5.7 Noise

5.7 NOISE

This section addresses potential noise impacts from the construction, traffic, and operations that could occur with implementation of the proposed Project. The information contained within this section is based on data from the *Cambria Emergency Water Supply Project Evaporator Pond Noise Control Memorandum* (CDM Smith, July 31, 2014) and analysis conducted by Michael Baker International (Michael Baker).

5.7.1 ENVIRONMENTAL SETTING

NOISE SCALES AND DEFINITIONS

Sound is described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dBA higher than another is judged to be twice as loud, and 20 dBA higher four times as loud, and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Examples of various sound levels in different environments are illustrated on Table 5.7-1, *Sound Levels and Human Response*.

Many methods have been developed for evaluating community noise to account for, among other things:

- The variation of noise levels over time;
- The influence of periodic individual loud events; and
- The community response to changes in the community noise environment.

Numerous methods have been developed to measure sound over a period of time; refer to Table 5.7-2, *Noise Descriptors*.

Table 5.7-1
Sound Levels and Human Response

Noise Source	dBA Noise Level	Response
	150	
Carrier Jet Operation	**140**	Harmfully Loud
	130	Pain Threshold
Jet Takeoff *(200 ft.)* Discotheque	**120**	
Unmuffled Motorcycle Auto Horn *(3 ft.)* Rock'n Roll Band Riveting Machine	**110**	Maximum Vocal Effort Physical Discomfort
Loud Power Mower Jet Takeoff *(2000 ft.)* Garbage Truck	**100**	Very Annoying Hearing Damage (Steady 8-Hour Exposure)
Heavy Truck *(50 ft.)* Pneumatic Drill *(50 ft.)*	**90**	
Alarm Clock Freight Train *(50 ft.)* Vacuum Cleaner *(10 ft.)*	**80**	Annoying
Freeway Traffic *(50 ft.)*	**70**	Telephone Use Difficult
Dishwashers Air Conditioning Unit *(20 ft.)*	**60**	Intrusive
Light Auto Traffic *(100 ft.)*	**50**	Quiet
Living Room Bedroom	**40**	
Library Soft Whisper *(15 ft.)*	**30**	Very Quiet
Broadcasting Studio	**20**	Just Audible
	10	Threshold of Hearing

Source: Environmental Protection Agency, *Protective Noise Levels*, November 1978.

HEALTH EFFECTS OF NOISE

Human response to sound is highly individualized. Annoyance is the most common issue regarding community noise. However, many factors influence people's response to noise. The factors can include the character of the noise, the variability of the sound level, the presence of tones or impulses, and the time of day of the occurrence. Additionally, non-acoustical factors, such as the person's opinion of the noise source, the ability to adapt to the noise, the attitude towards the source and those associated with it, and the predictability of the noise, all influence people's response. As such, response to noise varies widely from one person to another and with any particular noise, individual responses will range from "not annoyed" to "highly annoyed."

Table 5.7-2
Noise Descriptors

Term	Definition
Decibel (dB)	The unit for measuring the volume of sound equal to 10 times the logarithm (base 10) of the ratio of the pressure of a measured sound to a reference pressure (20 micropascals).
A-Weighted Decibel (dBA)	A sound measurement scale that adjusts the pressure of individual frequencies according to human sensitivities. The scale accounts for the fact that the region of highest sensitivity for the human ear is between 2,000 and 4,000 cycles per second (hertz).
Equivalent Sound Level (L_{eq})	The sound level containing the same total energy as a time varying signal over a given time period. The L_{eq} is the value that expresses the time averaged total energy of a fluctuating sound level.
Maximum Sound Level (L_{max})	The highest individual sound level (dBA) occurring over a given time period.
Minimum Sound Level (L_{min})	The lowest individual sound level (dBA) occurring over a given time period.
Community Noise Equivalent Level (CNEL)	A rating of community noise exposure to all sources of sound that differentiates between daytime, evening, and nighttime noise exposure. These adjustments are +5 dBA for the evening, 7:00 PM to 10:00 PM, and +10 dBA for the night, 10:00 PM to 7:00 AM.
Day/Night Average (L_{dn})	The L_{dn} is a measure of the 24-hour average noise level at a given location. It was adopted by the U.S. Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the L_{eq}. The L_{dn} is calculated by averaging the L_{eq}'s for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10:00 PM to 7:00 AM) by 10 dBA to account for the increased sensitivity of people to noises that occur at night.
Exceedance Level (L_n)	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% (L_{01}, L_{10}, L_{50}, L_{90}, respectively) of the time during the measurement period.

Source Harris, Cyril M., *Handbook of Noise Control*, 1979.

The effects of noise are often only transitory, but adverse effects can be cumulative with prolonged or repeated exposure. The effects of noise on the community can be organized into six broad categories:

- Noise-Induced Hearing Loss;
- Interference with Communication;
- Effects of Noise on Sleep;
- Effects on Performance and Behavior;
- Extra-Auditory Health Effects; and
- Annoyance.

According to the United States Public Health Service, nearly ten million of the estimated 21 million Americans with hearing impairments owe their losses to noise exposure. Noise can mask important sounds and disrupt communication between individuals in a variety of settings. This process can cause anything from a slight irritation to a serious safety hazard, depending on the

circumstance. Noise can disrupt face-to-face communication and telephone communication, and the enjoyment of music and television in the home. It can also disrupt effective communication between teachers and pupils in schools, and can cause fatigue and vocal strain in those who need to communicate in spite of the noise.

Interference with communication has proved to be one of the most important components of noise-related annoyance. Noise-induced sleep interference is one of the critical components of community annoyance. Sound level, frequency distribution, duration, repetition, and variability can make it difficult to fall asleep and may cause momentary shifts in the natural sleep pattern, or level of sleep. It can produce short-term adverse effects on mood changes and job performance, with the possibility of more serious effects on health if it continues over long periods. Noise can cause adverse effects on task performance and behavior at work, and non-occupational and social settings. These effects are the subject of some controversy, since the presence and degree of effects depends on a variety of intervening variables. Most research in this area has focused mainly on occupational settings, where noise levels must be sufficiently high and the task sufficiently complex for effects on performance to occur.

Annoyance can be viewed as the expression of negative feelings resulting from interference with activities, as well as the disruption of one's peace of mind and the enjoyment of one's environment. Field evaluations of community annoyance are useful for predicting the consequences of planned actions involving highways, airports, road traffic, railroads, or other noise sources. The consequences of noise-induced annoyance are privately held dissatisfaction, publicly expressed complaints to authorities, and potential adverse health effects, as discussed above. In a study conducted by the United States Department of Transportation, the effects of annoyance to the community were quantified. In areas where noise levels were consistently above 60 dBA CNEL, approximately nine percent of the community is highly annoyed. When levels exceed 65 dBA CNEL, that percentage rises to 15 percent. Although evidence for the various effects of noise have differing levels of certainty, it is clear that noise can affect human health. Most of the effects are, to a varying degree, stress related.

