefore, noise impacts from short-term construction activities would be less than significant.

Alternative Ravenswood B Level of Significance: Less than Significant

Alternative Ravenswood C. Alternative Ravenswood C would be similar to Alternative Ravenswood B with the following exceptions: Ponds R5 and S5 would be converted to a particular type of managed pond; water control structures would be installed on Pond R3 to enhance it for western snowy plover habitat; an additional habitat transition zone would be constructed; and additional recreational and public access components would be constructed. Construction could be accomplished using excavators, bulldozers, amphibious equipment such as an aquatic excavator, dump trucks, compaction rollers or vibratory plates, a water tanker, refueling tanks, and pickup vehicles for transportation in and out of the project site.

Overall, the implementation of Alternative Ravenswood C would result in similar short-term construction noise impacts as Alternative Ravenswood B because construction activities would involve the same equipment and construction would occur generally in the same locations relative to the nearby sensitive receptors. Noise levels would not exceed the County of San Mateo Chapter 4.88 Noise Ordinance standards or the City of Menlo Park Municipal Code, which limits noise levels as experienced by sensitive receptors during certain hours.[2]

As adopted in the 2007 EIS/R, the project is committed to implementing SBSP Mitigation Measure 3.13-1, which requires that construction activities be limited to the days and hours or noise levels designated for the City of Menlo Park, where the work activities would occur. Therefore, construction activities would not occur during noise-sensitive hours. The project is also committed to implementation of SBSP Mitigation Measure 3.13-2, which requires trucks to avoid residential areas for haul routes. Therefore, noise impacts from short-term construction activities would be less than significant.

Alternative Ravenswood C Level of Significance: Less than Significant

Alternative Ravenswood D. Alternative Ravenswood D would open Pond R4 to tidal flows, improve levees to provide additional flood protection, create two habitat transition zones in Pond R4, establish enhanced managed ponds in Ponds R5 and S5 to improve habitat for diving and dabbling birds, increase pond connectivity, enhance Pond R3 for western snowy plover habitat, allow stormwater outflow from Redwood City to Ponds R5 and S5, remove the levees within and between Ponds R5 and S5, and improve recreation and public access. Construction could be accomplished using excavators, bulldozers, amphibious equipment such as an aquatic excavator, dump trucks, compaction rollers or vibratory plates, a water tanker, refueling tanks, and pickup vehicles for transportation in and out of the project site.

Implementation of Alternative Ravenswood D would result in similar noise impacts as Alternative Ravenswood B because construction activities would involve the same equipment and construction would occur generally in the same locations relative to the nearby sensitive receptors.

As adopted in the 2007 EIS/R, the project is committed to implementing SBSP Mitigation Measure 3.13-1**,** which requires that construction activities be limited to the days and hours or noise levels designated for the City of Menlo Park, where the work activities would occur. Therefore, construction activities would not occur during noise-sensitive hours. The project is also committed to implementation

[2] Per 2007 EIS/R Mitigation Measure 3.13-1.

of SBSP Mitigation Measure 3.13-2, which requires trucks to avoid residential areas for haul routes. Therefore, noise impacts from short-term construction activities would be less than significant.

Alternative Ravenswood D Level of Significance: Less than Significant

Phase 2 Impact 3.12-2: Traffic-related noise impacts during construction.

Alviso-Island Ponds

Alternative Island A (No Action). Under Alternative Island A, the No Action Alternative, no new construction would occur under Phase 2 and the pond cluster would continue to be monitored and managed through the activities described in the AMP in accordance with current USFWS practices. As such, no short-term construction noise impacts would occur.

Alternative Island A Level of Significance: No Impact

Alternative Island B. Construction activities would require the transport of equipment to and from the pond cluster. No material would need to be moved on- or off-site for the construction of this alternative. Short-term construction traffic would consist of the transportation of the worker crew, which would consist of three to five people per day, and other construction truck trips delivering small equipment. The transport of equipment at the beginning and end of the construction seasons would occur by accessing the ponds on barges from the Bay water side, either through Mud Slough or Coyote Creek. Vehicle trips would be spread over the construction period, which would likely be completed in 16 months over two or three construction seasons.

Typically, an increase in noise levels is perceptible (3 dBA [CNEL/ L_{dn}]) when traffic volumes double along an affected roadway segment. Access to each site for daily work crews is provided via local roadways as described in Section 3.11, Traffic. These routes would occur primarily along highways and through industrial and commercial uses. Per SBSP Mitigation Measure 3.13-2, trucks are required to avoid residential areas where sensitive receptors are located and, as such, impacts would be less than significant.

Alternative Island B Level of Significance: Less than Significant

Alternative Island C. Construction of Alternative Island C would be similar to that of Alternative Island B. As with Alternative Island B, short-term construction traffic would consist of the transportation of the worker crew, which would consist of three to five people per day, and other construction truck trips delivering small equipment. The transport of equipment at the beginning and end of construction seasons would occur by accessing the ponds on barges from the Bay water side, either through Mud Slough or Coyote Creek. Vehicle trips would be spread over the construction period, which would likely be completed in 19 months over two or three construction seasons. Per SBSP Mitigation Measure 3.13-2, trucks are required to avoid residential areas where sensitive receptors are located, and as such, impacts would be less than significant.

Alternative Island C Level of Significance: Less than Significant

Alviso-Mountain View Ponds

Alternative Mountain View A (No Action). Under Alternative Mountain View A, no new activities would be implemented as part of Phase 2. The USFWS is maintaining the ponds as part of the Refuge system and the AMP. The pond cluster would continue to be managed through the activities described in

the AMP in accordance with current USFWS practices. Under Mountain View Alternative A, no construction activities would occur within the Mountain View pond cluster. As such, no short-term construction noise impacts would occur.

Alternative Mountain View A Level of Significance: No Impact

Alternative Mountain View B. Construction of Alternative Mountain View B would require the transport of equipment and the generation of truck trips associated with the delivery of equipment at the beginning and end of the construction period, daily worker vehicles, and from the long-term delivery of as much as 296,400 cy of upland fill, requiring 200 daily trips by trucks carrying 11 cy each. Truck trips for the delivery of fill would be concentrated in the shortest duration (in months) possible, which would likely require a total of approximately 6.1 months over portions of three construction seasons.

