

## C.8 Noise

Presented within this section is information on ambient noise conditions in the vicinity of the Littlerock Reservoir, truck haul routes, and sediment disposal locations associated with the proposed action (Project) and alternatives. Potential noise impacts associated with construction and operation of the Project is based on the evaluation of exposure of persons to or the generation of noise levels in excess of established standards. Section C.8.1 provides the existing setting, including background information on noise, the noise environment of the Project area, and sensitive receptors. Section C.8.2 describes the existing noise standards and regulations applicable to the Project.

### C.8.1 Affected Environment

The potential effects of Project-related noise on wildlife are analyzed in Section C.3, Biological Resources. As discussed below in Section C.8.1.4, no sensitive receptors are located within the Reservoir or proximate to the quarry sediment disposal sites. Therefore, the area of study analyzed within this section, with respect to temporary noise or vibration generated by the Project or alternatives, is haul truck roadways and the proposed Palmdale Water District (PWD) sediment disposal/holding site. That is because these are the only Project areas containing sensitive receptors.

#### C.8.1.1 Fundamentals of Environmental Acoustics

The assessment of noise impacts uses specific terminology and descriptors not commonly used in everyday conversation. Therefore, to assist in a thorough understanding of the subsequent analysis, Table C.8-1 provides definitions for technical terminology utilized.

Term	Definition
Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
A-Weighted Sound Level (dBA)	The sound level in decibels as measured on a sound level meter using the A weighted filter network. The A-weighted filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
Ambient Noise Level	The composite noise from all sources resulting in the normal, existing level of environmental noise at a given location. The Leq, as defined below, typically defines the ambient level.
Equivalent Noise Level (Leq)	The average A-weighted dB level, on an equal energy basis, during the measurement period.
Maximum Noise Level (Lmax)	The maximum noise level during a sound measurement period.
Minimum Noise Level (Lmin)	The minimum noise level during a sound measurement period.
Percentile Noise Level (Ln)	The noise level exceeded during <i>n</i> percent of the measurement period, where <i>n</i> is a number between 0 and 100 (e.g., L90)
Community Noise Equivalent Level (CNEL)	The average sound level over a 24 hour period, with a penalty of 5 dB added between 7 pm and 10 pm. and a penalty of 10 dB added for the nighttime hours of 10 pm to 7 am.

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

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

In most cases, typical noise produces effects in the first two categories, being subjective effects and interference with activities only. An example of physiological effects of noise may include workers in industrial plants that might experience physiological effects of noise. No satisfactory way exists to measure the subjective effects of noise, or to measure the corresponding reactions of annoyance and dissatisfaction. This lack of a common standard is due primarily to the wide variation in individual thresholds of annoyance and habituation to noise. Thus, an important way of determining a person's subjective reaction to a new noise is by comparison with the existing or "ambient" environment to which that person has adapted.

Community noise levels are usually closely related to the intensity of nearby human activity. Noise levels are generally considered low when ambient levels are below 50 dBA, moderate in the 50-65 dBA range, and high above 65 dBA (FTA, 2006).

Typical Leq daytime noise levels are:

- 35 dBA or below in a rural or wilderness area,
- 50 to 60 dBA in small towns or wooded or lightly used residential areas,
- 75 dBA in busy urban areas, and
- 85 dBA near major freeways and airports.

Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, high noise levels are nevertheless considered to be adverse to public health. In general, the more the level or the tonal (frequency) variations of a noise exceed the existing ambient noise level or tonal quality, the less acceptable the new noise will be, as judged by the exposed individual. When comparing sound levels from similar sources (for example, changes in traffic noise levels), a 3-dBA increase is considered to be a just-perceivable difference, 5 dBA is clearly perceivable, and 10 dBA is considered a doubling in perceived loudness.

### **C.8.1.2 Fundamentals of Environmental Vibration**

Vibration is a phenomenon related to noise, where common sources include trains, large vehicles on rough roads, and construction activities such as blasting, pile-driving, and operating heavy earth-moving equipment (FTA 2006). Vibration is defined as the mechanical motion of earth or ground, building, or other type of structure, induced by the operation of any mechanical device or equipment located upon or affixed thereto. Vibration generally results in an oscillatory motion in terms of the displacement, velocity, or acceleration of the ground or structure(s) that causes a normal person to be aware of the vibration by means such as, but not limited to, sensation by touch or visual observation of moving objects.

The groundborne energy of vibration has the potential to cause structural damage and annoyance; it can be felt outdoors, but the perceived intensity of vibration effects are much greater indoors due to the shaking of structures. Several land uses are sensitive to vibrations, and include hospitals, libraries, residential areas, schools, and churches.