GROUND-BORNE VIBRATION

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. The peak particle velocity (PPV) or the root mean square (RMS) velocity is usually used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak or vibration signal, while RMS is defined as the square root of the average of the squared amplitude of the signal. PPV is typically used for evaluating potential building damage, whereas RMS is typically more suitable for evaluating human response. Typically, ground-borne vibration, generated by man-made activities, attenuates rapidly with distance from the source of vibration. Man-made vibration issues are therefore usually confined to short distances (i.e., 500 feet or less) from the source.

Both construction and operation of development projects can generate ground-borne vibration. In general, demolition of structures preceding construction generates the highest vibrations. Construction equipment such as vibratory compactors or rollers, pile drivers, and pavement breakers can generate perceptible vibration during construction activities. Heavy trucks can also generate ground-borne vibrations that vary depending on vehicle type, weight, and pavement conditions.

SENSITIVE RECEPTORS

Human response to noise varies widely depending on the type of noise, time of day, and sensitivity of the receptor. The effects of noise on humans can range from temporary or permanent hearing loss to mild stress and annoyance due to such things as speech interference and sleep deprivation. Prolonged stress, regardless of the cause, is known to contribute to a variety of health disorders. Noise, or the lack thereof, is a factor in the aesthetic perception of some settings, particularly those with religious or cultural significance. Certain land uses are particularly sensitive to noise, including schools, hospitals, rest homes, long-term medical and mental care facilities, and parks and recreation areas. Residential areas are also considered noise sensitive, especially during the nighttime hours.

Noise-sensitive areas located on and adjacent to the Project site are comprised of natural open spaces (i.e., the San Simeon Creek and Van Gordon Creek corridors). Noise-sensitive receptors located in the immediate Project area include residential and recreational uses; refer to Table 5.7-3, *Surrounding Sensitive Receptors*.

AMBIENT NOISE MEASUREMENTS

In order to quantify existing ambient noise levels in the Project area, Michael Baker conducted five short-term daytime noise measurements, and three short-term nighttime noise measurements on March 24 and 25, 2015; refer to Table 5.7-4, *Existing Ambient Noise Measurements*. The noise measurement sites are representative of typical existing noise exposure within and immediately adjacent to the Project site; refer to Exhibit 5.7-1, *Noise Measurement Locations*. Ten-minute measurements were taken at each site, between approximately 10:00 AM and 12:30 PM for daytime measurements, and approximately 8:55 PM and 9:45 PM for nighttime measurements. Meteorological conditions for daytime measurements were clear skies, cool temperatures, with light wind speeds (0 to 5 miles per hour), and low humidity. Meteorological conditions for nighttime measurements were clear skies, cool temperatures, with light wind speeds (0 to 5 miles per hour), and low humidity.

Table 5.7-3
Surrounding Sensitive Receptors

Type	Name	Distance from Project Site (feet)[1]	Orientation from Project Site
Residential	San Simeon State Park Personnel Housing	450	West
	Residential	400	North
		2,800	North
		70	North/Northeast
		730	East
		450	East
Parks/Natural Areas/Recreational Uses	San Simeon Creek Campground	75[2]	West
	San Simeon Equestrian Facility	60	North
	San Simeon State Park	870	South
	Washburn Primitive Campground	1,030	Southeast
	San Simeon Creek	Onsite	Onsite
	Van Gordon Creek	Onsite	Onsite

Notes
1. Distances are measured from the exterior Project boundary and not from individual Project components within the Project site's interior.
2. The Project boundary is located approximately 75 feet from the San Simeon Creek Campground. However, individual Project components such as the AWTP and the evaporation pond/evaporators are located further away. Specifically, the AWTP is located approximately 970 feet east of the San Simeon Creek Campground and the evaporation pond/evaporators are located approximately 200 feet east of the San Simeon Creek Campground.

Source: Google Earth, 2015.

EXISTING NOISE SOURCES

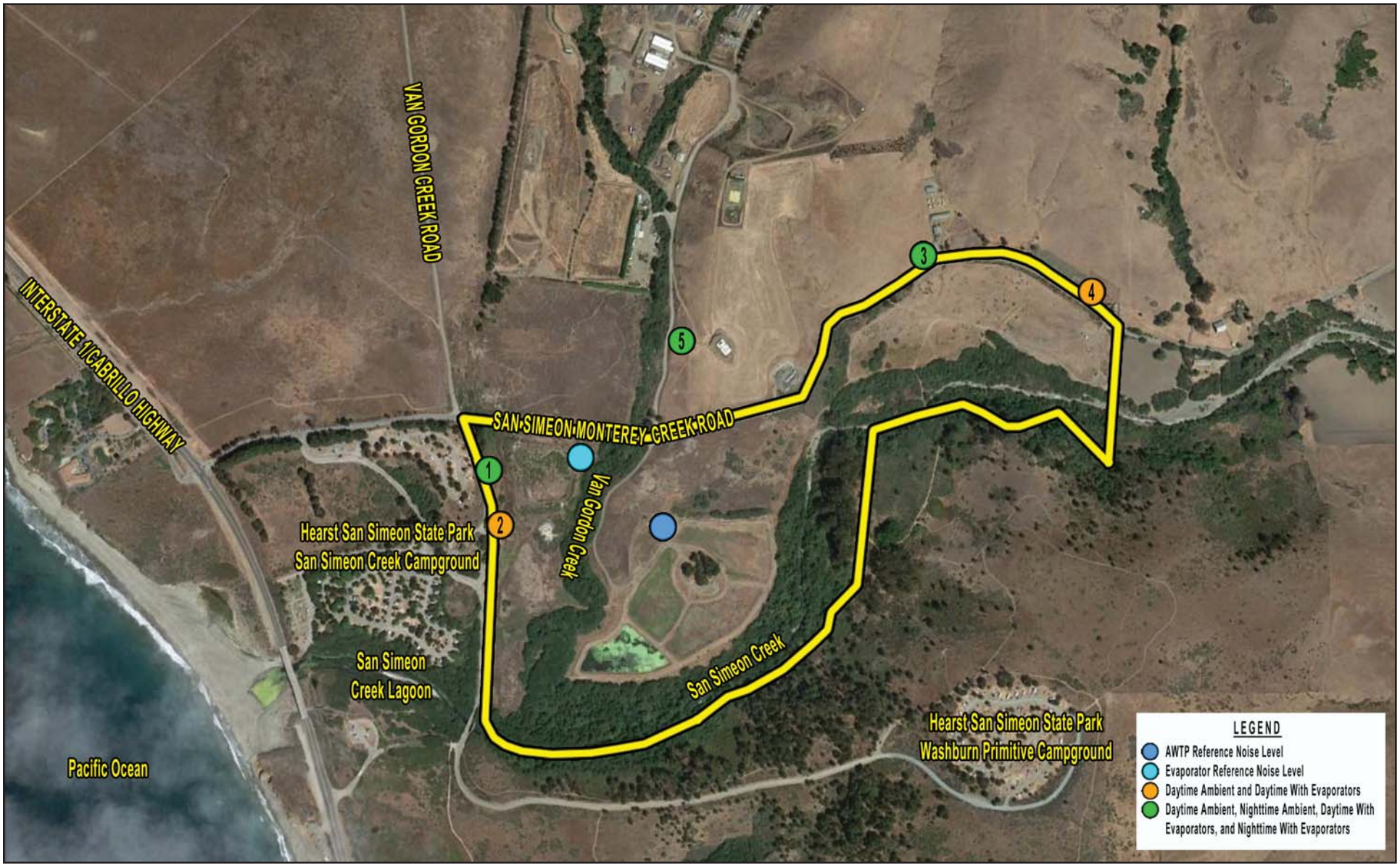
The existing noise environment in the Project area is primarily comprised of mobile and stationary sources. Mobile noise is mainly concentrated along State Route 1 (SR-1), located approximately 0.25-mile to the west of the Project site. In addition, marginal mobile traffic noise levels emanates from San Simeon Monterey Creek Road to the north, and Van Gordon Creek Road to the west. Existing stationary noise sources in the Project area are nominal, as the Project site is positioned within a rural coastal area. However, current operation of Well 9P7 with associated 20 horsepower water pump, and five spray evaporators produce infrequent noise on site.