Typically, an increase in noise levels is perceptible (3 dBA [CNEL/ L_{dn}]) when traffic volumes double along an affected roadway segment. Access to each pond cluster is provided via local roadways, as described in Section 3.11, Traffic. These haul routes would occur primarily along highways and through industrial and commercial uses. Per SBSP Mitigation Measure 3.13-2, trucks would be required to avoid residential areas.

Short-term construction traffic would consist of the transportation of the worker crew, which would consist of five to 10 people per day, and other construction truck trips delivering equipment and materials.

A large volume of traffic travels on U.S. 101 and major arterials like San Antonio Road, which currently handles 897 northbound (NB) trips and 256 southbound (SB) trips in the a.m. peak hour and 486 NB trips and 1,035 SB trips in the p.m. peak hour per Appendix G, Traffic Impact Study for South Bay Salt Pond Restoration – Phase 2 Project. A large volume of traffic also goes into and out of Shoreline Park and the numerous business parks in this portion of Mountain View (including those for Google, LinkedIn, and other businesses with large and expanding campuses and numerous employees). Relative to these large volumes of traffic, the total number of crew trucks and a maximum of 20 fill-delivery trucks per hour is not expected to cause a substantial increase in the vehicle-related noise in the area.

Alternative Mountain View B Level of Significance: Less than Significant

Alternative Mountain View C. Construction of Alternative Mountain View C would be similar to that of Alternative Mountain View B, but with an estimated delivery of 369,600 cy of upland fill, requiring 200 daily trips by trucks carrying 11 cy each. As with Alternative Island B, short-term construction traffic would consist of the transportation of the worker crew, which would consist of five to 10 people per day, and other construction truck trips delivering equipment and materials. Truck trips for the delivery of fill would be concentrated in the shortest duration (in months) possible, which would likely require a total of approximately 7.6 months over portions of three construction seasons. Per SBSP Mitigation Measure 3.13-2, trucks would be required to avoid residential areas.

A large volume of traffic travels on U.S. 101 and major arterials like San Antonio Road, which currently handles 897 NB trips and 256 SB trips in the a.m. peak hour and 486 NB trips and 1,035 SB trips in the p.m. peak hour per Appendix G, Traffic Impact Study for South Bay Salt Pond Restoration – Phase 2 Project. A large volume of traffic also goes into and out of Shoreline Park and the numerous business parks in this portion of Mountain View (including those for Google, LinkedIn, and other businesses with large and expanding campuses and numerous employees). Relative to these large volumes of traffic, the

total number of crew trucks and a maximum of 20 fill-delivery trucks per hour is not expected to cause a substantial increase in the vehicle-related noise in the area.

Alternative Mountain View C Level of Significance: Less than Significant

Alviso-A8 Ponds

Alternative A8 A (No Action). Under Alternative A8 A (No Action), no upland fill material would be added to the pond bottoms or the border levees of either Pond A8 or Pond A8S. The USFWS would continue to operate and maintain the ponds in accordance with the AMP and other ongoing management practices that have been in place since the implementation of Phase 1 actions. The Phase 2 No Action Alternative for the A8 Ponds would not require construction activities within the ponds. As such, no short-term construction noise impacts would occur.

Alternative A8 A Level of Significance: No Impact

Alternative A8 B. Construction of Alternative A8 B would require an estimated delivery of 190,000 cy of fill material necessary to construct the habitat transition zones. This would require 180 trips per day for 96 days by trucks carrying 11 cy each. As with the other pond clusters, short-term construction traffic would consist of the transportation of the worker crew, which would consist of three to five people per day, and other construction truck trips delivering equipment and materials. Truck trips for the delivery of fill would be concentrated in the shortest duration (in months) possible, which would likely be approximately 4-5 months. Per SBSP Mitigation Measure 3.13-2, trucks would be required to avoid residential areas.

A large volume of traffic travels of SR 237 and arterials like Great American Parkway, which currently handles 418 NB trips and 471 SB trips in the a.m. peak hour and 721 NB trips and 1,149 SB in the p.m. peak hour per Appendix G, Traffic Impact Study for South Bay Salt Pond Restoration – Phase 2 Project. A large volume of traffic also uses Gold Street to go into and out of the Alviso community. Relative to these large volumes of traffic, the total number of crew trucks and a maximum of 18 fill-delivery trucks per hour is not expected to cause a substantial increase in the vehicle-related noise in the area.

Alternative A8 B Level of Significance: Less than Significant

Ravenswood Ponds

Alternative Ravenswood A (No Action). Under Alternative Ravenswood A, no new activities would be implemented as part of Phase 2. The USFWS is maintaining the ponds as part of the Refuge system and the AMP. As such, Alternative Ravenswood A would not require construction activities within the ponds. As such, no impacts from short-term construction noise would occur.

Alternative Ravenswood A Level of Significance: No Impact

Alternative Ravenswood B. Construction of Ravenswood Alternative B could require an estimated delivery of 37,900 cy of fill in the form of appropriate upland material to be imported and used in Ponds R4, R5, or S5 to enhance levees or build the habitat transition zones, requiring 150 daily trips by trucks carrying 11 cy each.

As with the other pond clusters, short-term construction traffic would consist of the transportation of the worker crew, which would consist of five to 10 people per day, and other construction truck trips delivering equipment and materials. Truck trips for the delivery of fill would be concentrated in the

shortest duration (in months) possible, which would likely be approximately 1 month. Per SBSP Mitigation Measure 3.13-2, trucks would be required to avoid residential areas.

A large volume of traffic travels on SR 84/Marsh Road, which currently handles 1,761 NB trips and 2,884 SB trips in the a.m. peak hour and 1,779 NB trips and 2,354 SB trips in the p.m. peak hour per Appendix G, Traffic Impact Study for South Bay Salt Pond Restoration – Phase 2 Project. This route will provide direct access to the project site for construction-related vehicles. Relative to this large volume of traffic, the total number of crew trucks and a maximum of 15 fill-delivery trucks per hour is not expected to cause a substantial increase in the vehicle-related noise in the area.

Alternative Ravenswood B Level of Significance: Less than Significant

Alternative Ravenswood C. Construction of Alternative Ravenswood C would be similar to that of Alternative Ravenswood B. Construction of Alternative Ravenswood C could require an estimated delivery of 210,400 cy of fill in the form of appropriate fill material, requiring 150 daily trips by trucks carrying 11 cy each.