### C.8.1.3 Ambient Noise Conditions in the Project Area

Ambient noise at Littlerock Reservoir is primarily created by birds chirping, wind noise, and periodic noise from recreationists and concessionaire activities. At residential receptor locations, the dominant noise source along the haul truck transportation routes and PWD disposal property is roadway traffic. In general, the proposed truck route areas are predominantly open space or rural residential lands where existing noise levels are generally low.

Six short-term (15 minute) noise measurements were conducted to document and provide a reference of the ambient noise conditions of the Reservoir and at residential receptor locations near haul truck routes. The locations of these noise measurements are shown in Figure C.8-1. Four of these noise measurements were taken at the nearest residential receptors to the haul truck routes and PWD disposal property. No sensitive receptors are located proximate to quarry sites proposed for sediment disposal. The results of these measurements are shown in Table C.8-2.

Table C.8-2. Ambient Noise Measurement Results							
No.	Description	Measurement					Notes
		Time	Leq	Lmin	Lmax	L90	
1	Reservoir bed at Rocky Point.	8:00 a.m. – 8:15 a.m.	22.1	11.2	29.4	22.0	Primary noise source was birds chirping.
2	Access road terminus below the dam at Palmdale Ditch/Little Rock Creek.	8:30 a.m. – 8:45 a.m.	24.0	12.6	38.3	23.7	Primary noise source was birds chirping. Secondary noise sources were distant dog barks and one helicopter pass-by.
3	East side of Cheseboro Road south of Mt. Emma Road at residential receptor 75-100' from center of nearest travel lane.	9:00 a.m. – 9:15 a.m.	41.2	22.4	55.6	36.7	Primary noise source was distant passenger vehicle traffic on Mt. Emma Road and birds chirping.
4	West side of 47th Street north of Barrel Springs Road at residential receptor 75-100' from center of nearest travel lane.	9:30 a.m. – 9:45 a.m.	43.3	26.6	60.7	41.1	Primary noise source was infrequent passenger vehicle traffic on 47th Street and Barrel Springs Road.
5	West end of PWD property on 47th Street near residential receptors.	10:10 a.m. – 10:25 a.m.	42.4	25.1	45.8	38.9	Primary noise sources were infrequent and distant traffic on 47th Street and dog barking. Secondary noise source was distant general aviation pass-by.
6	West side of Cheseboro Road north of aqueduct at residential receptor 75-100' from center of nearest travel lane.	10:35 a.m. – 10:50 a.m.	44.7	26.5	61.8	41.8	Primary noise source was infrequent passenger vehicle traffic on Cheseboro Road and dog barking.

Notes: All measurements are in dBA and were taken on Wednesday, September 17, 2014 using a Quest Technologies Model 2800 Impulse Integrating Sound Level Meter. During each measurement, the sound meter microphone was covered with a windscreen to eliminate wind noise as part of the ambient condition measurements. Due to regular strong gusts, wind noise generally exceeded the measured Leq and L90 presented. Additionally, no water inflow/outflow was occurring at locations 1 and 2 during measurements.

### C.8.1.4 Sensitive Receptors

A land use survey was conducted to identify any potentially sensitive receptors (e.g., schools, residences, and recreational facilities) in the general vicinity of the Reservoir, Project truck routes, and sediment disposal locations. The surrounding area immediately adjacent to Littlerock Reservoir is recreational use

area, and does not contain any residential structures. A detailed land use inventory is provided in Section C.9 (Recreation and Land Use). Scattered single-family homes, mobile homes, and residential ranches are located along Cheseboro Road, Pearblossom Highway, and 47<sup>th</sup> Street segments of the proposed haul truck routes. In addition, residential homes are located immediately west of the PWD disposal property. No sensitive receptors are located within 0.5 mile of the quarry disposal areas. The nearest sensitive receptors sites to Project activities are reflected in Figure C.8-1, noise measurement locations 3 through 6.

The haul truck routes would traverse lands within the City of Palmdale and unincorporated Los Angeles County. Portions of the routes that are within the City of Palmdale include the following:

- Cheseboro Road (east side) approximately 1,000 feet of south of Pearblossom Highway.
- Pearblossom Highway between Cheseboro Road and Avenue T.
- Avenue T between Pearblossom Highway and Quarries.

## **C.8.2 Regulatory Framework**

Table C.8-3 provides a list of plans and policies that are applicable to noise and includes a discussion of the Project’s consistency with each plan or policy.