Table 5.7-4
Existing Ambient Noise Measurements

Site No.	Location	Leq (dBA)	Lmin (dBA)	Lmax (dBA)	Peak (dBA)	Date	Time
Daytime							
1	West side of Van Gordon Creek Road, adjoining San Simeon Creek Campground to the west.	47.2	34.1	68.0	91.0	3/25/2015	12:13 PM
2	East side of Van Gordon Creek Road, east of the San Simeon State Park Personnel Housing.	47.5	39.1	71.3	95.3		12:26 PM
3	South of San Simeon Monterey Creek Road, directly across from the San Simeon Equestrian Facility.	50.3	25.1	74.4	92.7		10:47 AM
4	South of San Simeon Monterey Creek Road, approximately 85 feet west of the old schoolhouse (1475 San Simeon Monterey Creek Road).	53.7	28.0	77.6	93.4		11:01 AM
5	Atop hill to the northeast of the evaporation pond, approximately 1,290 feet northeast of the evaporators.	41.4	32.8	62.4	80.1		10:18 AM
Nighttime[1]							
1	West side of Van Gordon Creek Road, adjoining San Simeon Creek Campground to the west.	40.6	36.4	45.1	70.6	3/24/2015	8:55 PM
3	South of San Simeon Monterey Creek Road, directly across from the San Simeon Equestrian Facility.	35.2	33.3	37.4	58.9		9:12 PM
5[2]	North of San Simeon Monterey Creek Road, directly across from the AWTP site entrance gate, approximately 955 feet east of the evaporators.	46.8	45.5	48.2	68.1		9:40 PM

Notes
1. Nighttime ambient noise measurements were approximately three minutes in length.
2. Different measurement location than the daytime locations, although in same vicinity.

Source Michael Baker International, March 24 and 25, 2015; refer to Appendix G, *Noise Data*.



Source: Google Earth, 2015.
- Approximate Project Boundary

NOT TO SCALE

Michael Baker INTERNATIONAL

08/16 • JN 144828

SUBSEQUENT ENVIRONMENTAL IMPACT REPORT
CAMBRIA SUSTAINABLE WATER FACILITY PROJECT

Noise Measurement Locations

Exhibit 5.7-1

5.7.2 REGULATORY SETTING

FEDERAL

There are no federal noise regulations relevant to the Project.

STATE

California Government Code

California Government Code Section 65302 (f) mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services.

The guidelines rank noise land use compatibility in terms of "normally acceptable", "conditionally acceptable", "normally unacceptable", and "clearly unacceptable" noise levels for various land use types. Single-family homes are "normally acceptable" in exterior noise environments up to 60 Community Noise Equivalent Level (CNEL) and "conditionally acceptable" up to 70 CNEL. Multiple-family residential uses are "normally acceptable" up to 65 CNEL and "conditionally acceptable" up to 70 CNEL. Schools, libraries, and churches are "normally acceptable" up to 70 CNEL, as are office buildings and business, commercial, and professional uses.

LOCAL

Coastal Zone Land Use Ordinance (CZLUO) Standards

CZLUO Chapter 23.06 (Operational Standards). This Chapter establishes standards to be applied to the operation and conduct of land uses after their establishment, and on a continuing basis. These standards are established to protect residents from the adverse effects of excessive or objectionable emissions of noise that may be generated by land uses, activities, processes or equipment. The purpose of this chapter is also to identify acceptable levels of noise and other emissions in various land use categories, and to set forth procedures for coordinating the review of development projects with the APCD.

CZLUO Section 23.06.040 (Noise Standards). CZLUO Sections 23.06.044 through 23.06.050 establish standards for acceptable exterior and interior noise levels and describe how noise is to be measured. These standards are intended to protect persons from excessive noise levels, which are detrimental to the public health, welfare, and safety and contrary to the public interest. It is the intent of this chapter to protect persons from excessive levels of noise within or near various residential development and other specified noise-sensitive land uses.

CZLUO Section 23.06.042 (Exceptions to Noise Standards). The standards of CZLUO Sections 23.06.044 through 23.06.050 are not applicable to noise from the following sources:

(2) The use of any mechanical device, apparatus or equipment related to or connected with emergency activities or emergency work to protect life or property;

(4) Noise sources associated with construction, provided such activities do not take place before 7:00 AM or after 9:00 PM any day except Saturday or Sunday, or before 8:00 AM or after 5:00 PM on Saturday or Sunday; and

(8) Noise sources associated with work performed by private or public utilities in the maintenance or modification of its facilities.

CZLUO Section 23.06.044 (Exterior Noise Level Standards). The exterior noise level standards of this section are applicable when a land use affected by noise is one of the following noise-sensitive uses which are defined in the land use element and local coastal plan residential uses listed in Table O, framework for planning, except for residential accessory uses and temporary dwellings; health care services (hospitals and similar establishments only); hotels and motels; bed and breakfast facilities; schools (preschool to secondary, college and university, specialized education and training); churches; libraries and museums; public assembly and entertainment; offices, and outdoor sports and recreation.

(1) No person shall create any noise or allow the creation of any noise at any location within the unincorporated areas of the county on property owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level when measured at any of the preceding noise-sensitive land uses situated in either the incorporated or unincorporated areas to exceed the noise level standards in the following table. When the receiving noise-sensitive land use is outdoor sports and recreation, the following noise level standards shall be increased by ten dB.

Table 5.7-5
Exterior Noise Level Standards

Noise Standard	Daytime (7:00 AM to 10:00 PM)	Nighttime[1] (10:00 PM to 7:00 AM)
Hourly equivalent sound level (Leq, dB)	50	45
Maximum level, dB	70	65

Notes
1. Applies only to uses that operate or are occupied during nighttime hours.

