

### 18.1 INTRODUCTION

This section evaluates the potential noise and vibration impacts associated with the implementation of the Santa Clarita Valley Sanitation District (SCVSD) Chloride Compliance Project (proposed project). This section describes existing noise and vibration conditions at the proposed project site and its vicinity, provides a summary of applicable noise and vibration standards and ordinances, assesses short-term construction and long-term operational noise and vibration impacts associated with implementation of the proposed project, and identifies mitigation measures to minimize potential effects.

### 18.2 ENVIRONMENTAL SETTING

#### 18.2.1 Noise Principles and Descriptors

Noise is defined as any loud, unexpected, or unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as sound level), which is measured in decibels (dB), with 0 dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Pressure waves traveling through air exert a force registered by the human ear as sound.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies varying in levels of magnitude (sound power). When all the audible frequencies of a sound are measured, a sound spectrum is plotted consisting of a range of frequency spanning 20 to 20,000 Hz. The sound pressure level, therefore, constitutes the additive force exerted by a sound corresponding to the sound frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies below 1,000 Hz and above 5,000 Hz in a manner corresponding to the human ears' decreased sensitivity to low and extremely high frequencies rather than the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). Frequency A-weighting follows an international standard methodology of frequency de-emphasis and is typically applied to community noise measurements. Some representative noise sources and their corresponding A-weighted noise levels are shown on Figure 18-1.

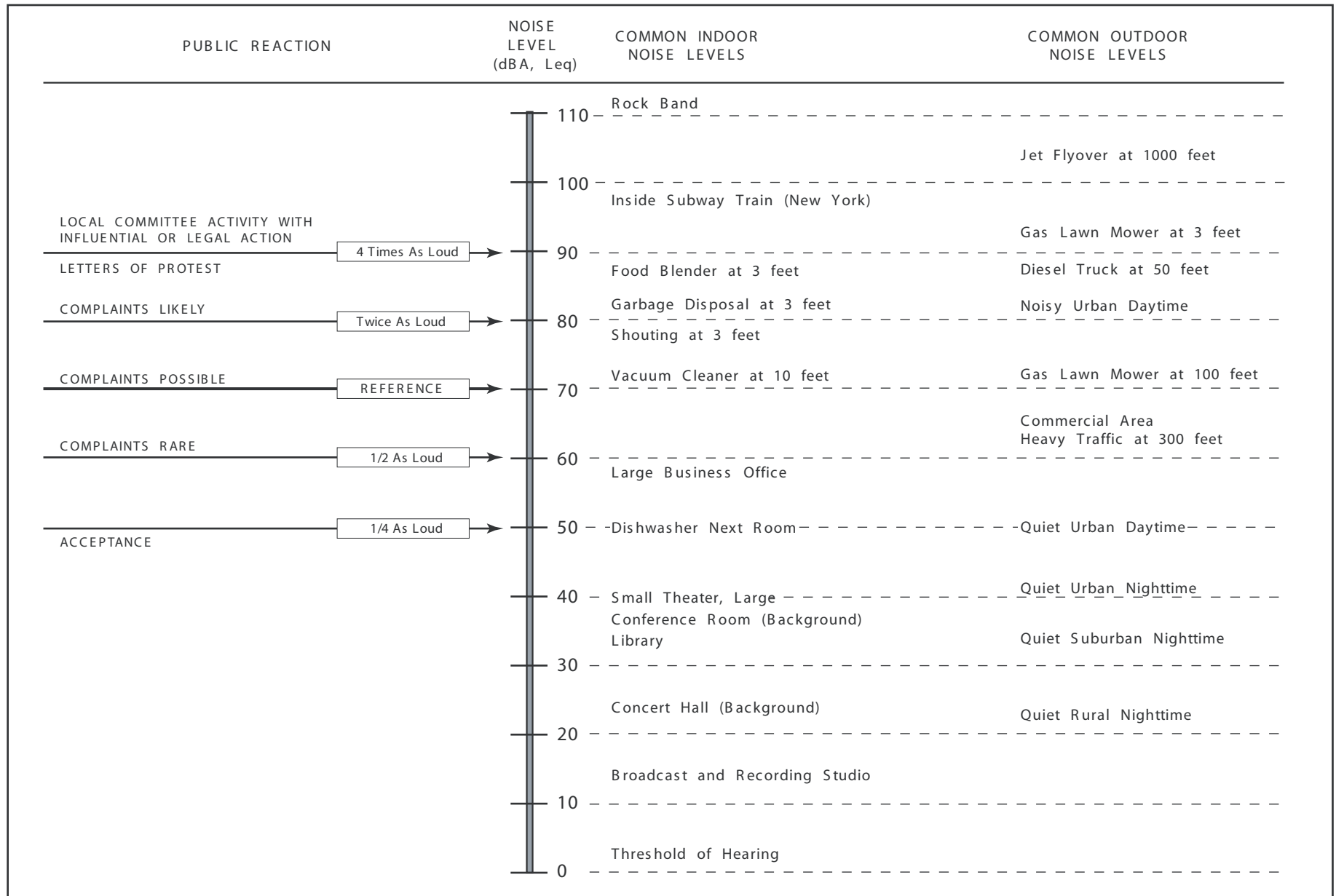
## 18.2.2 Noise Exposure and Community Noise

The noise levels presented on Figure 18-1 are representative of measured noise at a given instant in time; however, they rarely persist consistently over a long period of time. Rather, community noise varies continuously with respect to the contributing sound sources of the community's noise environment. Community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and atmospheric conditions. What makes community noise constantly variable throughout a day, besides the slowly changing background noise, is the addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, and sirens), which are readily identifiable to the individual.

These successive additions of sound to the community noise environment vary the community noise level from instant to instant requiring the measurement of noise exposure over a period of time to legitimately characterize a community's noise environment and evaluate cumulative noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. The most frequently used noise descriptors are:

- L<sub>eq</sub>:** The equivalent sound level is used to describe noise over a specified period of time, typically 1 hour, in terms of a single numerical value. The L<sub>eq</sub> is the constant sound level that would contain the same acoustic energy as the varying sound level during the same time period (i.e., the average noise exposure level for the given time period).
- L<sub>max</sub>:** The instantaneous maximum A-weighted sound level for a specified period of time.
- L<sub>0</sub>:** The noise level that may not be exceeded for any period of time.
- L<sub>50</sub>:** The noise level that is equaled or exceeded 50 percent of the specified time period. The L<sub>50</sub> represents the median sound level.
- L<sub>90</sub>:** The noise level that is equaled or exceeded 90 percent of the specified time period. The L<sub>90</sub> is sometimes used to represent the background sound level.
- DNL:** The 24-hour day and night A-weighted noise exposure level (DNL), which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 PM and 7:00 AM is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises.
- CNEL:** The Community Noise Equivalent Level (CNEL), which is similar to the DNL, adds a 5-dBA "penalty" for the evening hours between 7:00 PM and 10:00 PM, in addition to a 10 dBA penalty between the hours of 10:00 PM and 7:00 AM.

As a general rule, in areas where the noise environment is dominated by traffic, the L<sub>eq</sub> during the peak-hour is generally equivalent to the DNL at that location (Caltrans 1998).



**Figure 18-1**  
Noise Sources and Their Corresponding A-Weighted Noise Levels

### 18.2.3 Effects of Noise on People

The effects of noise on people can be placed into three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, or learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists, and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Therefore, an important way of predicting human reaction to a new noise environment is to compare it to the existing environment to which one has adapted – the so called “ambient noise” level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived.
- Outside of the laboratory, a 3 dBA change is considered a just-perceivable difference.
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected.
- A 10 dBA change is subjectively heard as approximately a doubling in loudness, and can cause adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion; hence the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, but rather logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

### 18.2.4 Noise Attenuation

Stationary point sources of noise, including stationary mobile sources such as idling vehicles, attenuate (lessen) at an approximate rate of between 6 dBA for hard sites and 7.5 dBA for soft sites for each doubling of distance from the reference measurement. Hard sites are those with a reflective surface between the source and the receiver such as parking lots or smooth bodies of water. No excess ground attenuation is assumed for hard sites, and the changes in noise levels with distance (drop-off rate) are simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dBA (per doubling distance) is normally assumed for soft sites. Line sources, such as traffic noise from vehicles, attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement (Caltrans 1998).

### **18.2.5 Fundamentals of Vibration**

As described in the Federal Transit Administration's (FTA's) Transit Noise and Vibration Impact Assessment (FTA 2006), groundborne vibration can be a serious concern for nearby neighbors, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, groundborne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of groundborne vibration are trains, buses on rough roads, and construction activities such as blasting, sheet pile-driving, and operating heavy earth-moving equipment.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (Vdb) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration. Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, students, the elderly, and ill), and vibration-sensitive equipment.

The effects of groundborne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects with the occasional exception of damage arising from blasting and sheet pile-driving activities during construction in close proximity of a building. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 inch per second PPV, and the FTA threshold of human annoyance to groundborne vibration is 80 RMS (FTA 2006).

### **18.2.6 Existing Noise Environment**

Ambient noise levels near the proposed project component sites are influenced primarily by traffic along local feeder streets, Interstate 5 (I-5), State Route 126 (SR-126), The Old Road, and San Fernando Road. Noise levels near these sources vary throughout the day, but can be high depending on traffic volumes. Other noise sources in the vicinity include construction, industrial processes, airplanes, and sirens.

### **18.2.7 Sensitive Receptors**

Some land uses are considered more sensitive to ambient noise levels than others because of the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. Residences, hotels, schools, rest homes, and hospitals are generally considered more sensitive to noise than commercial and industrial land uses.

---

## **18.3 REGULATORY BACKGROUND**

### **18.3.1 Federal Regulations**

#### **18.3.1.1 Code of Federal Regulations**

The Code of Federal Regulations (CFR) establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 CFR, Part 205, Subpart B. The federal truck pass-by noise standard is 80 dBA at 15 meters from the vehicle pathway centerline. These controls are implemented through regulatory controls on truck manufacturers.

#### **18.3.1.2 Federal Transit Administration**

The FTA is an agency of the United States Department of Transportation and provides financial and technical assistance to local public transit systems. The FTA prepared the Transit Noise and Vibration Impact Assessment (FTA 2006), which details the procedures for assessing noise and vibration impacts during construction and operation of proposed federally-funded mass transit projects and discusses ways to reduce excessive noise and vibration caused by such projects. The standards for noise and groundborne vibration from construction equipment and activities provided in the FTA impact assessment are used as part of the baseline for this impact analysis.