<b>Table C.8-3. Consistency with Applicable Noise-Related Plans and Policies</b>		
<b>Plan/Policy</b>	<b>Consistency</b>	<b>Explanation</b>
Los Angeles County Noise Control Ordinance (Ordinance Title 12, Chapter 12.08)	Yes	Noise levels from Project activities would attenuate to below dBA performance standards at adjacent residential receptors and all activities would occur within allowable construction hours.
City of Palmdale General Plan Noise Element – Policy N1.1.3	Yes	The Project does not include any temporary or permanent stationary noise sources within the City of Palmdale
City of Palmdale General Plan Noise Element – Policy N1.2.2	Yes	Annual sediment removal and restoration/maintenance activities would occur only between 7:00 a.m. to 7:00 p.m., up to 6 days a week (no activities occurring on Sundays or federal holidays)
City of Palmdale General Plan Noise Element – Policy N1.2.4	Yes	SPCs NOI-1 and NOI-2 ensure any potential conflicts of intermittent noise sources to residential locations along the Project truck route and PWD sediment storage site would be less than significant
City of Palmdale Municipal Code, Chapter 8.28, Section 8.28.030	Yes	Annual sediment removal and restoration/maintenance activities would occur only between 7:00 a.m. to 7:00 p.m., up to 6 days a week (no activities occurring on Sundays or federal holidays)

Source: Los Angeles County, 2014b; City of Palmdale, 1993; City of Palmdale, 2014

### **Federal**

There are no federal noise standards that directly regulate environmental noise. Table C.8-4 provides a summary of recommended noise levels for protecting public health and welfare with an adequate margin of safety. With regard to noise exposure and workers, the federal Occupational Safety and Health Administration (OSHA) establishes regulations to safeguard the hearing of workers exposed to occupational noise (29 CFR Section 1910.95, Code of Federal Regulations).

**Table C.8-4. Examples of Protective Noise Levels Recommended by U.S. EPA**

Effect	Maximum Level 24-hour Leq	Exterior or Interior Area
Hearing loss	70 dBA	All areas.
Outdoor activity interference and annoyance	55 dBA	Outdoors in residential areas and farms and other outside areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	55 dBA	Outdoor areas where people spend limited amounts of time, such as schoolyards, playgrounds, etc.
Indoor activity interference and annoyance	45 dBA	Indoor residential areas.
	45 dBA	Other indoor areas with human activities such as schools, etc.

Source: USEPA, 1974.

**State**

California Office of Safety and Health Administration (Cal/OSHA) also regulates employee noise exposure, as mandated by Title 8 of the California Code of Regulations, Group 15, Article 105 §§ 5095-5100. Additionally, a Hearing Conservation Program must be instituted when employees are exposed to noise levels of an 8-hour, time-weighted average at or greater than 85 dBA.

The California Office of Planning and Research has developed guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. These CNEL noise recommendations are listed in Table C.8-5, but are not regulation. Instead, they are provided as a reference for local jurisdictions when creating General Plan and local noise policy (OPR, 2003).

**Table C.8-5. Land Use Compatibility for Community Noise Environment Local Regulations and Standards**

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE – CNEL (dBA)							
	50	55	60	65	70	75	80	
Schools, Libraries, Churches, Hospitals, Nursing Homes								
Playgrounds, Neighborhood Parks								
	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.							
	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 generally should not be undertaken.							

Source: OPR, 2003.

**Local**

- **County of Los Angeles General Plan.** The Los Angeles County General Plan is the foundational document for all community-based plans that serve the unincorporated areas. Both the approved General Plan (1974) and public review draft of the 2035 General Plan (2014) were reviewed for noise goals and policies applicable to the Project (County of Los Angeles 1974 and 2014a). Neither version of the General Plan contains applicable goals or policies pertaining to noise from the Project.
- **County of Los Angeles Noise Control Ordinance (Ordinance Title 12, Chapter 12.08).** The County’s Noise Ordinance also includes construction noise restrictions that apply to residential and commercial properties, as presented in Table C.8-6. Furthermore, it is required that all mobile and stationary internal-combustion-engine powered equipment or machinery to be equipped with suitable exhaust and air-intake silencers in proper working order (Los Angeles County, 2014b).