(2) In the event the measured ambient noise level exceeds the applicable exterior noise level standard in subsection (1), the applicable standard shall be adjusted so as to equal the ambient noise level plus one dB.

(3) Each of the exterior noise level standards specified in subsection (1) shall be reduced by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

(4) If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the exterior noise level standards.

CZLUO Section 23.06.046 (Interior Noise Level Standards). The exterior noise level standards of this section are applicable when a land use affected by noise is one of the following noise-sensitive uses which are defined in the land use element and local coastal plan residential uses listed in Table O, framework for planning, except for residential accessory uses and temporary dwellings.

(1) No person shall operate or cause to be operated a source of noise within a residential use in any location in the unincorporated areas of the county or allow the creation of any noise which causes the noise level when measured inside a residential use located in either the incorporated or unincorporated area to exceed the interior noise level standards in the following table

Table 5.7-6
Interior Noise Level Standards

Noise Standard	Daytime (7:00 AM to 10:00 PM)	Nighttime[1] (10:00 PM to 7:00 AM)
Hourly equivalent sound level (Leq, dB)	40	35
Maximum level, dB	60	55
Notes 1. Applies only to uses that operate or are occupied during nighttime hours.		

(2) In the event the measured ambient noise level exceeds the applicable interior noise level standard in subsection (1), the applicable standard shall be adjusted so as to equal the ambient noise level plus one dB.

(3) Each of the interior noise level standards specified in subsection (1) shall be reduced by five dB for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

(4) If the intruding noise source is continuous and cannot reasonably be discontinued or stopped for a time period whereby the ambient noise level can be measured, the noise level measured while the source is in operation shall be compared directly to the interior noise level standards.

CZLUO Section 23.06.060 (Vibration Standards). Any land use conducted in or within one-half mile of an urban or village reserve line is to be operated to not produce detrimental earth-borne vibrations perceptible at the points of determination identified in the following table.

Table 5.7-7
CZLUO Vibration Standards

Land Use Category in Which Vibration Source is Located	Point of Determination
Residential, office and professional, recreation, commercial	At or beyond any lot line of the lot containing the use
Industrial	At or beyond the boundary of the industrial category

CZLUO Section 23.06.062 (Exceptions to Standards). The vibration standards of this chapter are not applicable to:

(1) Vibrations from construction, the demolition of structures, surface mining activities or geological exploration between 7:00 AM and 9:00 PM; and/or

(2) Vibrations from moving sources such as trucks and railroads.

Emergency Coastal Development Permit (E-CDP) Condition

Refer to Appendix C, *E-CDP Conditions of Approval*, for a list of E-CDP Conditions. E-CDP Condition 6F pertains to Noise.

5.7.3 SUMMARY OF WATER MASTER PLAN PEIR CONCLUSIONS

WMP PEIR Section 5.5, *Noise*, analyzed impacts concerning noise, as summarized below:

Short-Term Construction Noise. Grading and construction associated with the WMP improvements could expose persons to or generate noise levels in excess of standards established in San Luis Obispo (SLO) County's Noise Element or Noise Ordinance. Additionally, the WMP improvements could result in temporary/periodic increases in ambient noise levels. Noise levels would vary during the construction period, depending upon the construction phase. High groundborne noise levels can be created by the operation of heavy-duty trucks, backhoes,

bulldozers, excavators, front-end loaders, compacters, scrapers, and other heavy duty construction equipment. Construction-related noise levels in excess of 60 dBA could impact sensitive receptors located within 1,000 feet of the construction site. It was not known at the time of the EIR's writing whether horizontal directional drilling (HDD) would be used on the projects; a pending geotechnical/hydrogeologic investigation would develop various alternatives for subsequent environmental analysis. Following compliance with SLO County Code requirements and implementation of recommended mitigation, impacts are concluded to be less than significant.

Long-Term Operational Noise. Operations and maintenance activities associated with WMP improvements could expose persons to or generate noise levels in excess of SLO County's Noise Element or Noise Ordinance standards. Additionally, the WMP improvements could result in permanent increases in ambient noise levels. Mobile noise sources would be nominal due to a nominal increase in vehicle trips for maintenance purposes. Although several stationary noise sources would be introduced, many of them would operate only intermittently and at various locations. The WMP improvements would be subject to compliance with the SLO County Code that establishes standards for acceptable exterior and interior noise levels. Analysis has concluded that implementation of the recommended mitigation and compliance with SLO County Code requirements would reduce impacts to less than significant.

5.7.4 IMPACT THRESHOLDS AND SIGNIFICANCE CRITERIA

In accordance with the CEQA Guidelines, agency and professional standards, a project impact would be considered significant if the project would:

- Expose persons to, or generate, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies (refer to Impact Statements 5.7-1 and 5.7-3);

- Expose persons to, or generate, excessive ground borne vibration or ground borne noise levels (refer to Impact Statement 5.7-2);

- Substantially permanently increase ambient noise levels in the project vicinity above levels existing without the project (refer to Impact Statements 5.7-3 and 5.7-4);

- Substantially temporarily or periodically increase ambient noise levels in the project vicinity above levels existing without the project (refer to Impact Statements 5.7-1, 5.7-3, and 5.7-4);

- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing

or working in the project area to excessive noise levels (refer to Section 8.0, *Effects Found Not To Be Significant*); and

- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels (refer to Section 8.0, *Effects Found Not To Be Significant*).

SIGNIFICANCE OF CHANGES IN STATIONARY SOURCE NOISE LEVELS

Stationary noise associated with the operation of any facility within a project area is considered significant if it would create, maintain, cause, or allow the sound level, when measured on any other property, to exceed the allowable sound levels, as identified in CZLUO Chapter 23.06 (Operational Standards), and CZLUO Sections 23.06.040 (Noise Standards) and 23.06.050 (Noise Level Measurement).

VIBRATION THRESHOLDS

With respect to ground-borne vibration from construction activities, the Federal Transit Administration (FTA) has adopted guidelines/recommendations to limit ground-borne vibration based on the age and/or condition of the structures that are located in close proximity to construction activity.

A technical discussion of construction activity-related vibration is provided in the FTA publication titled *Transit Noise and Vibration Impacts Assessment* (May 2006). As described therein, for a building that is constructed with reinforced concrete with no plaster, a vibration level of up to 0.50 inch per second (in/sec) (102 velocity decibels [VdB]) is considered safe and would not result in any construction vibration damage. With respect to structures that are considered "well engineered," a ground-borne vibration damage threshold criterion of 2.0 inch-per-second PPV. The analysis has assumed a conservative threshold of 0.2 inch-per-second PPV.

5.7.5 IMPACTS AND MITIGATION MEASURES

As discussed in detail in Section 5.0, *Environmental Analysis*, for purposes of the following impact analyses, "Sustainable Water Facility" (SWF) involves the built and operational Project components, whereas "Mitigation Measures (Project modifications)" involve proposed Project modifications in compliance various SWF mitigation measures.