As with the other pond clusters, short-term construction traffic would consist of the transportation of the worker crew, which would consist of five to 10 people per day, and other construction truck trips delivering equipment and materials. Truck trips for the delivery of fill would be concentrated in the shortest duration (in months) possible, which would likely be approximately 5.8 months. Per SBSP Mitigation Measure 3.13-2, trucks would be required to avoid residential areas and delivery of material would be limited to daytime hours only.

A large volume of traffic travels on SR 84/Marsh Road, which currently handles 1,761 NB trips and 2,884 SB trips in the a.m. peak hour and 1,779 NB trips and 2,354 SB trips in the p.m. peak hour per Appendix G, Traffic Impact Study for South Bay Salt Pond Restoration – Phase 2 Project. This route will provide direct access to the project site for construction-related vehicles. Relative to this large volume of traffic, the total number of crew trucks and a maximum of 15 fill-delivery trucks per hour is not expected to cause a substantial increase in the vehicle-related noise in the area.

Alternative Ravenswood C Level of Significance: Less than Significant

Alternative Ravenswood D. Construction activities would require the transport of equipment to and from the pond cluster. Short-term construction traffic would consist of the transportation of the worker crew, which would consist of five to 10 people per day, and other construction truck trips delivering equipment and materials. Truck trips would be associated with the delivery of equipment at the beginning and the end of the construction period and daily worker vehicles. No net import of fill material would be needed.

A large volume of traffic travels on SR 84/Marsh Road, which currently handles 1,761 NB trips and 2,884 SB trips in the a.m. peak hour and 1,779 NB trips and 2,354 SB trips in the p.m. peak hour per Appendix G, Traffic Impact Study for South Bay Salt Pond Restoration – Phase 2 Project. This route will provide direct access to the project site for construction-related vehicles. Relative to this large traffic volume, the total number of crew trucks and a maximum of 15 fill-delivery trucks per hour is not expected to cause a substantial increase in the vehicle-related noise in the area.

Alternative Ravenswood D Level of Significance: Less than Significant

Phase 2 Impact 3.12-3: Traffic-related noise effects during operation.

Alviso-Island Ponds

Alternative Island A (No Action). Under this alternative, limited O&M activities would occur. The pond cluster would continue to be monitored and managed through the activities described in the AMP and in accordance with current USFWS practices. Ongoing monitoring and studies to track the progress of these ponds toward restoration as tidal marsh would be the principal component of the continued implementation of the AMP at this pond cluster. Small crews of workers may be on-site during O&M activities; fewer workers would likely be on-site for O&M activities than for a typical construction worker crew, which would likely be five to 10 people. The increase in traffic associated with O&M activities would be minimal (see SBSP Phase 2 Impact 3.11-2, in Section 3.11, Traffic) and is not expected to increase to a level that would generate traffic-related noise. Furthermore, O&M traffic is expected to be primarily passenger vehicles rather than heavy-duty trucks, as would be required for construction activities. As such, impacts would be less than significant.

Alternative Island A Level of Significance: Less than Significant

Alternative Island B. Under Alternative Island B, O&M activities for components of the pond cluster within the Refuge would continue to follow and be determined by the 1995 United States Army Corps of Engineers (USACE) permit #19009S98, applicable county operations, and the AMP. The Union Pacific Railroad would continue to operate and maintain its infrastructure; these activities would occur in coordination with the Refuge managers to ensure consistency with the O&M for the pond cluster.

Periodic maintenance of the pond infrastructure would be required following construction. Maintenance would require approximately one maintenance staff person to travel to the pond cluster one or two times a week to perform activities such as predator control, general vegetation control, and vandalism repairs. AMP monitoring activities would also occur and could require additional workers (e.g., staff, consultants) to access the pond clusters. The frequency of visits to the pond cluster to conduct AMP monitoring activities would depend on the actual activities and would vary by season (e.g., during the bird breeding season there could be more trips to the site than during the non-breeding season). However, the number of trips to the Island Ponds for maintenance is not expected to increase over the baseline by more than a few trips per week.

Intermittent traffic noise associated with Alternative Island B activities would be less than significant based on the relatively small increase in daily vehicle traffic in comparison to what occurs now under existing conditions or would occur under Alternative Island A (No Action) and because trips would occur during daytime hours.

Alternative Island B Level of Significance: Less than Significant

Alternative Island C. The O&M activities at this pond cluster under this alternative would be the same as those under Alternative Island B. No additional or different activities would occur to operate or maintain these ponds under this alternative.

Intermittent traffic noise associated with Alternative Island C activities would be less than significant based on the relatively small increase in daily vehicle traffic in comparison to what occurs now under existing conditions or would occur under Alternative Island A (No Action) and because trips would occur during daytime hours.

Alternative Island C Level of Significance: Less than Significant

Alviso-Mountain View Ponds

Alternative Mountain View A (No Action). Under this alternative, limited O&M activities would occur and existing trails on many of the levees along the boundary of the pond cluster would continue to be maintained and used. Small crews of workers may be on-site during O&M activities; fewer workers would likely be on-site for O&M activities than for a typical construction worker crew, which would likely be five to 10 people. The increase in traffic associated with O&M and recreation activities would be minimal (see SBSP Phase 2 Impact 3.11-2, in Section 3.11, Traffic) and is not expected to increase to a level that would generate traffic-related noise. Furthermore, O&M traffic is expected to be primarily passenger vehicles rather than heavy-duty trucks, as would be required for construction activities. As such, impacts would be less than significant.

Alternative Mountain View A Level of Significance: Less than Significant

Alternative Mountain View B. Under Alternative Mountain View B, O&M activities for components of the pond cluster within the Refuge would continue to follow and be determined by 1995 USACE Permit #19009S98, applicable County operations, and the AMP. PG&E would continue to operate and maintain its infrastructure, which would occur in coordination with the Refuge managers to ensure consistency with the O&M activities for the pond cluster. The City of Mountain View would continue to operate and maintain its properties that are a part of the pond cluster, which would also occur in coordination with the Refuge managers.