<b>Table C.8-6. County Construction Noise Limits, dBA</b>			
<b>Time</b>	<b>Single-Family Residential</b>	<b>Multi-Family Residential</b>	<b>Semi-Residential/Commercial</b>
<b>Mobile Equipment (non-scheduled, intermittent, short-term operation – less than 10 days)</b>			
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	75	80	85
Daily, 8:00 p.m. to 7:00 a.m., and all day Sunday and legal holidays	60	64	70
<b>Stationary Equipment. Maximum noise level for repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment</b>			
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	60	65	70
Daily, 8:00 p.m. to 7:00 a.m., and all day Sunday and legal holidays	50	55	60

Source: Los Angeles County, 2014

- As shown in Table C.8-4, the maximum noise level limits from mobile construction equipment between the hours of 7:00 a.m. and 8:00 p.m. are 75 dBA at the property line of single-family residential areas, 80 dBA at multi-family residential areas, and 85 dBA at semi-residential and commercial areas. In addition, Section 12.08.44 of the County Noise Ordinance prohibits non-emergency construction activity between the weekday hours of 7:00 p.m. and 7:00 a.m., or at any time on Sundays or holidays.
- **City of Palmdale General Plan.** The Palmdale General Plan Noise Element is intended to comply with the State mandate and to set guidelines to prevent noise and land use conflicts. A review of the Noise Element identified the following applicant General Plan policies related to Project noise (City of Palmdale, 1994):
  - **Policy N1.1.3:** When proposed stationary noise sources could exceed an exterior noise level of 65 dBA CNEL at present, or could impact future noise sensitive land uses, require preparation of an acoustical analysis and mitigation measures to reduce noise levels to no more than 65 dBA CNEL exterior and 45 dBA CNEL interior; if the noise level cannot be reduced to these thresholds through mitigation, the new noise source should not be permitted.
  - **Policy N1.2.2:** Restrict construction hours during the evening, early morning and Sundays.

- **Policy N1.2.4:** Where deemed appropriate based upon available information, acoustical analysis and appropriate mitigation for noise-sensitive land uses should be required in areas which may be adversely impacted by significant intermittent noise sources.
- **City of Palmdale Noise Ordinance.** The acceptable levels are presented in Table C.8-6. The City of Palmdale Municipal Code, Chapter 8.28, Section 8.28.030, specifies that construction noise shall not occur between the hours of 8:00 p.m. and 6:30 a.m. in any residential zone or within 500 feet of any residence (City of Palmdale, 2014).

### C.8.3 Issues Identified During Scoping

There were no noise-related issues raised by the public or agencies during the public scoping period, refer to Appendix E.

### C.8.4 Environmental Consequences

**Significance Criteria.** The following significance criteria for noise were derived from the applicable construction-related local noise regulations, presented above in Tables C.8-4 and C.8-5. Impacts of the Project or alternatives would be considered significant and would require mitigation if:

- **Criterion NOI1:** Predicted sound levels from temporary use of mobile equipment during construction and operational activities would exceed 75 dBA at single-family residences or 85 dBA at semi-residential/commercial receptors.
- **Criterion NOI2:** Predicted sound levels from temporary use of stationary equipment during construction and operational activities would exceed 60 dBA at single-family residences or 70 dBA at semi-residential/commercial receptors.
- **Criterion NOI3:** Noise from temporary use of stationary and mobile equipment during construction and operational activities would occur outside of 7:00 a.m. to 7:00 p.m., or at any time on Sundays or holidays in Los Angeles County or between and 6:30 a.m. and 8:00 p.m. within the City of Palmdale.
- **Criterion NOI4:** Vibration from temporary use of stationary and mobile equipment during construction and operational activities would damage or cause significant nuisance to sensitive receptors.

**Impact Assessment Methodology.** Noise impacts are typically determined by compliance with all applicable noise performance standards and regulations. Because both construction and operational activities of the Project would be short-term and temporary during a calendar year (approximately 3 months), they would not result in a permanent change in ambient noise conditions. Therefore, compliance with temporary construction-related noise standards and regulations is applicable.

Noise impacts on the surrounding community are enforced through local noise ordinances, supported by nuisance complaints and subsequent investigation. It is assumed that all existing regulations to the construction and operation of the Project would be enforced. Although the PWD has pre-emptive jurisdiction over local standards and regulations as a State Water agency, local standards are used in this section to help determine the significance of noise impacts. The Occupational Safety and Health Association (Cal-OSHA in California) regulates noise standards related to on-site worker health and safety (OSHA, 2014). Therefore, an analysis of noise to workers is not required.

To determine potential impacts, the significance criteria identified above were compared against predicted noise levels of Project-related mobile and stationary equipment use in relation to the locations of sensitive receptors described in Section C.8.1.3 (Sensitive Receptors). Impacts are identified

should the applicable noise standards presented in Criteria NOI1 and NOI2 be exceeded by Project-related activities. Additionally, impacts are identified if construction noise would occur outside the allowable hours defined by Los Angeles County and the City of Palmdale in Criterion NOI3.