IMPACT 5.7-1 CONSTRUCTION-RELATED IMPACTS

- **WOULD PROJECT CONSTRUCTION ACTIVITIES RESULT IN SIGNIFICANT TEMPORARY NOISE IMPACTS TO NEARBY NOISE SENSITIVE RECEPTORS?**

Impact Analysis:

SUSTAINABLE WATER FACILITY

The SWF required general construction activities including clearing, grading (nominal), excavating, trenching, pipe installation, placement of backfill, and installation of other limited equipment/improvements on structural footings and concrete housekeeping pads. Installation of the leachate collection and removal system (LCRS), and the vadose zone monitoring system at the evaporation pond required minimal grading, while the installation of the impermeable liner required removal of the pond's vegetation. Along the evaporation pond's southern berm, an existing spillway was demolished to provide a uniform slope elevation around the pond. Minimal excavation was necessary for the AWTP, since it was housed within containers. Of the approximately 4,630 LF of pipeline, 4,150 LF were installed above grade and 480 LF were installed below grade. The below grade pipelines were installed using both trenching and horizontal directional drilling methods. Refer also to Section 3.5.2, *Project Characteristics – Mitigation Measures (Project Modifications)*. Construction occurred over approximately six months.

Ground-borne noise and other types of construction-related noise impacts typically occur during the initial construction phases. These phases of construction create the highest levels of noise. Typical noise levels generated by construction equipment are shown in Table 5.7-8, *Maximum Noise Levels Generated by Construction Equipment*. Operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance occur due to random incidents, which typically last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts).

Construction activities also cause increase noise along access routes to and from the site due to movement of equipment and workers. However, daily commuting of construction workers does not represent a substantial percentage of current daily traffic volumes along access routes. As the SWF involved construction of water facilities, substantial soil hauling did not occur along local roadways due to the minimal amount of earthmoving and grading activities.

The SWF is subject to compliance with CZLUO Sections 23.06.042 through 23.06.050, which establish standards for acceptable exterior and interior noise levels. Nearby noise-sensitive areas and receptors were intermittently exposed to short-term construction-related noise levels in excess of CZLUO standards. (Refer also to Section 5.3, *Biological Resources*, for further discussion concerning noise impacts to biological resources.) However, construction noise was acoustically dispersed throughout the site and not concentrated in one area near adjacent noise-sensitive receptors. Further, according to CZLUO Section 23.06.042 (Exceptions to Noise Standards), CZLUO Sections 23.06.044 through 23.06.050 standards are not applicable to noise from various exempt sources, including noise sources associated with construction, provided such activities do not take place before 7:00 AM or after 9:00 PM any day except Saturday or Sunday, or before

8:00 AM or after 5:00 PM on Saturday or Sunday. These permitted hours of construction are specified in CZLUO Section 23.06.042 in recognition that construction activities undertaken during daytime hours are typical and do not cause a significant disruption. Given the sporadic nature of noise levels generated during SWF construction and compliance with CZLUO-specified time limits, SWF construction noise impacts are less than significant. Thus, the SWF's short-term construction-related noise impacts are less than significant.

Table 5.7-8
Maximum Noise Levels Generated by Construction Equipment

Type of Equipment	Acoustical Use Factor[1]	Maximum Noise Level at 50 Feet (A-weighted decibels)
Concrete Saw	20	90
Crane	16	81
Concrete Mixer Truck	40	79
Backhoe	40	78
Dozer	40	82
Excavator	40	81
Forklift	40	78
Paver	50	77
Roller	20	80
Tractor	40	84
Water Truck	40	80
Grader	40	85
General Industrial Equipment	50	85

Note
1 – Acoustical Use Factor (percent) Estimates the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.

Source Federal Highway Administration, *Roadway Construction Noise Model (Federal Highway Administration-HEP-05-054)*, January 2006.

SWF Construction-Related Measures/Standards: Compliance with construction-related measures/standards occurred before/during SWF construction, as substantiated in the E-CDP MMRP and summarized below:

- CZLUO Sections 23.06.044 through 23.06.050. As discussed above, according to CZLUO Section 23.06.042 (Exceptions to Noise Standards), the Project's construction-related noise is exempt from CZLUO Sections 23.06.044 through 23.06.050 noise standards.

- In compliance with E-CDP Condition 6F, a noise analysis of the SWF's construction-related was conducted to identify expected construction-related noise levels at nearby sensitive receptors (i.e., the nearest public recreation sites); see analysis above. Refer to

Section 5.3, *Biological Resources*, for further discussion concerning compliance E-CDP Condition 6F and biological resources.

MITIGATION MEASURES (PROJECT MODIFICATIONS)

General construction activities for the Project modifications would require trenching, pipe installation, grading (nominal), hauling, removal of spray evaporators, and installation of other improvements (pump installation, baker tanks installation, etc.). Of the approximately 5,800 LF of pipeline, 5,500 would be installed above grade and 300 LF would be installed below grade. The below grade pipelines would be installed using trenching methods. Refer also to Section 3.5.2, *Project Characteristics – Mitigation Measures (Project Modifications)*. Construction would occur over approximately 12 months; refer also to Section 3.5.2.

Construction noise associated with the mitigation measures (Project modifications) would typically be generated by on-site equipment (trenchers, backhoes, etc.), and mobile trips to and from the Project site (from construction workers, offsite RO concentrate disposal truck rips, etc.). It is noted that daily commuting of construction workers does not represent a substantial percentage of currently daily traffic volumes along access routes. As the Project modifications involve construction of water facilities, substantial soil hauling is not anticipated to occur along local roadways due to the minimal amount of earthmoving and grading activities. However, approximately 2,350 round truck trips would occur during evaporation pond decommissioning ((RO concentrate offsite disposal)) and mechanical evaporator decommissioning. Truck noise levels depend on vehicle speed, load, terrain, and other factors. The effects of construction-related truck traffic would depend on the level of background noise already occurring at a particular receptor site. It is anticipated that construction truck traffic would access the Project site utilizing San Simeon Monterey Creek Road. The closest noise-sensitive use to San Simeon Monterey Creek Road is the San Simeon Creek Campground located approximately 75 feet from the San Simeon Monterey Creek Road roadway centerline. However, once on the Project site, the trucks would utilize internal roadways that would be further away from the sensitive receptors. Construction-related truck trips would occur during the allowable hours for construction specified in CZLUO Section 23.06.042. These permitted hours of construction are specified in recognition that construction activities undertaken during daytime hours are typical and do not cause a significant disruption. Given the sporadic nature of noise levels generated during construction of Project modifications and following compliance with CZLUO-specified time limits, construction-related noise impacts from the proposed mitigation measures (Project modifications) would be less than significant.

Standards and Regulations:

CZLUO

- Section 23.06.042
- Sections 23.06.042 through 23.06.050

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant Impact.

IMPACT 5.7-2 VIBRATION IMPACTS

- **WOULD PROJECT IMPLEMENTATION RESULT IN SIGNIFICANT VIBRATION IMPACTS TO NEARBY SENSITIVE RECEPTORS?**

Impact Analysis:

SUSTAINABLE WATER FACILITY

Construction-Related Impacts

Project construction can generate varying degrees of groundborne vibration, depending on the construction procedure and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Groundborne vibrations from construction activities rarely reach levels that damage structures.