Periodic maintenance of the pond infrastructure would be required following construction. Maintenance would require approximately one maintenance staff person to travel to the pond cluster one or two times a week to perform activities such as predator control, general vegetation control, and vandalism repairs. Improved levees would be inspected and maintained for slope stability, erosion control, seepage, slides, and settlement on an annual basis. Maintenance is expected every 5 years to add additional fill material in areas where settlement occurs. AMP monitoring activities would also occur; these activities would require additional workers (e.g., staff, consultants) to access the pond clusters. The frequency of visits to the pond cluster to conduct AMP monitoring activities would depend on the actual activities and would vary by season (e.g., during the bird breeding season there could be more trips to the site than during the non-breeding season). Visits could include maintenance of habitat transition zones, flood control levees, and recreational facilities as needed over time.

Intermittent traffic noise associated with Alternative Mountain View B activities would be less than significant based on the relatively small increase in daily vehicle traffic in comparison to what occurs now under existing conditions or what would occur over time under Alternative Mountain View A (No Action) and because trips would occur during daytime hours.

Alternative Mountain View B Level of Significance: Less than Significant

Alternative Mountain View C. The O&M activities at this pond cluster under this alternative would be similar in nature to those in Alternative Mountain View B. However, some of those maintenance activities would occur in different places (e.g., on the west levee of Charleston Slough instead of on the west levee of Pond A1) or over a larger or smaller area (e.g., Alternative C has more trails to maintain and fewer square feet of habitat transition zones). There would be a slight increase in the number of maintenance trips to the Mountain View ponds because of the greater number of public access facilities and the additional water intake system for the Shoreline Park sailing lake, but these would generally be intermittent visits by passenger vehicles and pickup trucks.

Intermittent traffic noise associated with Alternative Mountain View C activities would be less than significant based on the relatively small increase in daily vehicle traffic in comparison to what occurs now under existing conditions or what would occur over time under Alternative Mountain View A (No Action) and because trips would occur during daytime hours.

Alternative Mountain View C Level of Significance: Less than Significant

Alviso-A8 Ponds

Alternative A8 A (No Action). Under this alternative, limited O&M activities would occur. Small crews of workers may be on-site during O&M activities; fewer workers would likely be on-site for O&M activities than for a typical construction worker crew, which would likely be five to 10 people. The increase in traffic associated with O&M activities would be minimal (see SBSP Phase 2 Impact 3.11-2, in Section 3.11, Traffic) and is not expected to increase to a level that would generate traffic-related noise. Furthermore, O&M traffic is expected to be primarily passenger vehicles rather than heavy-duty trucks, as would be required for construction activities. As such, impacts would be less than significant.

Alternative A8 A Level of Significance: Less than significant.

Alternative A8 B. The USFWS would continue to operate and maintain the ponds in accordance with the AMP and other ongoing management practices that have been in place since the implementation of Phase 1 actions. The Santa Clara Valley Water District (SCVWD) would also be involved in maintaining these ponds. These ongoing management practices would not change during or after the construction activities described above. Refer to pages 2-120 through 2-132 of the 2007 EIS/R for additional details.

Intermittent traffic noise associated with Alternative A8 B activities would be less than significant based on the relatively small increase in daily vehicle traffic in comparison to what occurs now under existing conditions or what would occur under Alternative A8 A (No Action) and because trips would occur during daytime hours.

Alternative A8 B Level of Significance: Less than significant

Ravenswood Ponds

Alternative Ravenswood A (No Action). Under this alternative, limited O&M activities would occur. Small crews of workers may be on-site during O&M activities; fewer workers would likely be on-site for O&M activities than for a typical construction worker crew, which would likely be five to 10 people. The increase in traffic associated with O&M activities would be minimal (see SBSP Phase 2 Impact 3.11-2, in Section 3.11, Traffic) and is not expected to increase to a level that would generate traffic-related noise. Furthermore, O&M traffic is expected to be primarily passenger vehicles rather than heavy-duty trucks, as would be required for construction activities. As such, impacts would be less than significant.

Alternative Ravenswood A Level of Significance: Less than Significant

Alternative Ravenswood B. Under Alternative Ravenswood B, O&M activities for components of the pond cluster within the Refuge would continue to follow and be determined by 1995 USACE permit #19009S98, applicable county operations, and the AMP. PG&E would continue to operate and maintain its infrastructure, which would occur in coordination with the Refuge managers to ensure consistency with the O&M activities at the pond cluster. The City of Menlo Park would continue to operate and

maintain its properties that are adjacent to the pond cluster; these activities would also occur in coordination with the Refuge managers.

Periodic maintenance of the pond infrastructure would be required following construction. Maintenance would require approximately one maintenance staff person to travel to the pond cluster one or two times a week to perform activities such as predator control, general vegetation control, and vandalism repairs. AMP monitoring activities would also occur; these activities would require additional workers (e.g., staff, consultants) to access the pond clusters. The frequency of visits to the pond cluster to conduct AMP monitoring activities would depend on the actual activities and would vary by season (e.g., during the bird breeding season there could be more trips to the site than during the non-breeding season). These activities could include maintenance of habitat transition zones, flood control levees, and recreational facilities as needed over time.

Intermittent traffic noise associated with Alternative Ravenswood B activities would be less than significant based on the relatively small increase in daily vehicle traffic in comparison to what would occur now under existing conditions or what would occur over time under Alternative Ravenswood A (No Action) and because trips would occur during daytime hours.

Alternative Ravenswood B Level of Significance: Less than Significant

Alternative Ravenswood C. The O&M activities at this pond cluster under this alternative would be the same as those for Alternative Island B. No additional or different activities would occur to operate or maintain these ponds under this alternative.

Intermittent traffic noise associated with Alternative Ravenswood C activities would be less than significant based on the relatively small increase in daily vehicle traffic in comparison to what would occur now under existing conditions or what would occur over time under Alternative Ravenswood A (No Action) and because trips would occur during daytime hours.

Alternative Ravenswood C Level of Significance: Less than Significant

Alternative Ravenswood D. The O&M activities at this pond cluster under this alternative would be similar to those under Alternative Island B. The only additional or different activities to operate or maintain these ponds under this alternative would be associated with the cleaning and maintenance of the pipes and ditch for the Bayfront Canal and Atherton Channel. These will require periodic cleaning (e.g., trash removal) and inspections for maintenance; generally, these activities would consist of a single vehicle for staff to drive to the site. This alternative would not dramatically increase traffic to the site or the overall noise associated with traffic.