**C.8.4.1 Proposed Action/Project**

The following section describes the Project’s noise impacts as determined by the thresholds of significance and, where necessary, provides mitigation measures that would serve to reduce adverse impacts.

**Direct and Indirect Effects Analysis**

**Predicted sound levels from temporary use of mobile equipment during construction and operational activities would exceed 75 dBA at single-family residences or 85 dBA at semi-residential/commercial receptors (Criterion NOI1)**

Activities within the Reservoir and Angeles National Forest (ANF) include construction of the grade control structure, annual sediment removal, and annual restoration/maintenance. Because the Reservoir would be closed to the public during these activity periods, noise within the ANF would not be proximate to any residential or recreation receptors. Additionally, as described above in Section C.8.1.4, no residential receptors are located within 0.5 mile of the quarry sediment disposal locations. Sediment disposal activities within the quarries would not expose receptors to noise. Therefore, the analysis below for Impact N-1 is focused on mobile construction noise along the haul truck routes and periodic activities occurring at the PWD sediment staging location that may impact residential receptors within unincorporated Los Angeles County and the City of Palmdale.

***Impact N-1: Noise from mobile sources could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances***

Noise impacts during annual sediment removal/disposal activities would be a function of the construction equipment, the equipment location, and the timing and duration of the noise-generating activities. Typical noise levels generated by individual pieces of mobile construction equipment utilized during Project implementation are displayed in Table C.8-7.

<b>Table C.8-7. Noise Levels from Mobile Construction Equipment</b>	
<b>Construction Equipment</b>	<b>Noise Level (Lmax dBA at 50 feet)</b>
Grader/Spreader	85
Compacter	83
Sweeper	82
Excavator	81
Front End Loader	79
Bulldozer/Backhoe	78
Dump Truck	76
Water Truck	76

Source: FHWA, 2006

The construction noise levels presented in Table C.8-7 represent conservative worst-case Lmax conditions, in which the maximum noise level of the piece of construction equipment is generated (FHWA, 2006). These maximum noise levels would not be continuous throughout the workday at any single receptor location, but instead periodic and short-term. These maximum construction-related

noise levels would attenuate at an average rate of 6 dBA every doubling of distance depending on adjacent surfaces and noise spreading (FTA, 2006). Table C.8-8 provides estimated Lmax noise levels at different distances from the source.

Distance (feet)	Noise Level (dBA, Lmax)
50	76 – 85
100	70 – 79
200	64 – 73
400	58 – 67
800	52 – 61

Source: FTA, 2006

- **Haul Truck Routes.** Haul (dump) trucks would travel along the Project truck routes as sediment is brought to the disposal sites. As noted in Section C.8.1.4, some residential receptors on Cheseboro Road and Pearblossom Highway are located within the City of Palmdale. However, since the City does not have any applicable exterior noise standards for temporary mobile construction noise, the County’s 75 dBA threshold is utilized.

At the closest residential uses along Cheseboro Road, Pearblossom Highway, and 47th Street, temporary haul truck noise would occur periodically 100 feet from residential structures (attenuating to 70 dBA Lmax). While residential setbacks vary along the route, field reconnaissance indicates this is the average structure setback. Therefore, intermittent construction-related Lmax noise levels at residences along the haul truck routes would not exceed the 75 dBA exterior noise threshold for mobile construction equipment noise, as designated by the County of Los Angeles. Additionally, the proposed haul routes are public roadways where daily vehicle use, including large truck trips, regularly subjects these adjacent receptors to exterior Lmax vehicle noise levels similar to that of Project related haul trips. While periodic bursts of noise from haul trucks is estimated to fall below this Lmax threshold, SPC NOI-1 is included to monitor and address any construction noise complaints (refer to Appendix A).

- **PWD Sediment Storage Site.** Residential receptors are located immediately west of the PWD sediment staging property with observed setbacks of 100 feet from the PWD property edge. It should be noted that these residential receptors are located within the City of Palmdale. However, since the City does not have any applicable exterior noise standards for temporary mobile construction noise, the 75 dBA threshold is utilized. All equipment utilized on the site for temporary sediment storage would be mobile.