### **18.3.2 State Regulations**

The California Code of Regulations contains guidelines for evaluating the compatibility of various land uses as a function of community noise exposure, as shown on Figure 18-2. The State of California also establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the state pass-by standard is with the same as the federal limit of 80 dBA. The state pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80dBA at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by enforcement of the regulations by state and local law enforcement officials against vehicle operators.

### **18.3.3 Local Ordinances and Regulations**

Local noise issues are addressed through implementation of general plan policies, including noise and land use compatibility guidelines, and through enforcement of noise ordinance standards. Noise ordinances regulate such sources as mechanical equipment and amplified sounds as well as prescribe noise limits in residential and commercial zones. For the proposed project, noise regulations and standards of the Los Angeles and Ventura Counties and the Cities of Santa Clarita, Los Angeles, San Fernando, Burbank, and Glendale were considered with respect to the proposed facilities and nearby sensitive receptors.

#### **18.3.3.1 County of Los Angeles Noise Standards**

##### ***General Plan***

The County of Los Angeles General Plan Noise Element was enacted to be a planning tool to develop strategies and action programs that address the multitude of noise sources and issues

throughout Los Angeles County. The Noise Element primarily addresses transportation noise sources such as traffic, railroad, and aircraft noise issues. The guidelines used by Los Angeles County are based on the community noise compatibility guidelines established by the State of California Department of Health Services. Specific regulations that implement these guidelines are set forth in the Los Angeles County Code.

### ***County of Los Angeles Noise Ordinance***

The County of Los Angeles Noise Ordinance, §12.08.380 and §12.08.390 of the Los Angeles County Code, establishes maximum exterior noise level standards for four designated noise zones based on the types of receptor. These noise zones are:

- Noise Sensitive Areas – Noise sensitive zones (e.g., hospitals and health care facilities) are areas designated by the County Health Officer in order to preserve exceptional quiet. Such areas must be clearly marked with conspicuous signs.
- Residential Properties – The category of Residential Properties includes all types of residential developments and properties subject to residential zoning classifications such as schools, but excludes hotels and motels.
- Commercial Properties – The category of Commercial Properties consists of all types of commercial developments including hotels and motels and also includes properties subject to commercial zoning classifications.
- Industrial Properties – The category of Industrial Properties includes all properties developed with manufacturing uses and industrial zoning.

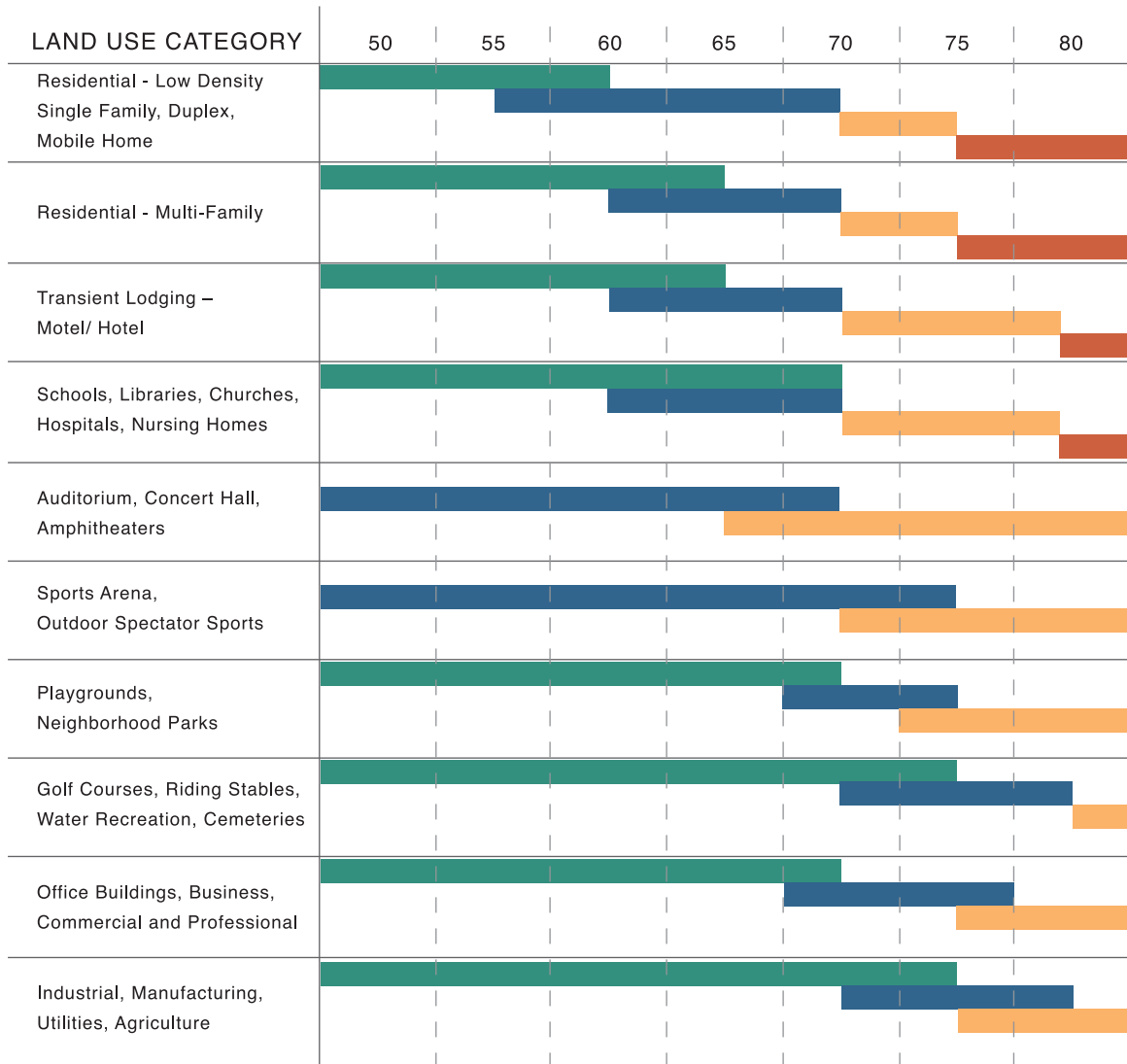
Table 18-1 provides the Los Angeles County noise criteria and standards for daytime (7:00 AM to 10:00 PM) and nighttime (10:00 PM to 7:00 AM) activities. Construction noise standards at Residential and Commercial Properties by allowable days and hours of mobile versus stationary equipment used are provided in Table 18-2. The applicable County of Los Angeles Noise Ordinance standards for operational noise may be adjusted upward to reflect existing ambient noise level conditions in the receptor areas. The existing ambient noise levels constantly change during the day and night, and, at many of the receptor areas, the ambient noise levels exceed the standards of the County of Los Angeles' Noise Ordinance for much of the day.

### **18.3.3.2 County of Ventura Noise Standards**

#### ***General Plan***

The County of Ventura General Plan Noise Element, §2.16 of the General Plan, works to eliminate or avoid adverse noise impacts on existing and future noise-sensitive uses by providing definitions and acceptable noise thresholds. §2.16.2(4) is not applicable to increased traffic noise along any of the roads identified within the 2020 Regional Roadway Network Public Facilities Appendix of the County of Ventura General Plan.

COMMUNITY NOISE EXPOSURE  $L_{dn}$  or CNEL (dBA)



INTERPRETATION

- NORMALLY ACCEPTABLE**  
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
- CONDITIONALLY ACCEPTABLE**  
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.
- NORMALLY UNACCEPTABLE**  
New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
- CLEARLY UNACCEPTABLE**  
New construction or development should generally not be undertaken.



**Table 18-1. Los Angeles County – Operation Noise Standards (dBA)**

Land Use (Receptor Property)	Time Intervals	Exterior Noise Level (dB) for Standard Number				
		L <sub>50</sub>	L <sub>25</sub>	L <sub>8</sub>	L <sub>2</sub>	L <sub>0</sub>
Noise-Sensitive Area	Anytime	45	50	55	60	65
Residential Properties	7:00 AM to 10:00 PM	50	55	60	65	70
	10:00 PM to 7:00 AM	45	50	55	60	65
Commercial Properties	7:00 AM to 10:00 PM	60	65	70	75	80
	10:00 PM to 7:00 AM	55	60	65	70	75
Industrial Properties	Anytime	70	75	80	85	90

L<sub>50</sub> = Noise levels that may not be exceeded for a cumulative period of more than 30 minutes in any hour.

L<sub>25</sub> = Noise levels that may not be exceeded for a cumulative period of more than 15 minutes in any hour.

L<sub>8</sub> = Noise levels that may not be exceeded for a cumulative period of more than 5 minutes in any hour.

L<sub>2</sub> = Noise levels that may not be exceeded for a cumulative period of more than 1 minute in any hour.

L<sub>0</sub> = Noise levels that may not be exceeded for any period of time.

Source: County of Los Angeles Noise Ordinance (County Code §12.08.390).

**Table 18-2. Los Angeles County – Allowable Construction Noise Levels (dBA)**

Allowable Work Dates and Hours	Single Family Residential		Multifamily Residential		Semi-Residential/ Commercial		Business <sup>a</sup>
	Mobile Equip. <sup>b</sup>	Stationary Equip.	Mobile Equip. <sup>b</sup>	Stationary Equip.	Mobile Equip. <sup>b</sup>	Stationary Equip.	Stationary Equip.
Daily 7:00 AM to 8:00 PM <sup>c</sup>	75	60	80	65	85	70	-
Daily 8:00 PM to 7:00 AM <sup>a</sup>	60	50	65	55	70	60	-
Daily <sup>a</sup>	-	-	-	-	-	-	85

<sup>a</sup> Includes all day Sunday and legal holidays.

<sup>b</sup> Restricted to equipment used for less than 10 days.

<sup>c</sup> Exception for Sundays and legal Holidays.

Source: County of Los Angeles Noise Ordinance (County Code §12.08.440).

### ***Ventura County Construction Noise Threshold Criteria and Control Plan***

According to the County of Ventura General Plan Noise Element, construction noise must be evaluated and, if necessary, mitigated in accordance with the County Construction Noise Threshold Criteria (CNTC) and Control Plan. The noise element identifies noise threshold criteria for daytime (7:00 AM to 7:00 PM), evening (7:00 PM to 10:00 PM), and nighttime (10:00 PM to 7:00 AM) construction activities, as shown in Table 18-3. For all three categories, the threshold criteria are the greater of these noise levels at the nearest receptor area or 10 feet from the nearest noise-sensitive building. The plan also includes construction noise monitoring forms and mitigation measures to reduce equipment and operation noise below thresholds if necessary.