The types of construction vibration impact include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience any cosmetic damage (e.g., plaster cracks) at distances beyond 30 feet. This distance can vary substantially depending on the soil composition and underground geological layer between vibration source and receiver. In addition, not all buildings respond similarly to vibration generated by construction equipment. For example, for a building that is constructed with reinforced concrete with no plaster, the Federal Transit Administration (FTA) guidelines show that a vibration level of up to 0.50 inch per second (in/sec) (102 velocity decibels [VdB]) is considered safe and would not result in any construction vibration damage. However, a masonry or unreinforced building would experience architectural damage under continuous vibration levels up to 0.20 peak particle velocity (PPV). The vibration produced by construction equipment is presented in Table 5.7-9, *Typical Vibration Levels for Construction Equipment*.

Table 5.7-9
Typical Vibration Levels for Construction Equipment

Equipment	Approximate peak particle velocity at 25 feet (inches/second)	Approximate peak particle velocity at 75 feet (inches/second)
Large bulldozer	0.089	0.0017
Loaded trucks	0.076	0.0015
Small bulldozer	0.003	0.0001
Jackhammer	0.035	0.0015
Caisson drilling	0.089	0.0017

Notes
1. Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Guidelines*, May 2006. Table 12-2.
2. Calculated using the following formula
   $PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$
   where PPV (equip) = the peak particle velocity in in/sec of the equipment adjusted for the distance
   PPV (ref) = the reference vibration level in in/sec from Table 12-2 of the FTA *Transit Noise and Vibration Impact Assessment Guidelines*
   D = the distance from the equipment to the receiver

The Project site is not located within one-half mile of an urban or village reserve line, thus, is exempt from CZLUO Section 23.06.060 (Vibration Standards). Moreover, CZLUO Section 23.06.062 (Exceptions to Standards) specifies that vibration standards of this Chapter are not applicable to vibrations from construction, demolition of structures, surface mining activities, or geological exploration between 7:00 AM and 9:00 PM, or vibrations from moving sources such as trucks and railroads.

Groundborne vibration decreases rapidly with distance. The nearest sensitive receptors are public recreation uses (the San Simeon Creek Campground) located approximately 75 feet west of the Project site, just south of San Simeon – Monterey Creek Road. Construction vehicles traveling along San Simeon –Monterey Creek Road and Van Gordon Creek Road are the closest construction activities that could potentially cause vibration impacts to the public recreation uses. As indicated in Table 5.7-9, based on the FTA data, vibration velocities associated with a loaded truck are 0.0015 inch-per-second PPV at 75 feet from the source of activity. With regard to the SWF, groundborne vibration was generated primarily during site clearing and grading activities on-site and by off-site haul-truck travel. Therefore, as the vibration levels are below the 0.20 inch-per-second PPV significance threshold, the SWF's construction-related vibration impacts are less than significant.

Long-Term Operations

The SWF does not generate ground-borne vibration that is felt at surrounding sensitive receptors. The key AWTP unit processes equipment are contained within six shipping containers. Additionally, the mechanical spray evaporators are mounted on concrete pads and do not produce vibration. No impact would occur in this regard.

MITIGATION MEASURES (PROJECT MODIFICATIONS)

Construction-Related Impacts

As discussed above, construction vehicles traveling along San Simeon - Monterey Creek Road and Van Gordon Creek Road would be the closest construction activities that could potentially cause vibration impacts to the public recreation uses. As indicated in Table 5.7-9, based on the FTA data, vibration velocities associated with a loaded truck are 0.0015 inch-per-second PPV at 75 feet from the source of activity. With regard to the Project modifications, groundborne vibration would be generated primarily during grading and trenching activities on-site, and by off-site haul-truck travel. Therefore, as the vibration levels would be below the 0.20 inch-per-second PPV significance threshold, the Project modification's construction-related vibration impacts would be less than significant.

Operational Impacts

The Project modifications consist of evaporation pond repurposing (i.e., potable water supply storage basin) and offsite RO concentrate disposal (among other changes). The key SWTP unit processes equipment would be housed within a shipping container. No impact would occur in this regard. With regard to the Project modifications, groundborne vibration would be generated primarily during hauling RO concentrate for offsite disposal. RO concentrate disposal trucks traveling along San Simeon - Monterey Creek Road would be the closest operational activities that could potentially cause vibration impacts to the public recreation uses. As indicated in Table 5.7-9, based on the FTA data, vibration velocities associated with a loaded truck are 0.0015 inch-per-second PPV at 75 feet from the source of activity. Therefore, as the vibration levels would be below the 0.20 inch-per-second PPV significance threshold, the Project modification's operational vibration impacts would be less than significant.

Standards and Regulations:

CZLUO

- Section 23.06.060.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant Impact.

IMPACT 5.7-3 OPERATIONAL IMPACTS - STATIONARY SOURCES

- **WOULD THE PROJECT RESULT IN A SIGNIFICANT INCREASE IN LONG-TERM STATIONARY NOISE LEVELS?**

Impact Analysis:

SUSTAINABLE WATER FACILITY

E-CDP Condition 6F requires that an analysis be conducted of the SWF's operational impacts to identify expected operational noise levels at nearby sensitive receptors (i.e., the nearest public recreation sites). The following analysis is provided in compliance E-CDP Condition 6F.

Advanced Water Treatment Plant (AWTP) Site

Noise-producing equipment typically associated with these types of facilities include electrical pump motors, pump filtration systems, and transformers. The wellhead facilities do not include pumps or noise generating equipment and therefore noise associated with the wells would have no impact. Key AWTP processes are pre-packaged and mounted in shipping containers. Ultraviolet (UV) vessels, water tanks, pump skids, air compressors, and self-contained chemical totes are installed outdoors on concrete housekeeping pads. The most significant noise source associated with the AWTP site are the pump skids and air compressors. Table 5.7-10, *AWTP Equipment Reference Noise Levels*, presents the operational noise levels for the AWTP site (including the air compressors and pump skids), as measured by Michael Baker on March 25, 2015.

Table 5.7-10
AWTP Equipment Reference Noise Levels

Site/Type of Equipment	Measured Noise Level at 30 Feet (dBA L_{eq})	Noise Level at 100 feet (dBA L_{eq})[1]	Noise Level at 200 feet (dBA L_{eq})[1]	Noise Level at 260 feet (dBA L_{eq})[1]	Noise Level at 450 feet (dBA L_{eq})[1]
Air Compressor	48.7	38.2	32.2	29.9	25.2
All AWTP equipment running (i.e., air compressors, pump skids, water tanks, etc.)	57.5	47.0	41.0	38.7	34.0

Notes
1. Based on the standard point source noise-distance attenuation factor of 6.0 dBA for each doubling of distance (inverse square law), operational noise impacts are evaluated by Equation 1 for noise attenuation over distance

$$L2 = L1 - 20 \log10 (d_1/d_2)$$

Where:
L1 = known sound level at *d1*
L2 = known sound level at *d2*
d1 = distance of known sound level from point source
d2 = distance of impacted area from point source

The nearest noise sensitive receptor to the AWTP is the San Simeon Creek Campground located approximately 970 feet to the west. As shown in Table 5.7-10, the CZLUO's acceptable daytime exterior noise standard of 50 dBA would not be exceeded at the San Simeon Creek Campground

due to AWTP operations. Therefore, AWTP operations would result in a less than significant impact in this regard.