Intermittent traffic noise associated with Alternative Ravenswood D activities would be less than significant based on the relatively small increase in daily vehicle traffic in comparison to what would occur now under existing conditions or what would occur over time under Alternative Ravenswood A (No Action) and because trips would occur during daytime hours.

Alternative Ravenswood D Level of Significance: Less than Significant

Phase 2 Impact 3.12-4: Potential operational noise effects from O&M activities.

Alviso-Island Ponds

Alternative Island A (No Action). Under this alternative, limited O&M activities would occur. The pond cluster would continue to be monitored and managed through the activities described in the AMP and in accordance with current USFWS practices. Ongoing monitoring and studies to track the progress of these ponds toward restoration as tidal marsh would be the principal component of the continued implementation of the AMP at this pond cluster. Alternative Island A (No Action) activities would require limited O&M activities that would generate noise. However, because O&M activities would occur during daytime, non-noise-sensitive hours only, and because such activities would occur intermittently within the 50-year planning period, noise effects would be less than significant.

Alternative Island A Level of Significance: Less than Significant

Alternative Island B. Under Alternative Island B, O&M activities for components of the pond cluster within the Refuge would continue to follow and be determined by 1995 USACE permit #19009S98, applicable county operations, and the AMP. The Union Pacific Railroad would continue to operate and maintain its infrastructure, which would occur in coordination with the Refuge managers to ensure the consistency of the O&M activities at the pond cluster.

Periodic maintenance of the pond infrastructure would be required following construction. Maintenance would require approximately one maintenance staff person to travel to the pond cluster one or two times a week to perform activities such as predator control, general vegetation control, and vandalism repairs. AMP monitoring activities would also occur and could require additional workers (e.g., staff, consultants) to access the pond cluster. The frequency of visits to the pond cluster to conduct AMP monitoring activities would depend on the actual activities and would vary by season (e.g., during the bird breeding season there could be more trips to the site than during the non-breeding season). However, the number of trips to the Island Ponds for maintenance is not expected to increase over the baseline by more than a few trips per week.

Intermittent O&M activities associated with Alternative Island B, such as predator control, general vegetation control, and vandalism repairs, would not significantly increase noise levels to greater levels than currently occur under existing conditions or what would occur over time under Alternative Island A (No Action).Therefore, operation noise impacts would be less than significant.

Alternative Island B Level of Significance: Less than Significant

Alternative Island C. The O&M activities at this pond cluster under this alternative would be the same as those under Alternative Island B. No additional or different activities would occur to operate or maintain these ponds under this alternative.

Intermittent O&M activities associated with Alternative Island C, such as predator control, general vegetation control, and vandalism repairs, would not significantly increase noise levels to greater levels than currently occur now under existing conditions or what would occur over time under Alternative Island A (No Action).Therefore, operation noise impacts would be less than significant.

Alternative Island C Level of Significance: Less than Significant

Alviso-Mountain View Ponds

Alternative Mountain View A (No Action). Under this alternative, limited O&M activities would occur and existing trails on many of the levees along the boundary of the pond cluster would continue to be maintained and used. Small crews of workers may be on-site during O&M activities; fewer workers would likely be on-site for O&M activities than for a typical construction worker crew, which would likely be five to 10 people. Alternative Mountain View A (No Action) activities would require limited O&M activities that would generate noise. However, because O&M activities would occur during daytime, non-noise-sensitive hours only, and because such activities would occur intermittently within the 50-year planning period, noise effects would be less than significant.

Alternative Mountain View A Level of Significance: Less than Significant

Alternative Mountain View B. Under Alternative Mountain View B, O&M activities for components of the pond cluster within the Refuge would continue to follow and be determined by 1995 USACE permit #19009S98, applicable county operations, and the AMP. PG&E would continue to operate and maintain its infrastructure; these activities would occur in coordination with the Refuge managers to ensure the consistency of the O&M activities for the pond cluster. The City of Mountain View would continue to operate and maintain its properties that are a part of the pond cluster, and these activities would occur in coordination with the Refuge managers.

Periodic maintenance of the infrastructure would be required following construction. Maintenance would require approximately one maintenance staff person to travel to the pond cluster one or two times a week to perform activities such as predator control, general vegetation control, and vandalism repairs. Improved levees would be inspected and maintained for slope stability, erosion control, seepage, slides, and settlement on an annual basis. Maintenance is expected every 5 years to add additional fill material in areas where settlement occurs. AMP monitoring activities would also occur and could require additional workers (e.g., staff, consultants) to access the pond clusters. The frequency of visits to the pond cluster to conduct AMP monitoring activities would depend on the actual activities and would vary by season (e.g., during the bird breeding season there could be more trips to the site than during the non-breeding season). Trails and interpretive platforms would be regularly maintained and would be used for recreational purposes.

The intermittent O&M activities associated with Alternative Mountain View B would not significantly increase noise levels to levels greater than those that currently occur under existing conditions or what would occur over time under Alternative Mountain View A (No Action). Noise effects from operation of recreational facilities would be less than significant, as the low and occasional noise levels generated by recreational users would not be noticeable from off-site locations and such noises would be limited to the daytime hours when recreational facilities are open to the public. As such, impacts would be less than significant. Therefore operation noise impacts would be less than significant.

Alternative Mountain View B Level of Significance: Less than Significant

Alternative Mountain View C. The O&M activities at this pond cluster under this alternative would be similar to those under Alternative Mountain View B. However, some of those maintenance activities would occur in different places (e.g., on the western levee of Charleston Slough instead of on the western levee of Pond A1) or over a larger or smaller area (e.g., Alternative C has more trails to maintain and fewer square feet of habitat transition zones).

The intermittent O&M activities associated with Alternative Mountain View C would not significantly increase noise levels to levels greater than those that currently occur under existing conditions or what would occur over time under Alternative Mountain View A (No Action), although activities may occur more frequently. Noise effects from operation of recreational facilities would be less than significant, as the low and occasional noise levels generated by recreational users would not be noticeable from off-site locations and such noises would be limited to the daytime hours when recreational facilities are open to the public. As such, impacts would be less than significant. Therefore, operation noise impacts would be less than significant.