**Table 18-3. Construction Activity Noise Threshold Criteria**

Construction Duration Affecting Noise-Sensitive Receptors/Receptor Location	Fixed $L_{eq}(h)$ , dBA	Hourly Equivalent Noise Level ( $L_{eq}$ ), dBA	Time
0 to 3 Days	75	Ambient $L_{eq}(h) + 3$ dB	Daytime <sup>a</sup>
4 to 7 Days	70	Ambient $L_{eq}(h) + 3$ dB	Daytime <sup>a</sup>
1 to 2 Weeks	65	Ambient $L_{eq}(h) + 3$ dB	Daytime <sup>a</sup>
2 to 8 Weeks	60	Ambient $L_{eq}(h) + 3$ dB	Daytime <sup>a</sup>
Longer Than 8 Weeks	55	Ambient $L_{eq}(h) + 3$ dB	Daytime <sup>a</sup>
Residential	50	Ambient $L_{eq}(h) + 3$ dB	Evening <sup>b</sup>
Residential	50	Ambient $L_{eq}(h) + 3$ dB	Nighttime <sup>c</sup>

<sup>a</sup> The instantaneous  $L_{max}$  shall not exceed the CNTC by 20 dBA more than eight times per daytime hour. Local ambient  $L_{eq}$  measurements shall be made on any mid-week day prior to project work.

<sup>b</sup> The instantaneous  $L_{max}$  shall not exceed the CNTC by 20 dBA more than six times per evening hour. Hourly evening local ambient noise measurements shall be made on a typical mid-week evening prior to project work.

<sup>c</sup> The instantaneous  $L_{max}$  shall not exceed the CNTC by 20 dBA more than four times per nighttime hour. Hourly nighttime local ambient noise measurements shall be made on a typical mid-week night prior to project work.

Source: County of Ventura Noise Ordinance 2010.

### 18.3.3.3 City of Los Angeles Municipal Code

#### **Construction Noise**

The City of Los Angeles has established policies and regulations concerning the generation and control of noise that could adversely affect its citizens and noise sensitive land uses. Regarding construction, the Los Angeles Municipal Code provides that no construction or repair work may be performed between the hours of 10:00 PM and 7:00 AM because such activities could generate loud noises and disturb persons occupying sleeping quarters in any adjacent dwelling, hotel, apartment, or other place of residence. No person, other than an individual home owner engaged in the repair or construction of his/her single-family dwelling, may perform any construction or repair work of any kind or perform such work within 500 feet of land so occupied before 8:00 AM or after 6:00 PM on any Saturday or on a federal holiday, or at any time on any Sunday. Under certain conditions, the city may grant a waiver to allow limited construction activities to occur outside of the time limits described previously.

The Los Angeles Municipal Code also specifies the maximum noise level of powered equipment or powered hand tools. Any powered equipment or hand tool that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet is prohibited. However, this noise limitation does not apply where compliance is technically infeasible. Technically infeasible means the above noise limitation cannot be met despite the use of mufflers, shields, sound barriers and/or any other noise reduction device or techniques during the operation of equipment.

Based on the Los Angeles CEQA Threshold Guide, the proposed project would result in significant construction noise impacts if it would result in any of the following:

- Construction activities lasting more than 1 day would exceed existing ambient noise levels by 10 dBA or more at a noise sensitive use.
- Construction activities lasting more than 10 days in a 3-month period would exceed existing ambient noise levels by 5 dBA or more at a noise sensitive use.

- Construction activities would exceed the ambient noise level by 5 dBA at a noise sensitive use between the hours of 9:00 PM and 7:00 AM Monday through Friday, before 8:00 AM or after 6:00 PM on Saturday, or anytime on Sunday.

### **Operation Noise**

A significant operational noise impact would result if the proposed project causes the ambient noise level measured at the property line of the affected uses to increase by 3 dBA CNEL to or within the “normally unacceptable” or “clearly unacceptable” categories, as shown on Figure 18-2, or any 5 dBA or more increase in noise level.

#### **18.3.3.4 City of Santa Clarita Noise Standards**

The City of Santa Clarita has established policies and regulations to restrict the generation and control noise that could adversely affect its citizens and noise sensitive land uses. Regarding construction, the Santa Clarita Noise Standards require that construction or repair work be performed between the hours of 7:00 AM and 7:00 PM, Monday through Friday, and between 8:00 AM and 6:00 PM on Saturday, with no construction on Sunday. Furthermore, no work is permitted on the following public holidays: New Year’s Day, Independence Day, Thanksgiving, Christmas Day, Memorial Day, and Labor Day. The city’s Planning and Building Services Department may issue a permit for work to be done “after hours” provided that construction noise is contained. Table 18-4 describes the noise standard for emanations from a stationary noise source as it affects adjacent properties.

**Table 18-4. City of Santa Clarita Noise Limits**

<b>Region</b>	<b>Sound Level dB</b>	<b>Time</b>
Residential Zone	65	Day
Residential Zone	55	Night
Commercial and Manufacturing	80	Day
Commercial and Manufacturing	70	Night

Source: Santa Clarita Municipal Code 2010.

#### **18.3.3.5 City of San Fernando Noise Ordinance**

The City of San Fernando has a noise ordinance that provides noise guidelines and standards for significant noise generators. The noise standards are presented in Table 18-5.

§34-29 (Exterior Noise Standards) of the San Fernando noise ordinance addresses the duration of potential exterior noise impacts:

It shall be unlawful for any person, at any location within the incorporated area of the city, to create any noise or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured by a sound level meter on any other property, to exceed the permitted ambient noise level more than ten minutes per hour.

**Table 18-5. City of San Fernando Operation Noise Standards**

<b>Noise Zone</b>	<b>Daytime</b>	<b>Nighttime</b>
Residential (Including Mixed-Use)		
Exterior	55	50
Interior	50	40
Commercial	65	60
Industrial	70	70

Source: City of San Fernando Municipal Code (§34[II][1]).

§34-30 (Interior Noise Standards) of the noise ordinance addresses the duration of potential interior noise impacts:

- (a) It shall be unlawful for any person at any location within the incorporated area of the city to create any noise or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured within any other dwelling unit on any residential property, either incorporated or unincorporated, to exceed the following:
- (1) The interior ambient noise level plus 5 dBA for a cumulative period of more than five minutes in any hour;
  - (2) The interior ambient noise level plus 10 dBA for a cumulative period of more than one minute in any hour; or
  - (3) The interior ambient noise level plus 15 dBA for any period of time.
- (b) If the alleged offensive noise consists of impact noise, simple tone noise, speech, music, or any combination thereof, each of the noise levels in subsection (a) of this section shall be reduced by 5 dBA.

### **18.3.3.6 City of Glendale Noise Ordinance**

The City of Glendale Noise Ordinance is outlined in the city's municipal code. Under §8.36.040 of the noise ordinance, the presumed exterior and interior noise standards are discussed. These standards are summarized in Tables 18-6 and 18-7. Under §8.36.050 of the Noise Ordinance, the minimum and maximum ambient noise levels are explained. Specifically, where noise levels are below the presumed noise standards, the actual ambient controls, and any noise in excess by more than 5 dBA above the actual noise level violates the noise ordinance. Where the actual ambient noise level exceeds the presumed noise standard, the actual ambient shall control, and any noise in excess by more than 5 dBA above the actual ambient noise level is considered a violation of the Noise Ordinance. However, in no event may the actual ambient noise level be considered as a baseline if it exceeds the presumed noise standards by more than 5 dBA.

**Table 18-6. City of Glendale Exterior Noise Standards**

Noise Zone	Standard (dBA)	Maximum (dBA)	Time
Cemetery and Residential (Single Family and Duplex)	45	50	Nighttime <sup>a</sup>
	55	60	Daytime <sup>b</sup>
Residential (Multifamily, Hotels, Motels, and Transient Lodgings)	60	65	Anytime
Central Business District and Commercial	65	70	Anytime
Industrial	70	75	Anytime

<sup>a</sup> Nighttime hours are between 10:00 PM to 7:00 AM.

<sup>b</sup> Daytime hours are between 7:00 AM to 10:00 PM.

Source: City of Glendale Municipal Code, Noise Ordinance (§8.36.040[A]).

**Table 18-7. City of Glendale Interior Noise Standards**

Noise Zone	Decibels (dBA)	Time
Residential	45	Nighttime <sup>a</sup>
Residential	55	All other times

<sup>a</sup> Nighttime hours are between 10:00 PM to 7:00 AM.

Source: City of Glendale Municipal Code, Noise Ordinance (§8.36.040[B]).

### 18.3.3.7 City of Burbank Municipal Code

As outlined under the City of Burbank Municipal Code §9-1-1-105.8, construction activities are permitted from 7:00 AM to 7:00 PM Monday to Friday and 8:00 AM to 5:00 PM on Saturday. Municipal Code §9-3-208 provides noise regulations for the use of machinery and equipment. Municipal Code §§9-3-208(a) and (b) provide that all machinery and equipment should not exceed ambient noise levels by more than 5 dBA during designated times as summarized in Table 18-8.

**Table 18-8. City of Burbank Noise Standards**

Noise Zone	Decibels (dBA)	Time
Residential	45	Nighttime <sup>a</sup>
	55	Daytime
Commercial	65	Anytime
All Other Zones	70	Anytime

<sup>a</sup> Nighttime hours are between 10:00 PM to 7:00 AM.

Source: City of Burbank Municipal Code (§§9-3-208[a] and [b]).

## 18.4 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

### 18.4.1 Thresholds of Significance

The criteria used to determine the significance of impacts related to noise are based on Appendix G of the CEQA Guidelines regarding significant environmental effects. The proposed project would result in a significant impact if it would result in any of the following:

- Expose people to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

- Expose people to, or generate, excessive groundborne vibration or groundborne noise levels.
- Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project or a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

## 18.4.2 Methodology

Noise impacts are assessed based on a comparative analysis of the noise levels resulting from the proposed project and the noise levels under existing conditions.

### ***Construction Noise and Vibration***

Analysis of temporary construction noise effects is based on typical construction phases; published or previously measured decibel levels of construction equipment; and attenuation of those noise levels due to distances, presence of any barriers between the construction activity and the sensitive receptors near the sources of construction noise, and time of day and expected duration of construction activity.