As shown in Table C.8-8, these receptors could experience periodic exterior noise levels of 70-79 dBA Lmax at the structure exterior, should mobile construction equipment be utilized at the extreme west portion of the PWD property. As discussed in Section B.2.3.2, small amounts of sediment would be stored at this location only for the short term and would always first occur in the northeast portion of the site, ensuring the greatest distance from adjacent residences. The entrance to this property and area where sediment would be stored is located immediately adjacent to 47th Street, conservatively 900 feet from the nearest residential receptor. Activities from this distance are expected to generate exterior noise levels less than 52-61 dBA Lmax at the structure exterior. Therefore, intermittent construction-related Lmax noise levels at the PWD site are not expected to exceed the 75 dBA exterior noise threshold for mobile construction equipment noise at adjacent residential receptors. To ensure this threshold is not exceeded and compliance with the City of Palmdale Municipal Code (Chapter 8.28, Section 8.28.030) is achieved, SPC NOI-2 is included (refer to Appendix A). Additionally,

SPC NOI-1 would include monitoring and addressing noise complaints from activities occurring at the PWD site.

### ***SPCs Applicable to Impact N-1***

**SPC NOI-1 (Prepare a Construction Noise Complaint and Vibration Plan)**

**SPC NOI-2 (PWD Site Buffer Requirements)**

### ***CEQA Significance Conclusion***

With the implementation of SPCs NOI-1 and NOI-2, any potential conflicts of mobile noise sources to residential locations along the Project truck routes and PWD sediment storage site would be less than significant (Class III).

**Predicted sound levels from temporary use of stationary equipment during construction and operational activities would exceed 60 dBA at single-family residences or 70 dBA at semi-residential/commercial receptors (Criterion NOI2)**

***Impact N-2: Noise from stationary sources could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances***

The only stationary construction equipment utilized during the duration of the Project would be temporary use of a soil cement batch plant, rock screener, dewatering pumps, and generators during construction of the grade control structure. These activities would occur entirely within the Reservoir, which would be closed to the public during these activity periods. The grade control structure and restored/ongoing water storage capacity of the Reservoir would not generate any new permanent stationary noise.

### ***CEQA Significance Conclusion***

Temporary noise generated by stationary construction equipment would not impact any sensitive receptors. As the Reservoir would be closed during grade control structure construction and annual sediment removal, stationary construction noise would not impact park users and would be less than significant (Class III).

**Noise from temporary use of stationary and mobile equipment during construction and operational activities would occur outside of 7:00 a.m. to 7:00 p.m., or at any time on Sundays or holidays in Los Angeles County or between and 6:30 a.m. and 8:00 p.m. within the City of Palmdale (Criterion NOI3)**

***Impact N-3: Temporary construction activities may occur outside allowable hours and substantially disturb sensitive receptors***

Construction of the grade control structure would occur entirely within the ANF and is not subject to allowable construction hours specified by Los Angeles County or City of Palmdale. As described in Section B.2.2, the grade control structure is currently estimated to take approximately 20 weeks to complete with most activities typically occurring between 7:00 a.m. to 7:00 p.m., 6 days per week (no work on Sundays or federal holidays). Temporary night construction may be necessary during large soil cement pours. However, the likelihood of this occurrence is considered low. No work would be permitted outside of these normal times/days without prior written approval from the Forest Service.

As discussed in Section B.2.3, annual sediment removal and restoration/maintenance activities would occur only between 7:00 a.m. to 7:00 p.m., up to 6 days a week (no activities occurring on Sundays or federal holidays). Therefore, these activities would be in full compliance with the allowable construction hours specified by the Los Angeles County Noise Ordinance, City of Palmdale General Plan, and City of Palmdale Municipal Code.

### ***CEQA Significance Conclusion***

All construction activities would be in full compliance with the allowable construction hours specified by the Los Angeles County Noise Ordinance, City of Palmdale General Plan, and City of Palmdale Municipal Code. Any activities occurring within the ANF outside normal times/days would occur only with prior written approval from the Forest Service. Therefore, less than significant impacts would occur (Class III).

### **Vibration from temporary use of stationary and mobile equipment during construction and operational activities would damage or cause significant nuisance to sensitive receptors (Criterion NOI4)**

Activities within the Reservoir during construction of the grade control structure, annual sediment removal, and annual restoration/maintenance would occur entirely within the ANF and would not be proximate to any residential receptors. The Reservoir would be closed to the public during these activity periods. Additionally, as described above in Section C.8.1.4, no residential receptors are located within 0.5 mile of the quarry sediment disposal locations. Therefore, the analysis below for Impact N-4 is focused on vibration from haul truck trips and periodic activities within the PWD sediment staging location that may impact residential receptors within unincorporated Los Angeles County and the City of Palmdale.

### ***Impact N-4: Vibration from temporary construction equipment use could substantially disturb sensitive receptors***

Typically, groundborne vibrations generated by man-made activities attenuate rapidly with distance from the source of the vibration. Construction-related vibration is usually confined to short distances (i.e., 500 feet or less) from the source (FTA, 2006).