The nearest biological resource area to the AWTP is the Van Gordon Creek corridor located approximately 260 feet to the west. It is noted that the CZLUO does not establish noise standards for biological resource areas. However, studies indicate that wildlife sensitivity to noise levels ranges from 70 dBA to 95 dBA or more, depending on the species.[1] As noted in Table 5.7-10, noise levels from the AWTP can be up to 57.5 dBA at 30 feet and attenuate to 38.7 dBA at 260 feet. Therefore, noise sensitive open space areas would not be impacted by the AWTP and a less than significant impact would occur in this regard. Also refer to Section 5.3, *Biological Resources*, for further discussion on wildlife and habitat areas.

Mechanical Spray Evaporators

The spray evaporators, located along the west berm of the evaporation pond, include three-sided soundwall enclosures comprised of sound absorption panels with a minimum Sound Transmission Loss (STL) of 33 dB. The spray evaporators are the most significant noise source on the site. To analyze potential operational noise impacts from the spray evaporators on nearby sensitive receptors, Michael Baker conducted noise measurements with the five spray evaporators running simultaneously during typical day and nighttime hours on March 24 and March 25, 2015. Table 5.7-11, *Spray Evaporator Reference Noise Levels*, presents the measured reference noise levels for one and five spray evaporators running.

Table 5.7-11
Spray Evaporator Reference Noise Levels

Type of Equipment	Measured Noise Level at 360 feet (dBA L_{eq})[1]	Noise Level at 400 feet (dBA L_{eq})[2]	Noise Level at 500 feet (dBA L_{eq})[2]	Noise Level at 1,000 feet (dBA L_{eq})[2]	Noise Level at 1,500 feet (dBA L_{eq})[2]
One (1) Evaporator	58.3	57.4	55.4	49.4	45.9
Five (5) Evaporators (running simultaneously)	64.4	63.5	61.5	55.5	52.0

Notes
1. Measurement was taken east of the spray evaporators facing the open side of the enclosures.
2. Based on the standard point source noise-distance attenuation factor of 6.0 dBA for each doubling of distance (inverse square law), operational noise impacts are evaluated by Equation 1 for noise attenuation over distance

$$L2 = L1 - 20\ log10\ (d_1/d_2)$$

Where
L1 = known sound level at *d1*
L2 = known sound level at *d2*
d1 = distance of known sound level from point source
d2 = distance of impacted area from point source

[1] U.S. Department of Transportation Federal Highway Administration, *Synthesis of Noise Effects on Wildlife Populations, Publication No. FHWA-HEP-06-016*, September 2004.

Table 5.7-12, *Spray Evaporator Noise Levels at Sensitive Receptors*, shows the measured noise levels at nearby sensitive receptors/areas with all five spray evaporators running simultaneously. Exhibit 5.7-1 shows the noise measurement locations at the nearby sensitive receptors/areas during the March 24 and March 25, 2015 noise surveys. As shown in Table 5.7-12, the CZLUO's acceptable daytime exterior noise standard of 50 dBA is exceeded at noise measurement locations 1, 2, and 5 (52.2, 51.1, and 53.1 dBA L_{eq}, respectively) with all five spray evaporators running simultaneously. In addition, nighttime noise levels exceeded the CZLUO's acceptable nighttime exterior noise standard of 45 dBA at noise measurement locations 1 and 5 (50.6 and 50.3 dBA L_{eq}, respectively) with all five spray evaporators running simultaneously resulting in a potentially significant impact.

Table 5.7-12
Spray Evaporator Noise Levels at Sensitive Receptors

Site No.	Location	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	Peak (dBA)	Date	Time
Daytime							
1	West side of Van Gordon Creek Road, adjoining San Simeon Creek Campground to the west.	**52.2**	51.3	53.2	71.8	3/24/2015	3:26 PM
2	East side of Van Gordon Creek Road, to the east of the San Simeon State Park Personnel Housing	**51.1**	49.9	52.6	74.3		3:42 PM
3	South of San Simeon Monterey Creek Road directly across from the San Simeon Equestrian Facility.	45.3	44.2	46.5	80.5		4:15 PM
4	South of San Simeon Monterey Creek Road, approximately 85 feet west of the old schoolhouse (1475 San Simeon Monterey Creek Road).	41.8	40.4	43.3	79.8		4:32 PM
5[1]	Atop hill to the northeast of the evaporation pond, approximately 1,290 feet northeast of the evaporators.	**53.1**	52.2	54.1	80.7	3/25/2015	11:28 AM
Nighttime							
1	West side of Van Gordon Creek Road, adjoining San Simeon Creek Campground to the west.	**50.6**	49.8	51.5	68.5	3/24/2015	8:55 PM
3	South of San Simeon Monterey Creek Road directly across from the San Simeon Equestrian Facility.	40.1	39.3	41.1	59.1		9:12 PM
5[2]	North of San Simeon Monterey Creek Road, directly across from the AWTP site entrance gate, approximately 955 feet east of the evaporators.	**50.3**	49.4	51.1	68.6		9:40 PM

Notes
1. This noise measurement did not include water running through the spray evaporators.
2. Different measurement location than the daytime location, although in same vicinity.
BOLD text denotes noise level (dBA L_{eq} only) in excess the CZLUO's acceptable exterior and/or interior noise levels (day and/or nighttime).

Source Michael Baker International, March 24 and March 25, 2015.

The nearest noise sensitive biological resource area to the spray evaporators is the Van Gordon Creek corridor located approximately 400 feet to the east. As previously noted, the CZLUO does not establish noise standards for biological resource areas; however, wildlife sensitivity to noise levels ranges from 70 dBA to 95 dBA or more, depending on the species. As noted in Table 5.7-

11, noise levels from the spray evaporators at 400 feet (approximate distance to the Van Gordon Creek corridor) would be approximate 63.5 dBA. Therefore, noise sensitive biological resource areas would not be impacted by the mechanical spray evaporators and a less than significant impact would occur in this regard. Also refer to Section 5.3 for further discussion concerning noise and biological resource areas.

Given the aesthetic impacts associated with the five mechanical spray evaporators and their enclosures, and since the CZLUO's acceptable daytime exterior noise standard would be exceeded by evaporator operations, Mitigation Measure AES-2 requires their removal. Therefore, with mitigation, the spray evaporator noise would not occur and no impact would occur in this regard.