Vibrations from construction activities are evaluated for potential impacts at sensitive receptors. Typical activities evaluated for potential building damage due to construction vibration include drilling or excavation in close proximity to structures. The groundborne vibration is also evaluated to determine whether perception of the vibration will cause annoyance. Vibration propagates according to the following expression based on point sources with normal propagation conditions:

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

$PPV_{equip}$  is the peak particle velocity in inches per second of the equipment adjusted for distance,  $PPV_{ref}$  is the reference vibration level in inches per second at 25 feet, and D is the distance from the equipment to the receiver. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration and is often used in monitoring vibration because it is related to the stresses experienced by structures.

In order to determine the potential for annoyance, the RMS vibration level ( $L_v$ ) at any distance (D) is estimated based on the following equation:

$$L_v(D) = L_v(25 \text{ ft}) - 30\log(D/25)$$

### ***Operational Noise***

Significant noise impacts would occur if the noise level at residences, churches, hospitals, or schools from project-related noise sources exceeded the allowable noise thresholds identified for each jurisdiction in Tables 18-1 through 18-8.

#### 18.4.2.1 Noise Standards

**Impact 18-1: The proposed project could expose people to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.**

### **Alternative 1 – MF/RO with Brine Disposal via Pipeline**

Construction of the proposed project would result in temporary increases in noise levels in the proposed project areas on an intermittent basis. Noise levels would fluctuate depending on the construction phase, equipment type and duration of use, distance between the noise source and receptor, and presence or absence of noise attenuation barriers. Construction activities typically require the use of noise-generating equipment. Typical noise levels from various types of equipment that may be used during construction and various types of construction activities are listed in Tables 18-9 and 18-10, respectively. The tables show noise levels at a distance of 50 feet from the construction noise source.

**Table 18-9. Typical Noise Levels From Construction Equipment**

<b>Construction Equipment</b>	<b>Noise Level <sup>a</sup> (dBA, L<sub>eq</sub> at 50 Feet)</b>
Air compressor	81
Auger Drill Rig	85
Backhoe	80
Compactor	82
Concrete mixer (Truck)	85
Concrete Pump	82
Crane	88
Drill Rig Truck (not Percussion)	79
Small Dozer	83
Large Dozer	85
Dump Truck	88
Excavator	89
Generator	81
Jackhammer	88
Paver	89
Pneumatic Tool	85
Water Truck	88
Sweeper	82

<sup>a</sup> Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.

Source: Federal Transit Administration, Office of Planning and Environment 2006.

**Table 18-10. Typical Noise Levels From Construction Activities**

<b>Construction Phase</b>	<b>Noise Level <sup>a</sup> (dBA, L<sub>eq</sub> at 50 Feet)</b>
Ground clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

<sup>a</sup> Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.

Sources: U.S. Environmental Protection Agency 1971; Cunniff 1977.

### **MF/RO and UV Disinfection Facilities**

The microfiltration/reverse osmosis (MF/RO) facilities at the Valencia Water Reclamation Plant (VWRP) and the potential ultraviolet (UV) disinfection facilities at the VWRP and/or Saugus Water Reclamation Plant (SWRP) are described in Section 6.7.1. There are no sensitive receptors located within 1.5 miles of the VWRP and SWRP. The nearest land uses in the vicinity of the

VWRP include commercial buildings adjacent to The Old Road, which are approximately 250 feet east of the VWRP. The nearest land uses in the vicinity of the SWRP include commercial buildings adjacent to Bouquet Canyon Road, which are approximately 230 feet northwest of the SWRP. In addition, an active railroad track serving industrial and Metrolink trains separate the commercial buildings from the SWRP facilities. Noise from the train tracks occur intermittently and on a scheduled timescale. The greatest noise levels produced would be associated with an excavator during excavation and finishing activities, which would result in 89 dBA at a distance of 50 feet (Tables 18-9 and 18-10). Accounting for attenuation due to distance, the commercial areas would experience noise levels of up to 75 dBA at the VWRP and 76 dBA at the SWRP. Construction-generated noise at the VWRP and SWRP would be below the Los Angeles County construction noise ordinance level of 85 dBA for businesses and below the City of Santa Clarita construction noise ordinance level of 80 dBA. Impact would be less than significant.

Operation of the MF/RO facilities at the VWRP and the UV disinfection facilities at the VWRP and SWRP would result in similar noise levels currently generated at the VWRP and SWRP and would not result in noise levels above allowable levels stated in the noise ordinances. Impact would be less than significant.

### **RO Product Water Conveyance System to SWRP**

The RO product water conveyance system facilities are described in Section 6.7.1. The RO product water pump station would be constructed within the VWRP and would not expose people to noise levels in excess of standards from the Los Angeles County Code. Impact would be less than significant.

Construction of the RO product water pipeline would have a short-term noise impact associated with trenching (excavation) and installation of the pipeline within public rights-of-ways (ROW). The nearest sensitive receptors to the RO product water pipeline construction activities would be residential homes in the Valencia Golf and Country Club located approximately 75 feet from the pipeline alignment along Magic Mountain Parkway. The greatest noise levels produced would be associated with an excavator during excavation activities that would result in 89 dBA at a distance of 50 feet (Tables 18-9 and 18-10). Accounting for attenuation due to distance, these residences would experience noise levels of up to 85.5 dBA during excavation, which would exceed the City of Santa Clarita construction noise ordinance level of 80 dBA. The pipeline would be installed at a rate of approximately 100 feet of pipe per day. Although temporary, any sensitive receptor exposure to pipeline construction noise would result in a significant impact. Implementation of Mitigation Measure NOISE-1 would reduce the impact to a less than significant level.

The RO product water conveyance system would include operation of a pump station within the VWRP site that would generate noise. However, the pump station would be within an existing industrial area, and there are no sensitive receptors surrounding the VWRP. Therefore, the addition of a pump station would not substantially increase the ambient noise levels above established thresholds. The operational noise levels with the pump station added would not be substantially different from the current conditions. No noise levels would be associated with operation of the RO product water pipeline as it would be located underground. Impact would be less than significant.



### **Brine Disposal System (Pipeline to JOS)**

The brine disposal system facilities are described in Section 6.7.1. Construction of the brine disposal system would have a short-term noise impact associated with trenching (excavation) and installation of the pipeline within public ROW. The nearest sensitive receptors, including residential and commercial uses, would be located as close as 40 feet along the pipeline alignment. The greatest noise levels produced would be associated with an excavator during excavation activities, which would result in 89 dBA at a distance of 50 feet (Tables 18-9 and 18-10). Accounting for attenuation due to distance, these sensitive receptors would experience noise levels of up to 90 dBA during excavation, which would exceed the construction noise ordinance levels for Los Angeles County and for the Cities of Los Angeles, Santa Clarita, San Fernando, Glendale, and Burbank. The pipeline would be installed at a rate of approximately 100 feet of pipe per day. Although temporary, any sensitive receptor's exposure to pipeline construction noise would result in a significant impact. Implementation of Mitigation Measure NOISE-1 would reduce the impact to a less than significant level.

Construction of the brine disposal pipeline may require nighttime work at major intersections to avoid daytime traffic impacts. However, to the extent practicable, nighttime construction within major intersections would occur in business and commercial areas rather than residential. Nighttime construction at each major intersection is expected to require 2 to 3 nights. If nighttime construction is required and a variance from the local noise ordinance is needed, the SCVSD would be required to secure the variance prior to construction and comply with its measures. Compliance with a variance in combination with short construction durations within business and commercial areas would result in a less than significant impact. Impact would be less than significant.

A brine disposal pipeline pump station would be constructed within the VWRP and would not expose people to noise levels in excess of standards from the Los Angeles County Code. A second offsite brine disposal pipeline pump station would be constructed within an easement on private property adjacent to the pipeline alignment. The exact location would be determined during final design of the brine disposal pipeline. Because the location is unknown, the offsite brine disposal pipeline pump station has the potential to be constructed adjacent to a sensitive receptor. However, the construction of the pump station would comply with the noise ordinance exemption hours of the applicable jurisdiction. Impact would be less than significant.

No noise levels would be associated with operation of the brine disposal pipeline as it would be located underground. The brine disposal pipeline pump station pumps would be located within concrete or block wall structures fitted with acoustic louvers, designed to ensure that noise emitted from the structure would comply with the local noise ordinance. Operation of the brine disposal system would not increase noise levels above established thresholds. Impact would be less than significant.

### **Impact Summary**

The construction of the RO product water pipeline and the brine disposal pipeline for Alternative 1 would expose people to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Implementation of Mitigation Measure NOISE-1 would mitigate the impact to a less than significant level. The operational impact would be less than significant.

**Mitigation Measures:** Implement NOISE-1.

**Mitigation Measure NOISE-1: Noise Reduction Measures.** During construction, the contractor shall be required to implement the following measures as necessary to ensure compliance with applicable construction noise ordinances:

- All construction equipment, fixed or mobile, shall be outfitted with properly operating and maintained exhaust and intake mufflers, consistent with manufacturers' standards.
- Impact tools (e.g., jack hammers, etc.) used for construction shall be hydraulically or electrically powered when feasible to avoid noise associated with compressed air exhaust from pneumatically powered tools. When use of pneumatic tools is necessary, an exhaust muffler on the compressed air exhaust shall be used. External jackets on the tools themselves shall be used when feasible. Quieter procedures, such as use of drills rather than impact tools, shall be used whenever feasible.
- Stationary noise sources shall be located as far from adjacent receptors as possible.

**Significance Level after Mitigation:** Less Than Significant Impact.

### ***Alternative 2 – MF/RO with Brine Disposal via DWI***

#### **MF/RO and UV Disinfection Facilities**

The MF/RO facilities at the VWRP and the potential UV disinfection facilities at the VWRP and/or SWRP would be the same as described for Alternative 1. Impact would be less than significant.

#### **RO Product Water Conveyance System to SWRP**

The RO product water conveyance system facilities would be the same as described for Alternative 1. Construction of the RO product water pipeline would result in a significant impact. Implementation of Mitigation Measure NOISE-1 would reduce the impact to a less than significant level. The operational impact would be less than significant.

