

3.2.13 Noise

3.2.13.1 Overview

In addition to this introductory information, this section is divided into three subsections. Section 3.2.13.2 provides a regulatory context, Section 3.2.13.3 includes general information regarding existing noise levels at the Project, and Section 3.2.13.3 describes known or potential Project effects on noise.

SSWD prepared this section based on its collection of existing, relevant and reasonably available information on noise. Specifically, SSWD found three source documents regarding noise. These are listed below and cited throughout this section.

- Nevada County 2014
- Placer County 2004
- Yuba County 2010c

3.2.13.2 Regulatory Context

Noise is defined as unwanted sound. It is emitted from many sources including airplanes, factories, railroads, power generation plants and highway vehicles. The magnitude of noise is described by its sound pressure. Because the range of sound pressure varies greatly, a logarithmic scale is used to relate sound pressures to a common reference level, the decibel. Sound pressures described in decibels are called sound pressure levels.

Sound levels, measured using an “A-weighted decibel scale,” are expressed as decibels (dBA). This scale is frequency adjusted to represent the way the human ear responds to sounds. Throughout this analysis, all noise levels are expressed in dBA. The degree of disturbance or annoyance of unwanted sound depends essentially on three things:

- The amount and nature of the intruding noise
- The relationship between the background noise and the intruding noise
- The type of activity occurring where the noise is heard

In considering the first of these factors, it is important to note that individuals have different sensitivity to noise. Loud noises bother some people more than others. In addition, people react differently to various patterns of noise, often depending on whether such noise is viewed as uncomfortable or offensive.

With regard to the second factor, individuals tend to judge the annoyance of an unwanted noise in terms of its relationship to noise from other sources (i.e., background noise). The blowing of a car horn at night when background noise levels are approximately 45 dBA generally would be more objectionable than the blowing of a car horn in the afternoon when background noises might be 55 dBA.

The third factor is related to the interference of noise with activities of individuals. In a 60-dBA environment, normal work activities requiring high levels of concentration may be interrupted by loud noises, while activities requiring manual effort may not be interrupted to the same degree. Time-averaged descriptors are utilized to provide a better assessment of time-varying sound levels. The three most common noise descriptors used in community noise surveys are the equivalent sound level (L_{eq}), percentile distributions of sound levels ($L\%$), and the day-night average sound level (L_{dn}). The L_{eq} is an energy-averaged sound level that includes both steady background sounds and transient short-term sounds. The L_{eq} is equivalent in energy to the fluctuating sound level over the measurement period. The L_{eq} is commonly used to describe traffic noise levels, which tend to be characterized by fluctuating sound levels.

The $L\%$ indicates the sound level exceeded for a percentage of the measurement period. For example, the L_{90} is the sound level exceeded for 90 percent of the measurement period and is commonly used to represent background sound levels. The L_{10} is the sound level exceeded for 10 percent of the measurement period and represents the peak sound levels present in the environment.

The L_{dn} is another descriptor used to evaluate community noise levels. The L_{dn} is a 24-hour average sound level, which includes a 10-dBA penalty added to nighttime sound levels (i.e., 10:00 PM to 7:00 AM) because people tend to be more sensitive to noise during the nighttime. The L_{dn} sound level is commonly used to describe aircraft and train noise levels.

For the State of California, noise intensity is also discussed in terms of Community Noise Equivalent Level, which presents a weighted average noise level that increases the relative significance of evening and nighttime noise. The Community Noise Equivalent Level descriptor is used to evaluate community noise levels, which includes a 5 and 10 dBA penalty added to evening (i.e., 7:00 PM to 10:00 PM) and nighttime sound levels, respectively, in consideration of people's increased sensitivity to noise during the evening and nighttime periods.

County noise standards are generally established based on land use and zoning designations. This is done to ensure that acceptable noise levels are consistent with community development goals and policies. As such, there can be variability between various counties' noise standards, as is the case with Sierra, Yuba and Nevada counties – the counties in which the Project is located – due to their individual development patterns. Table 3.2.13-1 summarizes the Sierra, Yuba and Nevada counties' noise standards.

Table 3.2.13-1. Placer, Yuba and Nevada counties' noise standards.

On-site Sound Level Descriptor	Day (7 AM - 7 PM)	Evening (7 PM - 10 PM)	Night (10 PM - 7 AM)	Day (7 AM - 10 PM)	Night (10 PM - 7 AM)
PLACER COUNTY¹					
Hourly Leq (dBA)	--	--	--	55	45
Maximum	--	--	--	70	65
YUBA COUNTY²					
Hourly Leq (dBA)	55	50	45	--	--
Maximum	65	60	55	--	--

Table 3.2.13-1. (continued)

On-site Sound Level Descriptor	Day (7 AM - 7 PM)	Evening (7 PM - 10 PM)	Night (10 PM - 7 AM)	Day (7 AM - 10 PM)	Night (10 PM - 7 AM)
NEVADA COUNTY³					
Hourly Leq (dBA)	55	50	40	--	--
Maximum	75	65	55	--	--

¹ Placer County Noise Ordinance (Placer County 2004)

² Yuba County Noise Ordinance Code (Yuba County 2010c)

³ Nevada County General Plan, Chapter 9 (Nevada County 2014a)

3.2.13.3 Project-Specific Noise Information

The Project is located in a remote area, away from residential or commercial development. Generally, noise from the Camp Far West Powerhouse at the base of the Camp Far West Dam is the main source of ongoing Project noise but occurs at very low levels and is mostly underground or contained within a concrete building.

3.2.13.4 Known or Potential Project Effects

Provided below is a list of known or potential Project effects on noise. The list was developed based on responses to SSWD’s PAD Information Questionnaire and SSWD’s current understanding of the issues.

- From Responses to SSWD’s PAD Information Questionnaire:
 - Respondents to SSWD’s Questionnaire did not identify any specific known or potential effects of the Project on noise.
- From SSWD:
 - Effects of proposed new Project construction on noise levels.

3.2.13.5 List of Attachments

There are no attachments to this section.

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