Alternative Mountain View C Level of Significance: Less than Significant

Alviso-A8 Ponds

Alternative A8 A (No Action). Under this alternative, limited O&M activities would occur. Small crews of workers may be on-site during O&M activities; fewer workers would likely be on-site for O&M activities than for a typical construction worker crew, which would likely be five to 10 people. Alternative A8 A (No Action) activities would require limited O&M activities that would generate noise. However, because O&M activities would occur during daytime, non-noise-sensitive hours only, and because such activities would occur intermittently within the 50-year planning period, noise effects would be less than significant.

Alternative A8 A Level of Significance: Less than Significant

Alternative A8 B. Under Alternative A8 B, the USFWS would continue to operate and maintain the ponds in accordance with the AMP and other ongoing management practices that have been in place since the implementation of Phase 1 actions. These management practices include the wet season management of tidal exchange between Pond A8 and Alviso Slough to avoid fish trapping and to maintain existing levels of flood protection; inspections of pond infrastructure to ensure the pond is operating as intended, achieving tidal connectivity as intended and meeting water quality requirements; monitoring of restoration performance; and summer water level recording.

The intermittent O&M activities associated with Alternative A8 B would not significantly increase noise levels to greater levels than currently occur under existing conditions or what would occur over time under Alternative A8 A (No Action).Therefore, operation noise impacts would be less than significant.

Alternative A8 B Level of Significance: Less than Significant

Ravenswood Ponds

Alternative Ravenswood A (No Action). Under this alternative, limited O&M activities would occur. Small crews of workers may be on-site during O&M activities; fewer workers would likely be on-site for O&M activities than for a typical construction worker crew, which would likely be five to 10 people. Alternative Ravenswood A (No Action) activities would require limited O&M activities that would generate noise. However, because O&M activities would occur during daytime, non-noise sensitive-hours only, and because such activities would occur intermittently within the 50-year planning period, noise effects would be less than significant.

Alternative Ravenswood A Level of Significance: Less than Significant

Alternative Ravenswood B. Under Alternative Ravenswood B, O&M activities for components of the pond cluster within the Refuge would continue to follow and be determined by 1995 USACE permit #19009S98, applicable county operations, and the AMP. PG&E would continue to operate and maintain its nearby infrastructure; these activities would occur in coordination with the Refuge managers to ensure the consistency of the O&M activities for the pond cluster. The City of Menlo Park would continue to operate and maintain its properties that are adjacent to the pond cluster, and these activities would occur in coordination with the Refuge managers.

Periodic maintenance of the pond infrastructure would be required following construction. Maintenance would require approximately one maintenance staff person to travel to the pond cluster one or two times a week to perform activities such as predator control, general vegetation control, and vandalism repairs. Water control structures would require inspection for structural integrity of gates, pipes, and approach way; obstruction to flow passage; and preventative maintenance such as visual functionality of gates, seals, and removal of debris. Inspection would be required every month during the first year and semi-annually thereafter. Maintenance would be required on an annual basis. AMP monitoring activities would also occur and would require additional workers (e.g., staff, consultants) to access the pond clusters. The frequency of visits to the pond cluster to conduct AMP monitoring activities would depend on the actual activities and would vary by season (e.g., during the bird breeding season there could be more trips to the site than during the non-breeding season). These activities could include operating water control structures and providing maintenance of habitat transition zones, flood control levees, and recreational facilities as needed over time.

The intermittent O&M activities associated with Alternative Ravenswood B would not significantly increase noise levels to levels greater than those that currently occur under existing conditions or would occur over time under Alternative Ravenswood A (No Action), although activities may occur more frequently. Noise effects of operation of recreational facilities would be less than significant, as the low and occasional noise levels generated by recreational users would not be noticeable from off-site locations and such noises would be limited to the daytime hours when recreational facilities are open to the public. As such, impacts would be less than significant. Therefore, operation noise impacts would be less than significant.

Alternative Ravenswood B Level of Significance: Less than Significant

Alternative Ravenswood C. The O&M activities at this pond cluster under this alternative would be similar to those under Alternative Ravenswood B. No additional or different activities would occur to operate or maintain these ponds under this alternative.

The intermittent O&M activities associated with Alternative Ravenswood C would not significantly increase noise levels to levels greater than those that currently occur under existing conditions or would occur over time under Alternative Ravenswood A (No Action), although activities may occur more frequently. Noise effects of operation of recreational facilities would be less than significant, as the low and occasional noise levels generated by recreational users would not be noticeable from off-site locations and such noises would be limited to the daytime hours when recreational facilities are open to the public. As such, impacts would be less than significant. Therefore, operation noise impacts would be less than significant.

Alternative Ravenswood C Level of Significance: Less than Significant

Alternative Ravenswood D. The O&M activities at this pond cluster under this alternative would be similar to those under Alternative Ravenswood B. The only additional or different activities to operate or maintain these ponds under this alternative would be associated with the cleaning and maintenance of the pipes and ditch for the Bayfront Canal and Atherton Channel. These activities would require periodic cleaning (e.g., trash removal) and inspections for maintenance, which would generally involve a single vehicle for staff to drive to the site. This activity would not dramatically increase noise associated with maintenance.

The intermittent O&M activities associated with Alternative Ravenswood D would not significantly increase noise levels to levels greater than those that currently occur under existing conditions or would occur over time under Alternative Ravenswood A (No Action), although activities may occur more frequently. Noise effects of operation of recreational facilities would be less than significant, as the low and occasional noise levels generated by recreational users would not be noticeable from off-site locations and such noises would be limited to the daytime hours when recreational facilities are open to the public. As such, impacts would be less than significant. Therefore, operation noise impacts would be less than significant.

Alternative Ravenswood D Level of Significance: Less than Significant

Phase 2 Impact 3.12-5: Potential vibration effects during construction and/or operation.

Alviso-Island Ponds

Alternative Island A (No Action). Under this alternative, no new construction activities and limited O&M activities would occur. The pond cluster would continue to be monitored and managed through the activities described in the AMP and in accordance with current USFWS practices. Ongoing monitoring and studies to track the progress of these ponds toward restoration as tidal marsh would be the principal component of the continued implementation of the AMP at this pond cluster. Alternative Island A (No Action) activities would require limited O&M activities that would generate vibration. However, because O&M activities would occur during daytime, non-vibration-sensitive hours only, and because such activities would occur intermittently within the 50-year planning period, vibration effects during construction and/or operation would be less than significant.