#### **Brine Disposal System (DWI)**

The brine disposal system facilities are described in Section 6.7.1. The deep well injection (DWI) site would be located in unincorporated Los Angeles County. Well drilling at the DWI site would occur for approximately 16 months, 24 hours per day. In order to drill the well, the drill rig must run 24 hours per day; otherwise, the walls of the borehole could collapse. However, the drill rig would not be running at full capacity during the 24 hours. The DWI site would be located on an undeveloped open space site with the nearest sensitive receptors, the Valencia Golf and Country Club and residential uses, located approximately 850 feet and 1,250 feet north, respectively. Residential uses would also be located west of the DWI site though the topography of the land would minimize noise impacts during construction. The greatest noise levels produced would be associated with an auger drill rig during drilling operations and operation of the diesel generators. The drilling operations would generate approximately 85 dBA at a distance of 50 feet (Table 18-9). Accounting for attenuation due to distance, noise generated at the DWI site during drilling activities would result in noise levels of approximately 60 dBA at the TPC Valencia Golf and Country Club and approximately 57 dBA at the residential development to the north. Construction-generated noise would exceed Los Angeles County's stationary noise level threshold of 60 dBA for daytime noise and 50 dBA for nighttime construction in a residential or

commercial area. Prior to construction activities associated with the DWI site, the contractor would be required to secure a variance or waiver for 24-hour construction from Los Angeles County. Construction of the DWI site would have a significant temporary construction noise impact to the surrounding vicinity. However in combination with the variance, implementation of Mitigation Measures NOISE-1 and NOISE-2 would reduce the impact to a less than significant level.

The DWI wells would be deviated which would result in well casings located under the property of neighboring land owners at depths over 500 feet below ground surface. Noise impacts to the nearest sensitive receptors would be attenuated by depth. No construction or operational impact would occur.

The DWI brine disposal pipeline from the VWRP to the DWI site would be constructed underground within existing public ROW to the maximum extent practicable. Construction of the DWI brine disposal pipeline would have a short-term noise impact associated with the trenching (excavation) and installation of the pipeline. The pipeline construction would occur within approximately 40 feet of a sensitive receptor. The greatest noise levels produced would be associated with an excavator during excavation activities, which would result in 89 dBA at a distance of 50 feet (Tables 18-9 and 18-10). Accounting for attenuation due to distance, these sensitive receptors would experience noise levels of up to 90 dBA during excavation, which would exceed the construction noise ordinance levels for Los Angeles County. The pipeline would be installed at a rate of approximately 100 feet of pipe per day. Although temporary, any sensitive receptor's exposure to pipeline construction noise would result in a significant impact. Implementation of Mitigation Measure NOISE-1 would reduce the impact to a less than significant level.

Operation of the DWI facilities and associated pipeline would not generate noise levels above ambient levels and would not create a significant long term noise impact to the surrounding area. The DWI brine pipeline would not include any component that would create noise other than the pump station located within the VWRP. The DWI facilities would include the five injection wells. The new wells would generate noise from the electric pumps; however, the facilities would be located adjacent to an existing roadway that contributes vehicle noise to the area. In addition, the injection pumps would be housed within a closed environment that would reduce noise levels coming from pump operation. Furthermore, impacts to the nearest sensitive receptors would be attenuated by the topography of the land because the DWI site is below grade in a low spot surrounded by rolling hills and mature vegetation. Impact would be less than significant.

### **Impact Summary**

The construction of the RO product water pipeline, DWI brine pipeline, and the DWI site for Alternative 2 would expose people to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Implementation of Mitigation Measure NOISE-1 would mitigate the impact of the RO product water pipeline and DWI brine pipeline to a less than significant level. Implementation of Mitigation Measures NOISE-1 and NOISE-2 would mitigate the impact of the DWI site to a less than significant level. The operational impact would be less than significant.

**Mitigation Measures:** Implement NOISE-1 and NOISE-2.

**Mitigation Measure NOISE-2: Noise Control Barrier.** During construction, the contractor shall be required to install a noise control barrier between the construction site

and nearby sensitive receptors for the duration of DWI drilling operations and East and West Piru well field and pump station construction. The noise control barrier shall be designed to ensure compliance with applicable construction noise ordinances.

**Significance Level after Mitigation:** Less Than Significant Impact.

### ***Alternative 3 – MF/RO with Brine Disposal via Trucking***

#### **MF/RO and UV Disinfection Facilities**

The MF/RO facilities at the VWRP and the UV disinfection facilities at the VWRP and SWRP would be the same as described for Alternative 1. The construction and operational noise impact would be less than significant.

#### **RO Product Water Conveyance System to SWRP**

The RO product water conveyance system facilities would be the same as described for Alternative 1. Construction of the RO product water pipeline would result in a significant impact. Implementation of Mitigation Measure NOISE-1 would reduce the impact to a less than significant level. The operational impact would be less than significant.

#### **Brine Disposal System (Trucking)**

The brine disposal system facilities are described in Section 6.7.1. The truck loading terminal, which would be located just north of the VWRP, would need to be graded and paved. Construction of the truck loading terminal would result in temporary increases in noise levels on an intermittent basis. Noise levels would fluctuate depending on the construction phase, equipment type and duration of use, distance between the noise source and receptor, and presence or absence of noise attenuation barriers. There are no sensitive receptors located within 1.5 miles of proposed truck loading terminal. The nearest land uses in the vicinity of the proposed truck loading terminal include commercial buildings adjacent to The Old Road, which are approximately 250 feet east of the VWRP. The greatest noise levels produced would be associated with a paver during finishing activities, which would result in 89 dBA at a distance of 50 feet (Tables 18-9 and 18-10). Accounting for attenuation due to distance, the commercial areas would experience noise levels of up to 75 dBA from the truck loading terminal construction, which would be below the Los Angeles County construction noise ordinance level of 85 dBA for businesses. The exact location of the truck unloading terminal has not been determined at this time; however, the site is expected to be located within an existing industrial park along Medford Street located within the City Terrace area. The closest sensitive receptors would be approximately 850 feet along Fowler Street. The greatest noise levels produced would be associated with utilization of a concrete mixer (truck) during finishing activities, which would result in 85 dBA at a distance of 50 feet (Table 18-9). Accounting for attenuation due to distance, the residential areas would experience noise levels of up to 60 dBA from the truck unloading terminal construction, which would be below the Los Angeles County construction noise ordinance level of 75 dBA for single family residential areas. Impact would be less than significant.

The operation of the brine disposal system for Alternative 3 would require approximately 90 truck round trips per day for the disposal of the brine produced at the VWRP. The truck haul route would start at the VWRP and would access the I-5 freeway south bound and then east bound on I-10 to the City Terrace area. From this point there are three truck route options:

(1) the Herbert Avenue route, (2) the Eastern Avenue route, and (3) the Mission Road route. The Herbert Avenue route would use the City Terrace Drive off ramp and would continue along Herbert Avenue to Medford Street. The truck unloading terminal would likely be located along Medford Street. The Eastern Avenue route would use the Ramona Avenue off ramp to Eastern Avenue and would continue to Medford Street. The Mission Road route would use the Mission Road off ramp off of I-5, continue along Mission Road to Valley Boulevard to Vineburn Avenue, and then continue on to Worth Street to Indiana Street and to Medford Street. The most direct route would be the Herbert Avenue route, which is approximately 0.5 mile long once the trucks exit the I-10. However, this route is lined with residential homes located on each side of Herbert Avenue for approximately 0.25 mile. The Eastern Avenue route is approximately 1 mile long once the trucks exit the I-10 and would pass a few residential homes at the intersection of Eastern Avenue and Medford Avenue. The Mission Road route is the longest at approximately 2 miles long once the trucks leave the I-5; however, this route would not pass any residential homes. After unloading, the trucks would follow the same route back to the City of Santa Clarita and exit I-5 at Magic Mountain Parkway turn onto The Old Road and ultimately return to the VWRP. There would be no sensitive receptors along the truck route in the City of Santa Clarita area. Currently, The Old Road is used by heavy trucks as a cut-through to Henry May Drive. Furthermore, during the nighttime hours, the businesses along the truck route would be closed and would not be impacted by truck noise. The most direct haul route to the truck unloading terminal located in the City Terrace area would be along the Herbert Avenue route, which is lined with residential homes on both sides for approximately 0.25 mile. As a result, the following analysis will evaluate this route as the worst case scenario as it relates to operational noise impacts to sensitive receptors.

The addition of approximately four truck trips per hour during daytime and nighttime hours on the Herbert Avenue route would potentially impact the residents along Herbert Avenue. The residents are located on both sides of the street and are within 50 feet from the centerline of the roadway. The noise produced by a haul truck traveling at 35 miles per hour (mph) is 80 dBA at a distance of 50 feet. As noted in Table 18-1, the allowable  $L_{\max}$  ( $L_0$ ) in Los Angeles County between the hours of 10:00 PM and 7:00 AM is 65 dBA. As a result, the hauling of brine along residential streets would result in a significant nighttime noise impact. Implementation of Mitigation Measure NOISE-3 would reduce the impact to a less than significant level.

### **Impact Summary**

The construction of the RO product water pipeline for Alternative 3 would expose people to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Implementation of Mitigation Measure NOISE-1 would mitigate the impact to a less than significant level.

The operation of the trucking route for Alternative 3 would expose people to, or generate, noise levels in excess of, standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Implementation of Mitigation Measure NOISE-3 would mitigate the impact to a less than significant level.

**Mitigation Measures:** Implement NOISE-1 and NOISE-3.

**Mitigation Measure NOISE-3: Restricted Use of Herbert and Eastern Avenues Truck Routes.** Trucks hauling brine for disposal at the truck unloading terminal shall not utilize the Herbert Avenue and the Eastern Avenue routes between the hours of 10 PM and 7 AM. If nighttime deliveries are necessary, then the Mission Road route shall be utilized.

**Significance Level after Mitigation:** Less Than Significant Impact.

### ***Alternative 4 – Phased AWRM***

#### **Phase I**

##### **UV Disinfection Facilities**

The UV disinfection facilities at the VWRP and SWRP would be the same as described for Alternative 1. Impact would be less than significant.

##### **Salt Management Facilities**

The salt management facilities are described in Section 6.7.1. The East Piru and West Piru well fields and associated pump stations would be located within an active agricultural area in the Piru Subbasin of Ventura County and would generally be surrounded by agricultural uses and open space. The associated pipelines (East Piru well field extraction pipeline, West Piru well field extraction pipeline, and blended groundwater pipeline) would be constructed underground within existing public ROW to the maximum extent practicable. Construction of the pipelines would have a short-term noise impact associated with the trenching (excavation) and installation of the pipeline. The nearest sensitive receptors would be residential homes located on agricultural fields along SR-126 approximately 66 feet from the pipeline alignment. The greatest noise levels produced would be associated with an excavator during excavation activities, which would result in 89 dBA at a distance of 50 feet (Tables 18-9 and 18-10). Accounting for attenuation due to distance, these residences would experience noise levels of up to 86 dBA during excavation, which would exceed the construction noise ordinance levels for Ventura County. The pipelines would be installed at a rate of approximately 100 feet of pipe per day. Although temporary, any sensitive receptor's exposure to pipeline construction noise would be result in a significant impact. Implementation of Mitigation Measure NOISE-1 would reduce the impact to a less than significant level.