Heavy truck trips could produce short-term groundborne vibration occurrences at residential receptors located along Cheseboro Road, Pearblossom Highway, and 47th Street. Due to the amount of heavy truck traffic currently occurring on Pearblossom Highway, the primary locations of concern would be residences along Cheseboro Road and 47th Street. The main cause of vibration during transport would be uneven road surfaces. The level of vibration depends upon the vehicle speed and weight. Loaded and unloaded haul truck weight would remain fairly static throughout annual sediment removal. Reducing speeds on the haul truck routes may slightly reduce the potential for vibration, but could in turn create traffic flow and safety hazards from speeds below the posted speed limit. Based on a review of the local roadway network between the Reservoir and quarries, no alternative routes offer haul trucks less sensitive roadways. Therefore, while few options are available to reduce the potential for adverse temporary vibration from haul trucks on these public roadways, SPC NOI-1 is proposed to monitor and address any vibration complaints from haul trucks and heavy equipment use.

Localized vibration may also occur within the PWD sediment storage site from haul truck ingress/egress and sediment stockpiling/removal activities. The implementation of SPC NOI-2 would ensure on-site construction equipment use within the PWD sediment storage site would not occur within 500 feet of

any residential structures. Furthermore, SPC NOI-1 is proposed to monitor complaints of any construction-related vibration within the PWD site.

#### ***SPCs Applicable to Impact N-4***

**SPC NOI-1 (Prepare a Construction Noise Complaint and Vibration Plan)**

**SPC NOI-2 (PWD Site Buffer Requirements)**

#### ***CEQA Significance Conclusion***

With the implementation of SPCs NOI-1 and NOI-2, vibration impacts from Project haul trucks to residential locations along the Project truck routes and activities within the PWD sediment storage site would be less than significant (Class III).

### **C.8.4.2 Alternative 1: Reduced Sediment Removal Intensity Alternative**

#### **Direct and Indirect Effects Analysis**

**Predicted sound levels from temporary use of mobile equipment during construction and operational activities would exceed 75 dBA at single-family residences or 85 dBA at semi-residential/commercial receptors (Criterion NOI1)**

Alternative 1 would result in identical activities within the Reservoir and the ANF as the Project. These activities would not be proximate to any residential receptors and the Reservoir would be closed to the public during these activity periods. Additionally, as described above in Section C.8.1.4, no residential receptors are located within 0.5 mile of the quarry sediment disposal locations. Therefore, the analysis below is focused on noise from haul truck trips and periodic activities occurring at the PWD sediment staging location under Alternative 1.

#### ***Impact N-1: Noise from mobile sources could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances***

Peak noise levels during annual sediment removal along the haul truck routes and at the PWD site would be identical to that described for the Project. However, by starting the initial sediment removal period on July 1 (annually), instead of after Labor Day, the overall daily frequency of noise would be reduced through an overall reduction in the number of daily haul trips. It should be noted that while there may be a reduction in the number of daily haul trips, the overall number of days that activities would occur is increased into the months of July and August. Therefore, Alternative 1 would reduce the amount of mobile noise occurring per day, but would increase the overall number of days noise would be generated annually.

While estimated Lmax noise levels from haul truck trips would be below 75 dBA Lmax at receptors, SPC NOI-1 would also be required for Alternative 1 to monitor and address any construction noise complaints. Furthermore, SPC NOI-2 would be required to ensure intermittent construction-related Lmax noise levels at the PWD site would not exceed 75 dBA at adjacent receptors. Additionally, SPC NOI-1 would include monitoring noise complaints from activities occurring at the PWD site.

#### ***SPCs Applicable to Impact N-1***

**SPC NOI-1 (Prepare a Construction Noise Complaint and Vibration Plan)**

**SPC NOI-2 (PWD Site Buffer Requirements)**

### ***CEQA Significance Conclusion***

With the implementation of SPCs NOI-1 and NOI-2 as part of Alternative 1, any potential conflicts of mobile noise sources to residential locations along the truck route and adjacent to the PWD sediment storage site would be less than significant (Class III).

**Predicted sound levels from temporary use of stationary equipment during construction and operational activities would exceed 60 dBA at single-family residences or 70 dBA at semi-residential/commercial receptors (Criterion NOI2)**

### ***Impact N-2: Noise from stationary sources could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances***

The only stationary construction equipment utilized with Alternative 1 would be identical to that of the Project and occur entirely within the Reservoir only during construction of the grade control structure. The Reservoir would be closed to the public during these activity periods and stationary noise would not occur proximate to any residential receptors. The grade control structure and restored water storage capacity of the Reservoir under Alternative 1 would not generate any new permanent stationary noise.