Alternative Island A Level of Significance: Less than Significant

Alternative Island B. Construction activities under this alternative have the potential to result in varying degrees of temporary groundborne vibration. Construction and operation of Ponds A19, A20, and A21 under Alternative B would not require the use of piledriving. However, construction of Alternative Island B would include use of excavators. The nearest sensitive receptor to construction equipment generating vibration is 10,000 feet. Using FTA's recommended procedure, with a predicted worst-case vibration level at approximately 10,000 feet would be approximately 0.00001 in/sec PPV and 9.7 VdB for operation of an excavator. As the distance of construction activities increases, the levels would decrease from those estimated above. From the calculated values, operation of Alternative Island B would not exceed the Caltrans recommended standard of 0.2 in/sec PPV and would not exceed the FTA's maximum-acceptable vibration standard of 80 VdB.

As adopted in the 2007 EIS/R, the project is committed to implementing SBSP Mitigation Measure 3.13-1**,** which requires that construction activities be limited to the days and hours or vibration levels

designated for the City of Fremont and the County of Alameda, where the work activities would occur. Therefore, construction activities would not occur during vibration-sensitive hours. The project is also committed to implementation of SBSP Mitigation Measure 3.13-2, which would require trucks to avoid residential areas for haul routes. Therefore, vibration impacts from short-term construction activities would be less than significant.

O&M activities within Ponds A19, A20, and A21 under Alternative Island B would not require the use of piledrivers or other heavy construction equipment that could potentially generate significant impacts from vibration. As such, vibration impacts resulting from O&M activities occurring under Alternative Island B would not be significantly greater than those occurring under Alternative Island A (No Action).

Alternative Island B Level of Significance: Less than Significant

Alternative Island C. Operation and construction of Alternative Island C would be similar to that defined for Alternative Island B above. As such, potential noise impacts from construction and operation would be less than significant.

Alternative C Level of Significance: Less than Significant

Alviso-Mountain View Ponds

Alternative Mountain View A (No Action). Under this alternative, limited O&M activities would occur and existing trails on many of the levees along the boundary of the pond cluster would continue to be maintained and used. Small crews of workers may be on-site during O&M activities; fewer workers would likely be on-site for O&M activities than for a typical construction worker crew, which would likely be five to 10 people. Alternative Mountain View A (No Action) activities would require limited O&M activities that would generate vibration. However, because O&M activities would occur during daytime, non-vibration-sensitive hours only, and because such activities would occur intermittently within the 50-year planning period, vibration effects during construction and/or operation would be less than significant.

Alternative Mountain View A Level of Significance: Less than Significant

Alternative Mountain View B. Construction activities under this alternative have the potential to result in varying degrees of temporary groundborne vibration. Construction of Alternative Mountain View B would require the use of piledrivers within Pond A2W for the construction of rail boxcar bridges that would span across the two breaches along the Pond A2W eastern levee. The nearest sensitive receptor to the piledriving activities required for construction of a cofferdam around the PG&E transmission tower foundations within Pond A2W is 6,900 feet. The nearest sensitive receptor to other construction equipment (e.g., bulldozers, compaction rollers, and excavators) generating vibration is 3,400 feet (Charleston Slough). Using FTA's recommended procedure, the predicted worst-case vibration levels at 6,900 feet would be approximately 0.0003 in/sec PPV and 39.0 VdB for operation of the piledriver. As the distance of construction activities increases, the vibration levels would decrease from those estimated above. From the calculated values, operation of Alternative Mountain View B would not exceed the Caltrans recommended standard of 0.2 in/sec PPV and would not exceed FTA's maximum-acceptable vibration standard of 80 VdB. As such, potential impacts would be less than significant.

As adopted in the 2007 EIS/R, the project is committed to implementing SBSP Mitigation Measure 3.13-1**,** which requires that construction activities be limited to the days and hours or vibration levels designated for the City of Mountain View, where the work activities would occur. Therefore, construction

activities would not occur during vibration-sensitive hours. The project is also committed to implementation of SBSP Mitigation Measure 3.13-2, which requires trucks to avoid residential areas for haul routes. Therefore, vibration impacts from short-term construction activities would be less than significant.

O&M activities within Ponds A1 and A2W and Charleston Slough under Alternative Mountain View B would not require the use of piledrivers. Although heavy construction equipment may be needed to repair and maintain levees, SBSP Mitigation Measure 3.13-1 would be implemented. As such, vibration impacts resulting from O&M activities occurring under Alternative Mountain View B would not be significantly greater than those occurring under Alternative Mountain View A (No Action).

Alternative Mountain View B Level of Significance: Less than Significant

Alternative Mountain View C. Construction and operation of Alternative Mountain View C would be similar to that defined for Alternative Mountain View B, though the construction and operation would occur over a longer construction period and in somewhat more spatially distributed areas (to include Charleston Slough and the levees surrounding it). As such, no vibration resulting from construction or operation would occur.

Alternative Mountain View C Level of Significance: Less than Significant

Alviso-A8 Ponds

Alternative A8 A (No Action). Under this alternative, limited O&M activities would occur. Small crews of workers may be on-site during O&M activities; fewer workers would likely be on-site for O&M activities than for a typical construction worker crew, which would likely be five to 10 people. Alternative A8 A (No Action) activities would require limited O&M activities that would generate vibration. However, because O&M activities would occur during daytime, non-vibration-sensitive hours only, and because such activities would occur intermittently within the 50-year planning period, vibration effects during construction and/or operation would be less than significant.

Alternative A8 A Level of Significance: Less than Significant

Alternative A8 B. Construction activities under this alternative have the potential to result in varying degrees of temporary groundborne vibration. Construction of Ponds A8 and A8S under Alternative A8 B would not require the use of piledriving. However, construction of Alternative A8 B would include use of a bulldozer, water trucks, compaction rollers, and other equipment. The nearest sensitive receptor to construction equipment (e.g., a bulldozer) generating vibration is 2,000 feet away. Using FTA's recommended procedure, the predicted worst-case vibration levels at approximately 2,000 feet would be approximately 0.0021 in/sec PPV and 29.9 VdB for operation of bulldozers, water trucks, and compaction rollers. As the distance of construction activities increases, the levels would decrease from those estimated above. From the calculated values, operation of Alternative A8 B would not exceed the Caltrans recommended standard of 0.2 in/sec PPV and would not exceed the FTA's maximum-acceptable vibration standard of 80 VdB.