The nearest sensitive receptors to the proposed well fields and pump stations would be approximately 100 feet from the area. The greatest noise levels produced during construction of the well fields and pump stations would be associated with an auger drill rig during drilling operations. The drilling operations would generate approximately 85 dBA at a distance of 50 feet (Table 18-9). Accounting for attenuation due to distance, the sensitive receptors would experience noise levels of up to 79 dBA during construction activities at the well fields. The construction of the well fields would potentially require a 24-hour drilling operation for 7 days per week. The noise levels generated would exceed the Ventura County Construction Noise Threshold Criteria and Control Plan allowable noise levels of 55 dBA during the daytime and 50 dBA during the evening. Prior to construction activities associated with the well fields, the contractor would be required to obtain a variance or waiver for 24-hour construction from Ventura County. Construction at the well fields would have a significant temporary construction noise impact to the surrounding vicinity. However, in combination with the variance, implementation of Mitigation Measures NOISE-1 and NOISE-2 would reduce the impact to a less than significant level.

Operation of the East and West Piru well field extraction wells and associated pipelines would not generate noise levels above ambient levels and would not create a significant long term noise impact to the surrounding area. The wells would generate noise from the electric pumps; however, the pumps would be housed within a closed environment that would reduce noise levels

coming from pump operation. No noise levels would be associated with operation of the blended groundwater pipeline as it would be located underground. The East and West Piru well field pump station pumps would be located within concrete or block wall structures fitted with acoustic louvers, designed to ensure that noise emitted from the structure would comply with the local noise ordinance. Operation of the salt management facilities would not increase noise levels above established thresholds. Impact would be less than significant.

### **Supplemental Water System**

The supplemental water system facilities are described in Section 6.7.1. The nearest sensitive receptors to the supplemental water pipeline would be commercial uses located approximately 65 feet from the pipeline alignment along The Old Road. The greatest noise levels produced would be associated with an excavator during excavation activities that would result in 89 dBA at a distance of 50 feet (Tables 18-9 and 18-10). Accounting for attenuation due to distance, these commercial uses would experience noise levels of up to 87 dBA during excavation, which would exceed the allowable noise thresholds of 70 dBA for daytime construction in Los Angeles County. The pipeline would be installed at a rate of approximately 100 feet of pipe per day. Although temporary, any sensitive receptor's exposure to pipeline construction noise would be a significant impact. Implementation of Mitigation Measure NOISE-1 would reduce the impact to a less than significant level.

No noise levels would be associated with operation of the supplemental water pipeline as it would be located underground. Impact would be less than significant.

### **Impact Summary – Phase I**

The construction of the East and West Piru well field extraction pipelines, the blended groundwater pipeline, and the supplemental water pipeline for Phase I of Alternative 4 would expose people to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Implementation of Mitigation Measure NOISE-1 would mitigate the impact to a less than significant level.

The construction of the East and West Piru well fields and associated pump stations for Phase I of Alternative 4 would expose people to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Implementation of Mitigation Measure NOISE-1 and NOISE-2 would mitigate the impact to a less than significant level.

The operation of Phase I of Alternative 4 would not expose people to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. The operational impact would be less than significant.

**Mitigation Measures:** Implement NOISE-1 and NOISE-2.

**Significance Level after Mitigation:** Less Than Significant Impact.

## **Phase II**

### **MF/RO Facilities**

The MF/RO facilities at the VWRP would be similar to those described for Alternative 1, but under this alternative, would be smaller in size. Impact would be less than significant.

### **RO Product Water Conveyance System to Ventura County**

The RO product water conveyance system facilities are described in Section 6.7.1. The Ventura County RO product water pump station would be constructed within the VWRP and would not expose people to noise levels in excess of standards from the Los Angeles County Code. Impact would be less than significant.

The Ventura County RO product water pipeline would have a short-term noise impact associated with trenching (excavation) and installation of the pipeline within public ROW. The nearest sensitive receptors to the Ventura County RO product water pipeline would be residential homes located within agricultural lands, approximately 125 feet from the pipeline alignment along SR-126/Old Telegraph Road. The greatest noise levels produced would be associated with an excavator during excavation activities that would result in 89 dBA at a distance of 50 feet (Tables 18-9 and 18-10). Accounting for attenuation due to distance, a sensitive receptor would experience noise levels of up to 81 dBA during excavation, which would exceed the Ventura County allowable construction noise threshold of 50 dBA. The pipeline would be installed at a rate of approximately 100 feet of pipe per day. Although temporary, any sensitive receptor's exposure to the pipeline construction noise would result in a significant impact. No nighttime construction is proposed for the Ventura County RO product water pipeline. Implementation of Mitigation Measure NOISE-1 would reduce the impact to a less than significant level.

The RO product water conveyance system would include operation of a pump station within the VWRP site that would generate noise. However, the pump station would be within an existing industrial area, and there are no sensitive receptors surrounding the VWRP. Therefore, the addition of a pump station would not substantially increase the ambient noise levels above established thresholds. The operational noise levels with the pump station added would not be substantially different from the current conditions. No noise levels would be associated with operation of the Ventura County RO product water pipeline as it would be located underground. Impact would be less than significant.

### **Brine Disposal System**

The brine disposal system facilities are described in Section 6.7.1. The brine disposal system would rely on a pipeline, DWI, or trucking – each of which was previously analyzed for Alternatives 1, 2, and 3, respectively, but there would be a lower peak brine flow to manage so the diameter of the pipeline, number of wells, and peak number of truck trips would be smaller.

The brine disposal facilities would be constructed in a manner similar to the procedures described in the previous sections for Alternatives 1, 2, and 3. Construction of the brine disposal facilities would have impacts similar to, but less than, those for Alternatives 1, 2, and 3 because the brine generated would be less for this alternative. As previously discussed, construction of the brine disposal pipeline or DWI brine pipeline would result in a significant impact. Implementation of Mitigation Measure NOISE-1 would reduce the impact to a less than significant level.



Construction at the DWI site would result in a significant impact. Implementation of Mitigation Measures NOISE-1 and NOISE-2 would reduce the impact to a less than significant level.

Operation of the brine disposal system by pipeline or DWI would not increase noise levels above established thresholds. Impact would be less than significant.

As previously discussed in Alternative 3, brine disposal by trucking would generate significant nighttime noise impacts from truck hauling along residential streets adjacent to the proposed truck unloading terminal, in particular Herbert Avenue. Implementation of Mitigation Measure NOISE-3 would reduce the impact to a less than significant level.

### **Impact Summary – Phases I and II**

The construction of the East and West Piru well field extraction pipelines, the blended groundwater pipeline, and the supplemental water pipeline for Phase I of Alternative 4 would expose people to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Implementation of Mitigation Measure NOISE-1 would mitigate the impact to a less than significant level.

The construction of the East and West Piru well fields and associated pump stations for Phase I of Alternative 4 would expose people to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Implementation of Mitigation Measure NOISE-1 and NOISE-2 would mitigate the impact to a less than significant level.

The operation of Phase I of Alternative 4 would not expose people to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. The operational impact would be less than significant.

The construction of the Ventura County RO product water pipeline, brine disposal pipeline, and DWI brine pipeline for Phase II of Alternative 4 would expose people to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Implementation of Mitigation Measure NOISE-1 would mitigate the impact to a less than significant level.

The construction of the DWI site for Phase II of Alternative 4 would expose people to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Implementation of Mitigation Measure NOISE-1 and NOISE-2 would mitigate the impact to a less than significant level.

The operation of the trucking route for Phase II of Alternative 4 would expose people to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Implementation of Mitigation Measure NOISE-3 would mitigate the impact to a less than significant level.

**Mitigation Measures:** Implement NOISE-1, NOISE-2, and NOISE-3.

**Significance Level after Mitigation:** Less Than Significant Impact.

### 18.4.2.2 Groundborne Vibration

**Impact 18-2: The proposed project could expose people to, or generate, excessive groundborne vibration or groundborne noise levels.**

#### ***Alternative 1 – MF/RO with Brine Disposal via Pipeline***

As described in Section 18.2.5, the FTA’s threshold of architectural damage for conventional sensitive structures is 0.2 inch per second PPV, and the FTA threshold of human annoyance to groundborne vibration is 80 RMS. Construction of the proposed project would result in temporary increases in vibration levels in the proposed project areas on an intermittent basis. Vibration levels would fluctuate depending on the construction phase, equipment type and duration of use, and distance between the vibration source and receptor. Typical vibration levels from various types of equipment that may be used during construction are listed in Table 18-11. The table shows vibration levels at a distance of 25 feet from the construction vibration source.

**Table 18-11. Vibration Velocities for Construction Equipment**

Construction Equipment	PPV at 25 feet (inches/second) <sup>a</sup>	RMS at 25 feet (Vdb) <sup>b</sup>
Loaded Supply Trucks	0.076	86
Caisson Drilling	0.089	87
Small Bulldozer	0.003	58
Jackhammer	0.035	79

PPV = peak particle velocity

RMS = root mean square

<sup>a</sup> Buildings can be exposed to groundborne vibration levels of 0.2 PPV without experiencing structural damage.

<sup>b</sup> The human annoyance response level is 80 RMS.

Source: Federal Transit Administration 2006.

### **MF/RO and UV Disinfection Facilities**

The MF/RO facilities at the VWRP and the potential UV disinfection facilities at the VWRP and/or SWRP are described in Section 6.7.1. The use of equipment during construction would generate vibration levels of up to 0.003 PPV or 58 RMS (small bulldozer) at a distance of 25 feet (Table 18-11). The nearest receptors to the construction activities at the VWRP are approximately 250 feet to the east and would be exposed to vibration levels of approximately 0.00009 PPV and 28 RMS. The nearest receptors to the SWRP are approximately 230 feet to the northwest and would be exposed to vibration levels of approximately 0.0001 PPV and 29 RMS. These levels would not exceed FTA standards. In addition, the operation of the MF/RO and UV disinfection facilities would be within existing industrial facilities and would not produce any noticeable groundborne vibrations. Impact would be less than significant.