MITIGATION MEASURES (PROJECT MODIFICATIONS)

Implementation of the proposed mitigation measures (Project modifications) would result in evaporation pond repurposing (i.e., potable water supply storage basin), mechanical spray evaporator removal, offsite RO concentrate disposal, surface water treatment, and modified surface discharge. As the spray evaporators would be removed from the site and the evaporation pond would be repurposed as a potable water supply storage basin, no operational noise would be generated from stationary equipment at the potable water supply storage basin. A surface water transfer pump station is proposed within the potable water supply storage basin; however, this pump would be submerged under water, thus, would not be audible. Stationary noise at the SWTP site would predominantly be generated by the SWTP MF system equipment, including an influent break tank, MF feed pumps, strainer, MF membrane skid, MF backwash tank, MF backwash pumps, MF clean-in-place (CIP) tank, MF CIP pump, compressed air system, and MF pretreatment and cleaning chemical feed system. However, the MF system equipment would be housed in a shipping container (similar to the operating equipment at the SWF). The noise generated by the SWTP would be similar to the noise levels in Table 5.7-10. The proposed SWTP equipment would adjoin the operating SWF facility to the east, and would operate simultaneously. Based on the noise levels in Table 5.7-10, the combined noise levels from the simultaneous operation of the SWF facility and proposed SWTP would be approximately 60.5 dBA at a distance of 30 feet. Noise levels at the nearest sensitive receptor (San Simeon Creek Campground located approximately 970 feet to the west) would be approximately 30.0 dBA, which is well below the CZLUO allowable noise standards. Therefore, the combined noise levels from the simultaneous operation of the SWF facility and proposed SWTP would result in a less than significant impact.

As discussed above, the Van Gordon Creek corridor located approximately 260 feet to the west of the AWTP would not be impacted by AWTP operations. As the proposed operational equipment for the SWTP would be similar to the SWF and noise would attenuate over distance (i.e., the simultaneous operation of the SWF and SWTP would be approximately 42.0 dBA at a distance of 260 feet), impacts would remain less than significant. Also refer to Section 5.3, *Biological Resources*, for further discussion on wildlife and habitat areas.

SWF Construction-Related Measures/Standards: In compliance with E-CDP Condition 6F, an analysis of the Project's operational noise effects on nearby noise-sensitive receptors, including public recreation and biological resources, has been conducted, as presented above.

Standards and Regulations:

CZLUO

- Sections 23.06.042 through 23.06.050

Mitigation Measures: Refer to Mitigation Measure AES-2.

Level of Significance: Less Than Significant With Mitigation Incorporated.

IMPACT 5.7-4 OPERATIONAL MOBILE SOURCE IMPACTS

- **WOULD THE PROJECT GENERATE TRAFFIC THAT COULD SIGNIFICANTLY CONTRIBUTE TO EXISTING TRAFFIC NOISE IN THE AREA OR EXCEED THE COUNTY'S ESTABLISHED STANDARDS?**

Impact Analysis:

SUSTAINABLE WATER FACILITY

The SWF does not include any land uses or development that induce substantial operational vehicular trips to or from the site. Operation and maintenance for the water facilities requires up to two employees at the site daily to visually inspect and maintain the AWTP. In addition, although movement of construction equipment and workers to and from the site would temporarily increase traffic volumes along access routes during construction, daily commuting of construction workers would not represent a substantial percentage of current daily traffic volumes along access routes. Evaporation pond maintenance would require one truck trip every ten years for the removal of the buildup of solids and would also not represent a substantial percentage of daily traffic volumes. Due to the nominal amount of short-term construction and operational vehicle trips associated with the SWP, mobile noise sources would generate nominal noise levels. A less than significant impact would occur in this regard.

MITIGATION MEASURES (PROJECT MODIFICATIONS)

As a result of the Project modifications, a total of ten truck trips per day (limited to operating within the SWF site between the hours of 7:00 AM and 7:00 PM) would be needed to transport the RO concentrate to Kettleman Hills for offsite disposal. However, ten daily truck trips would not represent a substantial percentage of current daily traffic volumes along access routes. Additionally, operating and maintaining the SWTP would require only two onsite staff. Combined, these would result in a total of approximately 24 daily round trips. Based on these

estimated operational traffic volumes, mobile traffic patterns would remain similar to the current operating conditions along nearby roadways as a result of the mitigation measures (Project modifications). Therefore, the SWF and Project modifications combined would result in a less than significant impact from mobile noise sources.

Standards and Regulations: There are no relevant standards or regulations.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant Impact.

5.7.6 CUMULATIVE IMPACTS

- **WOULD THE PROJECT, COMBINED WITH OTHER CUMULATIVE DEVELOPMENT CAUSING RELATED IMPACTS, RESULT IN SIGNIFICANT CUMULATIVE NOISE IMPACTS?**

Impact Analysis: For purposes of noise analyses, cumulative impacts are considered for related projects proposed throughout the North Coast Planning Area, and according to the WMP; see Section 4.0, *Basis of Cumulative Analysis*. Cumulative projects would have the potential to noise at their respective sites, since they would involve new stationary and mobile noise sources.

As summarized above, construction activities and long term operations and maintenance activities associated with the WMP improvements could expose persons to or generate noise levels in excess of standards established in SLO County's noise element or noise ordinance. Noise levels would vary during the construction period and WMP improvements could result in permanent increases in ambient noise levels. Analysis has concluded that implementation of the recommended mitigation and compliance with SLO County Code requirements would reduce construction and long term operation noise impacts associated with the WMP improvements to less than significant.

Construction activities associated with the Project and cumulative projects may overlap, resulting in construction noise in the local area. However, construction noise impacts primarily affect the areas immediately adjacent to the construction site. The closest cumulative project to the Project site is a minor use permit associated with a mobile home and barn along Exotic Garden Drive, located approximately 0.25 miles from the Project site. While this cumulative project is located within the Project vicinity, each project would be required to comply with the County's noise limitations on allowable hours of construction. Thus, the Project would not contribute to construction-related cumulative impacts and impacts in this regard are not cumulatively considerable.

Operations of each cumulative project would require separate discretionary approval and CEQA assessment, which would address potential noise impacts and identify necessary attenuation measures, where appropriate. Additionally, as noise dissipates as it travels away from its source, noise impacts from stationary sources would be limited to each of the respective sites and their vicinities. As noted above, the nearest related project is approximately 0.25 miles away. At this distance, the Project's operational noise would not interact with any cumulative project. Further, stationary noise sources would be limited in their impacts as the cumulative projects and proposed Project would be separated by distance, intervening structures, and topography. Due to site distances and intervening topography, cumulative stationary noise impacts would be less than significant. Thus, the Project would not contribute to cumulative impacts and impacts in this regard are not cumulatively considerable.

Standards and Regulations:

CZLUO

- Sections 23.06.042 through 23.06.050.

Mitigation Measures: No mitigation is required.

Level of Significance: Less Than Significant Impact.

5.7.7 SIGNIFICANT UNAVOIDABLE IMPACTS

Project implementation would result in less than significant noise impacts.

5.7.8 SOURCES CITED

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