As adopted in the 2007 EIS/R, the project is committed to implementing SBSP Mitigation Measure 3.13-1, which requires that construction activities be limited to the days and hours or vibration levels designated for the City of San Jose, where the work activities would occur. All construction equipment staging areas would be located at the furthest distance possible from nearby vibration-sensitive land uses, and construction equipment would be properly maintained and equipped with noise control, such as

mufflers, in accordance with manufacturers' specifications. Therefore, vibration impacts from short-term construction activities would be less than significant.

O&M activities within Ponds A8 and A8S under Alternative A8 B would not require the use of piledrivers or other heavy construction equipment that could potentially generate significant impacts from vibration. As such, no vibration resulting from operation would occur under Alternative A8 B.

Alternative A8 B Level of Significance: Less than Significant

Ravenswood Ponds

Alternative Ravenswood A (No Action). Under this alternative, limited O&M activities would occur. Small crews of workers may be on-site during O&M activities; fewer workers would likely be on-site for O&M activities than for a typical construction worker crew, which would likely be five to 10 people. Alternative Ravenswood A (No Action) would require limited O&M activities that would generate vibration. However, because O&M activities would occur during daytime, non-vibration-sensitive hours only, and because such activities would occur intermittently within the 50-year planning period, vibration effects during construction and/or operation would be less than significant.

Alternative Ravenswood A Level of Significance: Less than Significant

Alternative Ravenswood B. Construction activities under this alternative would have the potential to result in varying degrees of temporary groundborne vibration. Construction of Alternative Ravenswood B would require the use of piledrivers within Ponds R3, R4, R5, and S5 for the construction of water control structures. The nearest sensitive receptor to the piledriving activities would be 1,900 feet at Pond S5. The nearest sensitive receptor to other construction equipment (e.g., piledriver) generating vibration is 1,000 feet (Pond R3). Using FTA's recommended procedure, the predicted worst-case vibration levels at approximately 1,900 feet would be approximately 0.0021 in/sec PPV and 55.6 VdB for operation of the piledriver. As the distance of construction activities increases, the levels would decrease from those estimated above. From the calculated values, operation of Alternative Ravenswood B would not exceed the Caltrans recommended standard of 0.2 in/sec PPV and would not exceed FTA's maximum-acceptable vibration standard of 80 VdB.

As adopted in the 2007 EIS/R, the project is committed to implementing SBSP Mitigation Measure 3.13-1, which requires that construction activities be limited to the days and hours or vibration levels designated for the City of Menlo Park, where the work activities would occur. Therefore, construction activities would not occur during vibration-sensitive hours. The project is also committed to implementation of SBSP Mitigation Measure 3.13-2, which limits the hours that trucks may deliver fill and requires trucks to avoid residential areas for haul routes. Therefore, vibration impacts from short-term construction activities would be less than significant.

O&M activities with Ponds R3, R4, R5, and S5 under Alternative Ravenswood B would not require the use of piledrivers. Although heavy construction equipment may be needed to repair and maintain levees, SBSP Mitigation Measure 3.13-1 would be implemented. As such, vibration impacts resulting from O&M activities occurring under Alternative Ravenswood B would not be significantly greater than those occurring Alternative Ravenswood A (No Action).

Alternative Ravenswood B Level of Significance: Less than Significant

Alternative Ravenswood C. Operation and construction of Alternative Ravenswood C would be similar to that defined for Alternative Ravenswood B above. As such, potential impacts from construction would be less than significant and no vibration impacts would occur from operation.

Alternative Ravenswood C Level of Significance: Less than Significant

Alternative Ravenswood D. Operation and construction of Alternative Ravenswood D would be similar to that defined for Alternative Ravenswood B above. As such, potential impacts from construction would be less than significant and no vibration impacts would occur from operation.

Alternative Ravenswood D Level of Significance: Less than Significant

Impact Summary

Phase 2 noise impacts and levels of significance are summarized in Table 3.12-7. The levels of significance are those remaining after implementation of program-level mitigation measures, project-level design features and the AMP and other Refuge management practices and documents. The noise analysis required no project-level mitigation measures to reduce the impacts to a level that was less than significant.

Table 3.12-7 Phase 2 Summary of Impacts – Noise

IMPACT	ALTERNATIVE											
	ISLAND			MOUNTAIN VIEW			A8		RAVENSWOOD			
	A	B	C	A	B	C	A	B	A	B	C	D
Phase 2 Impact 3.12-1: Short-term construction noise effects.	NI	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS	LTS	LTS
Phase 2 Impact 3.12-2: Traffic-related noise impacts during construction.	NI	LTS	LTS	NI	LTS	LTS	NI	LTS	NI	LTS	LTS	LTS
Phase 2 Impact 3.12-3: Traffic-related noise effects during operation.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2 Impact 3.12-4: Potential operational noise effects from O&M activities.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Phase 2 Impact 3.12-5: Potential vibration effects during construction and/or operation.	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Note: Alternative A at each pond cluster is the No Action (No Project Alternative under CEQA).

LTS = Less than Significant
NI = No Impact

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3.12 Noise 3.12-1
3.12.1 Physical Setting 3.12-1
3.12.2 Regulatory Setting 3.12-6
3.12.3 Environmental Impacts and Mitigation Measures 3.12-10

Table 3.12-1 Typical Construction-Equipment Noise Levels for Various Types of Equipment 3.12-11
Table 3.12-2 Project Alternatives: Distances to the Nearest Sensitive Receptors 3.12-12
Table 3.12-3 Predicted Construction Noise Levels at Various Distances 3.12-13
Table 3.12-4 Construction Fill (CY) and Truck Trips 3.12-14
Table 3.12-5 Typical Construction Equipment Vibration Levels 3.12-15
Table 3.12-6 Predicted Vibration Levels at Nearby Sensitive Receptors from Construction Activities 3.12-15
Table 3.12-7 Phase 2 Summary of Impacts – Noise 3.12-39

Figure 3.12-1. Sensitive Receptors 3.12-4