### **RO Product Water Conveyance System to SWRP**

The RO product water conveyance system facilities to the SWRP are described in Section 6.7.1. The RO product water pump station would be constructed within the VWRP and would use construction equipment similar to the MF/RO and UV facilities. Construction of the RO product water pipeline to the SWRP would include trenching in public ROW to the maximum extent practicable for the installation of the pipeline. The RO product water pipeline would use equipment during construction that would generate vibration levels of up to 0.076 PPV or 86 RMS (e.g. loaded supply truck) at a distance of 25 feet (Table 18-11). The nearest sensitive receptors to the RO product water pipeline construction activities would be residential homes in

the Valencia Golf and Country Club located approximately 75 feet from the pipeline alignment along Magic Mountain Parkway that would be exposed to vibration levels of approximately 0.015 PPV and 72 RMS. These levels would not exceed FTA standards. Additionally, the pipeline would be installed at an average rate of 100 feet per day, which would prevent prolonged construction impacts at any one location. Impact would be less than significant.

The RO product water pump station would be located within the VWRP on a concrete pad that would absorb the vibrations produced during operation. The pump station would be located within an industrial facility and would not produce excessive vibrations that would have the potential to impact persons or structures. No vibrations would be associated with the operation of the RO product pipeline. Impact would be less than significant.

### **Brine Disposal System (Pipeline to JOS)**

The brine disposal system facilities are described in Section 6.7.1. Construction would primarily consist of a brine disposal pump station at VWRP, a brine disposal pipeline within public ROW, and an offsite brine disposal pump station along the alignment. As previously discussed, the equipment used for pipeline trenching and pump station construction would not cause excessive groundborne vibration. However, directional drilling could be required for isolated stretches of pipeline construction at busy intersections. Equipment used for directional drilling would generate vibration levels of up to 0.089 PPV or 87 RMS at a distance of 25 feet (Table 18-11). Construction of the brine disposal pipeline may take place as close as 50 feet from sensitive receptors. At this distance the nearest receptor would be exposed to vibration levels of approximately 0.031 PPV and 78 RMS. These levels would not exceed FTA standards. Impact would be less than significant.

The offsite brine disposal pump station would be located along the pipeline alignment within a concrete or block wall structure. Both the VWRP and offsite brine disposal pumps would be mounted to concrete pads that would absorb the vibrations produced during operation. No vibrations would be associated with the operation of the brine disposal pipeline. Impact would be less than significant.

### **Impact Summary**

The construction and operation of Alternative 1 would not expose people to, or generate, excessive groundborne vibration or groundborne noise levels. The construction and operational impact would be less than significant.

**Mitigation Measures:** None Required.

**Significance Level after Mitigation:** Less Than Significant Impact.

## ***Alternative 2 – MF/RO with Brine Disposal via DWI***

### **MF/RO and UV Disinfection Facilities**

The MF/RO facilities at the VWRP and the potential UV disinfection facilities at the VWRP and/or SWRP would be the same as described for Alternative 1. Impact would be less than significant.

**RO Product Water Conveyance System to SWRP**

The RO product water conveyance system facilities to the SWRP would be the same as described for Alternative 1. Impact would be less than significant.

**Brine Disposal System (DWI)**

The brine disposal system facilities are described in Section 6.7.1. Well drilling at the DWI site would occur for approximately 16 months, 24 hours per day. In order to drill the well, the drill rig must run 24 hours per day; otherwise, the walls of the borehole could collapse. The DWI site would be located on undeveloped open space with the nearest sensitive receptors, the TPC Valencia Golf and Country Club and residential uses, located approximately 850 feet and 1,250 feet north, respectively. As shown in Table 18-11, the use of heavy equipment during construction generates vibration levels of up to 0.089 PPV or 87 RMS (caisson drill) at a distance of 25 feet. The golf course would be exposed to vibration levels of approximately 0.0004 PPV and 41 RMS. These levels would not exceed FTA threshold standards. Impact would be less than significant.

The DWI wells would be deviated which would result in well casings located under the property of neighboring land owners at depths over 500 feet below ground surface. Vibration impacts to the nearest sensitive receptors would be attenuated by depth. No construction or operational impact would occur.

Similarly to Alternative 1, construction would be temporary and the type of equipment used for DWI brine pipeline trenching and pump station construction would not cause excessive groundborne vibration. Impact would be less than significant.

Operation of the DWI facilities would include the use of five injection pumps operating at 225 horsepower (HP) each. The injection pumps would be located on concrete pads that would absorb the vibrations produced during operation. The operation of the electric pumps would not produce vibration levels that would exceed FTA threshold standards. No vibrations would be associated with the operation of the DWI brine pipeline. Impact would be less than significant.

**Impact Summary**

The construction and operation of Alternative 2 would not expose people to, or generate, excessive groundborne vibration or groundborne noise levels. The construction and operational impact would be less than significant.

**Mitigation Measures:** None Required.

**Significance Level after Mitigation:** Less Than Significant Impact.

***Alternative 3 – MF/RO with Brine Disposal via Trucking*****MF/RO and UV Disinfection Facilities**

The MF/RO facilities at the VWRP and the UV disinfection facilities at the VWRP and SWRP would be the same as described for Alternative 1. Impact would be less than significant.

---

### **RO Product Water Conveyance System to SWRP**

The RO product water conveyance system facilities would be the same as described for Alternative 1. Impact would be less than significant.

### **Brine Disposal System (Trucking)**

The brine disposal system facilities are described in Section 6.7.1. The construction of the truck loading and unloading terminals would be located within industrial areas. Similarly to Alternative 1, the construction would be temporary and the type of equipment used for construction of the truck loading and unloading terminals would not cause excessive groundborne vibration. Impact would be less than significant.

The operation of the brine disposal system would not include any stationary equipment that would generate groundborne vibrations. Operational groundborne vibration would be generated by truck traffic on local roadways. However, the addition of four truck trips per hour on already heavily traveled roadways would not contribute to a traffic related vibration level that would be perceptible by sensitive receptors beyond the current conditions. Impact would be less than significant.

### **Impact Summary**

The construction and operation of Alternative 3 would not expose people to, or generate, excessive groundborne vibration or groundborne noise levels. The construction and operational impact would be less than significant.

**Mitigation Measures:** None Required.

**Significance Level after Mitigation:** Less Than Significant Impact.

## ***Alternative 4 – Phased AWRM***

### **Phase I**

#### **UV Disinfection Facilities**

The UV disinfection facilities at the VWRP and SWRP would be the same as described for Alternative 1. Impact would be less than significant.

#### **Salt Management Facilities**

The salt management facilities are described in Section 6.7.1. The nearest sensitive receptors to the salt management facilities (including the East and West Piru well fields, the associated extraction pipelines and pump stations, and the blending groundwater pipeline) would be residential homes located on agricultural fields along SR-126 approximately 66 feet from the connecting pipeline alignment components. The use of heavy equipment during construction would generate vibration levels of up to 0.089 PPV or 87 RMS (caisson drill) at a distance of 25 feet (Table 18-11). The nearest sensitive receptors would be exposed to vibration levels of approximately 0.021 PPV and 74 RMS. These levels would not exceed FTA threshold standards. Impact would be less than significant.

The pump station pumps would be located on concrete pads that would absorb the vibrations produced during operation. No vibrations would be associated with the operation of the well field extraction or blended groundwater pipelines. Impact would be less than significant.

### **Supplemental Water System**

The supplemental water system facilities are described in Section 6.7.1. The nearest receptors to the supplemental water pipeline would be commercial uses located approximately 65 feet from the pipeline alignment along The Old Road. The use of equipment during construction would generate vibration levels of up to 0.076 PPV or 86 RMS (loaded supply truck) at a distance of 25 feet (Table 18-11). The nearest receptors would be exposed to vibration levels of approximately 0.018 PPV and 74 RMS. These levels would not exceed FTA standards. No vibrations would be associated with the operation of the supplemental water system. Impact would be less than significant.

### **Impact Summary – Phase I**

The construction and operation of Phase I of Alternative 4 would not expose people to, or generate, excessive groundborne vibration or groundborne noise levels. The construction and operational impact would be less than significant.

**Mitigation Measures:** None Required.

**Significance Level after Mitigation:** Less Than Significant Impact.

## **Phase II**

### **MF/RO Facilities**

The MF/RO facilities at the VWRP would be similar to those described for Alternative 1, but under this alternative the facilities would be smaller in size. Impact would be less than significant.

### **RO Product Water Conveyance System to Ventura County**

The RO product water conveyance system facilities are described in Section 6.7.1. The Ventura County RO product water pump station would be constructed within the VWRP and would use construction equipment similar to that used for the MF/RO facilities. Construction of the Ventura County RO product water pipeline would include trenching in public ROW to the maximum extent practicable. The use of equipment during construction that would generate vibration levels of up to 0.076 PPV or 86 RMS (loaded supply truck) at a distance of 25 feet (Table 18-11). The nearest sensitive receptors to the Ventura County RO product water pipeline would be residential homes located within agricultural lands, approximately 125 feet from the pipeline alignment along SR-126/Old Telegraph Road. During construction, the sensitive receptors would be exposed to short-term vibration levels of approximately 0.007 PPV and 65 RMS. These levels would not exceed FTA standards. Impact would be less than significant.

The Ventura County RO product water pump station would be located within the VWRP on a concrete pad that would absorb the vibrations produced during operation. The pump station would be located within an industrial facility and would not produce excessive vibrations that would have the potential to impact persons or structures. No vibrations would be associated with

the operation of the Ventura County RO product water pipeline. Impact would be less than significant.

### **Brine Disposal System**

The brine disposal system facilities are described in Section 6.7.1. The brine disposal system would rely on a pipeline, DWI, or trucking – each of which was previously analyzed for Alternatives 1, 2, and 3, respectively, but there would be a lower peak brine flow to manage so the diameter of the pipeline, number of wells, and peak number of truck trips would be smaller. As previously discussed, none of these alternative brine disposal systems would result in a significant construction or operational vibration impact. Impact would be less than significant.

### **Impact Summary – Phases I and II**

The construction and operation of Phase I of Alternative 4 would not expose people to, or generate, excessive groundborne vibration or groundborne noise levels. The construction and operational impact would be less than significant.

The construction and operation of Phase II of Alternative 4 would not expose people to, or generate, excessive groundborne vibration or groundborne noise levels. The construction and operational impact would be less than significant.

**Mitigation Measures:** None Required.

**Significance Level after Mitigation:** Less Than Significant Impact.

### **18.4.2.3 Ambient Noise Levels**

**Impact 18-3: Operation of the proposed project could cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project or substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.**

### ***Alternative 1 – MF/RO with Brine Disposal via Pipeline***

#### **MF/RO and UV Disinfection Facilities**

The MF/RO facilities at the VWRP and the potential UV disinfection facilities at the VWRP and/or SWRP are described in Section 6.7.1. Operation of the proposed mechanical equipment would be continuous within existing industrial facilities and could slightly increase ambient noise levels in the proposed project vicinity. However, operation of the MF/RO and UV disinfection facilities would constitute “like uses,” resulting in a minimal increase in noise. Furthermore, the VWRP is located approximately 400 feet west of I-5, which contributes to elevated ambient noise conditions due to vehicle movements. The SWRP is also adjacent to the Metrolink railroad tracks. As a result, the proposed changes to ambient noise levels would be indistinguishable from current ambient noise levels in the proposed project vicinity. Impact would be less than significant.

#### **RO Product Water Conveyance System to SWRP**

The RO product water conveyance system facilities are described in Section 6.7.1. The RO product water pipeline would be constructed underground from the VWRP to the SWRP and

would not include any aboveground components that would create noise. The proposed project would include the operation of the RO product water pump station within the VWRP site that could generate increased ambient noise levels. However, the pump station would be located at an existing industrial site and there are no sensitive receptors surrounding the VWRP. The addition of a pump station and operation of the RO product water pipeline would not substantially increase the ambient noise levels in the surrounding areas. Impact would be less than significant.

### **Brine Disposal System (Pipeline to JOS)**

The brine disposal system facilities are described in Section 6.7.1. The brine disposal pipeline would be constructed underground and would not include any aboveground components that would create noise. One brine disposal pipeline pump station would be located at the VWRP, which is an existing industrial site with no sensitive receptors nearby. The other brine disposal pipeline pump station would be located offsite along the pipeline route. Operation of the offsite brine disposal pipeline pump station would have the potential to increase the surrounding ambient noise levels. However, the pumps would be located within concrete or block wall structures fitted with acoustic louvers designed to ensure that noise emitted would not exceed the noise levels at the property's boundary permitted by local noise ordinances. Operation of the brine disposal system would not substantially increase the ambient noise levels in the surrounding areas. Impact would be less than significant.

### **Impact Summary**

The operation of Alternative 1 would not cause a substantial increase in ambient noise levels. The operational impact would be less than significant.

**Mitigation Measures:** None Required.

**Significance Level after Mitigation:** Less Than Significant Impact.

## ***Alternative 2 – MF/RO with Brine Disposal via DWI***

### **MF/RO and UV Disinfection Facilities**

The MF/RO facilities at the VWRP and the potential UV disinfection facilities at the VWRP and/or SWRP would be to the same as described for Alternative 1. Impact would be less than significant.

### **RO Product Water Conveyance System to SWRP**

The RO product water conveyance system facilities would be the same as described for Alternative 1. Impact would be less than significant.

### **Brine Disposal System (DWI)**

The brine disposal system facilities are described in Section 6.7.1. Operation at the DWI site would include electric pumps and injection wells that would potentially produce new noise. The electric pumps would generate noise and add to the existing ambient noise levels, though levels are not anticipated to exceed the allowable Los Angeles County ambient noise levels for daytime and nighttime hours. The injection pumps would be housed within a closed environment, which would reduce noise levels coming from the DWI site. In addition, any potential impacts to the



nearest sensitive receptors would be attenuated by the topography, mature vegetation, and vehicle noise from The Old Road and I-5. The operation of the DWI site would not significantly increase ambient noise levels for nearby sensitive receptors. Furthermore, the DWI brine pipeline would be constructed underground and would not include any aboveground components that would generate noise. The DWI site would require vehicle trips for the ongoing maintenance of the facilities; however, it is anticipated operational maintenance would be a nominal increase to the ambient noise levels generated along the local roadways. Impact would be less than significant.

### **Impact Summary**

The operation of Alternative 2 would not cause a substantial increase in ambient noise levels. The operational impact would be less than significant.

**Mitigation Measures:** None Required.

**Significance Level after Mitigation:** Less Than Significant Impact.

### ***Alternative 3 – MF/RO with Brine Disposal via Trucking***

#### **MF/RO and Ultraviolet Disinfection Facilities**

The MF/RO facilities at the VWRP and the UV disinfection facilities at the VWRP and SWRP would be the same as described for Alternative 1. Impact would be less than significant.

#### **RO Product Water Conveyance System to SWRP**

The RO product water conveyance system facilities to the SWRP would be the same as described for Alternative 1. Impact would be less than significant.

#### **Brine Disposal System (Trucking)**

The brine disposal system facilities are described in Section 6.7.1. The truck loading and unloading terminals would be located within industrial areas. The noise associated with the operation of the terminals would come from idling haul trucks. There are no sensitive receptors located with the immediate locations of the terminals during the day or night. Furthermore, the idling of trucks while being loaded and unloaded at the terminal locations would be a “like use” for an industrial area. Therefore, the operation of the truck loading and unloading terminals would not significantly increase ambient noise levels for nearby sensitive receptors. Impact would be less than significant.

As previously discussed in Section 18.4.2.1, the operation of the brine disposal system for Alternative 3 would require approximately 90 truck round trips per day for the disposal of the brine produced at the VWRP. There would be no sensitive receptors along the truck route in the City of Santa Clarita area. Currently, The Old Road is used by heavy trucks as a cut through to Henry May Drive. Furthermore, during the nighttime hours the businesses along the truck route would be closed and would not be impacted by truck noise. As previously discussed in Section 18.4.2.1, the most direct truck route to the truck unloading terminal located in the City Terrace area would be the Herbert Avenue route. This route passes through a residential area with homes on both sides of Herbert Avenue for approximately 0.25 mile. As a result, the following analysis evaluates this haul route as the worst case scenario for operational noise impacts to sensitive receptors.

The addition of approximately four truck trips per hour during daytime and nighttime hours would potentially impact the residents along Herbert Avenue. Generally, noise levels increase by 3 dBA when the numbers of similar noise sources double (Caltrans 1998). When compared to the traffic volumes identified in the traffic report (ArchBeach 2013), the increase in haul trucks would not double the amount of traffic currently traveling along Herbert Avenue. As a result, the increase in haul trucks is not anticipated to incrementally increase the noise level by 3 dBA or more averaged over 24 hours. However, the addition of four trucks every hour between 10:00 PM and 7:00 AM would increase nighttime noise in the residential area on Herbert Avenue. The residents are located on both sides of Herbert Avenue and are within 50 feet from the centerline of the roadway. The noise produced by a haul truck traveling at 35 miles per hour (mph) is 80 dBA at a distance of 50 feet. The hauling of brine along residential streets would result in an  $L_{max}$  of 80 dBA three to four times per hour throughout the night for the lifetime of the proposed project. This would constitute a significant impact to ambient noise levels in a residential area. However, the implementation of Mitigation Measure NOISE-3 would reduce the impact to a less than significant level.

### **Impact Summary**

The operation of the truck unloading terminal trucking route for Alternative 3 would cause a substantial increase in ambient noise levels. Implementation of Mitigation Measure NOISE-3 would mitigate the impact to a less than significant level.

**Mitigation Measures:** Implement NOISE-3.

**Significance Level after Mitigation:** Less Than Significant Impact.

## ***Alternative 4 – Phased AWRM***

### **Phase I**

#### **UV Disinfection Facilities**

The UV disinfection facilities at the VWRP and SWRP would be the same as described for Alternative 1. Impact would be less than significant.

#### **Salt Management Facilities**

The salt management facilities are described in Section 6.7.1. Operation of the two well fields in the Piru Subbasin would include 11 extraction wells with onsite motors and pumps that would produce noise. However, the extraction wells would be considered a “like use” as agricultural extraction wells are currently located around the proposed project area. The extraction wells would be operational 24 hours per day, 7 days per week as the WRPs discharge effluent throughout the day. The blending groundwater pipeline would be located underground and would not include any aboveground components that would create noise. The proposed project would include the operation of well field pump stations that could generate increased ambient noise levels. However, the pumps would be located within concrete or block wall structures fitted with acoustic louvers, designed to ensure that noise emitted from the structure would not exceed the noise levels permitted at the property boundary by local noise ordinances. Operation of the salt management facilities would not substantially increase the ambient noise levels in the surrounding areas. Impact would be less than significant.

---

### **Supplemental Water System**

The supplemental water system facilities are described in Section 6.7.1. The supplemental water pipeline would be located underground and would not include any above ground components that would create noise. Operation of the supplemental water system would not substantially increase the ambient noise levels in the surrounding areas. Impact would be less than significant.

#### **Impact Summary – Phase I**

The operation of Phase I of Alternative 4 would not cause a substantial increase in ambient noise levels. The operational impact would be less than significant.

**Mitigation Measures:** None Required.

**Significance Level after Mitigation:** Less Than Significant Impact.

### **Phase II**

#### **MF/RO and Second-Pass RO Facilities**

The MF/RO facilities at the VWRP for Phase II of Alternative 4 would be similar to those described for Alternative 1, but under this alternative the facilities would be smaller in size. Impact would be less than significant.

#### **RO Product Water Conveyance System to Ventura County**

The RO product water conveyance system facilities are described in Section 6.7.1. The Ventura County RO product water pipeline would be located underground and would not include any above ground components that would create noise. The proposed project would include the operation of the Ventura County RO product water pump station within the VWRP site that could generate increased ambient noise levels. However, the pump station would be located at an existing industrial site and there are no sensitive receptors surrounding the VWRP. The addition of a pump station and operation of the Ventura County RO product water pipeline would not substantially increase the ambient noise levels in the surrounding areas. Impact would be less than significant.

#### **Brine Disposal System**

The brine disposal system facilities are described in Section 6.7.1. The brine disposal system would rely on a pipeline, DWI, or trucking – each of which was previously analyzed for Alternatives 1, 2, and 3, respectively, but there would be a lower peak brine flow to manage so the diameter of the pipeline, number of wells, and peak number of truck trips would be smaller. As previously discussed, the operation of the brine disposal systems under Alternatives 1 and 2 would not substantially increase the ambient noise levels in the surrounding areas. However, the brine disposal system that utilizes trucking under Alternative 3 would have a significant impact to ambient noise. Implementation of Mitigation Measure NOISE-3 would reduce the impact to a less than significant level.

### **Impact Summary – Phases I and II**

The operation of Phase I of Alternative 4 would not cause a substantial increase in ambient noise levels. The operational impact would be less than significant.

The operation of the trucking route for Phase II of Alternative 4 would cause a substantial increase in ambient noise levels. Implementation of Mitigation Measure NOISE-3 would mitigate the impact to a less than significant level.

**Mitigation Measures:** Implement NOISE-3.

**Significance Level after Mitigation:** Less Than Significant Impact.