### ***CEQA Significance Conclusion***

Noise generated by stationary construction equipment would not impact any sensitive receptors. As the Reservoir would be closed during Alternative 1 construction and excavation, stationary construction noise would not impact park users and would be less than significant (Class III).

**Noise from temporary use of stationary and mobile equipment during construction and operational activities would occur outside of 7:00 a.m. to 7:00 p.m., or at any time on Sundays or holidays in Los Angeles County or between and 6:30 a.m. and 8:00 p.m. within the City of Palmdale (Criterion NOI3)**

### ***Impact N-3: Temporary construction activities may occur outside allowable hours and substantially disturb sensitive receptors***

Alternative 1 alters the initial sediment removal period to start on July 1 (annually), instead of after Labor Day, and reduces the weekly construction schedule by one day per week. Under Alternative 1, all activities within Los Angeles County and City of Palmdale would occur between 7:00 a.m. to 7:00 p.m., 5 days per week (no work on Sundays or federal holidays). Any work occurring outside these times/days within the ANF would occur only with prior written approval from the Forest Service.

### ***CEQA Significance Conclusion***

All construction activities would be in full compliance with the allowable construction hours specified by the Los Angeles County Noise Ordinance, City of Palmdale General Plan, and City of Palmdale Municipal Code. Any activities occurring within the ANF outside normal times/days would occur only with prior written approval from the Forest Service. Therefore, less than significant impacts would occur (Class III).

**Vibration from temporary use of stationary and mobile equipment during construction and operational activities would damage or cause significant nuisance to sensitive receptors (Criterion NOI4)**

The analysis below for Impact N-4 is focused on mobile vibration from haul truck trips and periodic activities occurring at the PWD sediment staging location. All other activities that may generate temporary vibration would not occur proximate to any residential receptors.

***Impact N-4: Vibration from temporary construction equipment use could substantially disturb sensitive receptors***

Peak vibration levels under Alternative 1 during annual sediment removal along the haul truck routes and at the PWD site would be identical to that described for the Project. However, by starting the initial sediment removal period on July 1 (annually), instead of after Labor Day, the overall daily frequency of potential vibration from haul trips would be reduced. It should be noted that Alternative 1 does increase the overall number of days where temporary vibration may be generated by increasing the sediment removal period into the months of July and August.

SPC NOI-1 is proposed to monitor complaints of haul truck vibration from Alternative 1. Localized vibration may also occur within the PWD sediment storage site from haul truck ingress/egress and sediment stockpiling/removal activities. The implementation of SPC NOI-2 would ensure on-site construction equipment use within the PWD sediment storage site would not occur within 500 feet of any existing sensitive receptor structures. Furthermore, SPC NOI-1 is proposed to monitor complaints of any construction-related vibration within the PWD site.

***SPCs Applicable to Impact N-4***

**SPC NOI-1 (Prepare a Construction Noise Complaint and Vibration Plan)**

**SPC NOI-2 (PWD Site Buffer Requirements)**

***CEQA Significance Conclusion***

With the implementation of SPCs NOI-1 and NOI-2, vibration impacts from Alternative 1 would be less than significant (Class III).

**C.8.4.3 Alternative 2: No Action/No Project Alternative**

**Direct and Indirect Effects Analysis**

Under the No Action/No Project Alternative, sediment removal activities would not occur and sediment would continue to accumulate upstream of Littlerock Dam at an annual average rate of 38,000 cubic yards per year. PWD would not undertake any activities to remove sediment. Therefore, no noise would be generated.

In the event sediment buildup led to safety issues and required demolition/removal of the Dam, construction activities (and related noise) are expected to be greater than that of the Project or Alternative 1. Demolition of the dam and restoration of the waterway would require extensive construction. Noise from such activities would be similar or greater in intensity and would likely require additional construction years. While many activities would occur within the Reservoir and not proximate to sensitive receptors, the hauling and disposal of up to 2.8 million cubic yards of sediment and dam debris would generate noise similar to, but likely greater in occurrence, than that of the Project or Alternative 1.

In the event the Reservoir became filled with sediment and the Dam was left, it is likely some sort of downstream flood-control channeling would need to be constructed. Noise from such construction activities would be temporary and similar in levels to that occurring during grade control construction.

However, depending on the location of such flood control facilities, construction may occur proximate to downstream residential receptors.

**CEQA Significance Conclusion**

Noise generated from eventual construction activities may not comply with all applicable Los Angeles County and City of Palmdale regulations pertaining to noise and vibration performance standards and allowable construction hours. While such a determination is speculative, the possibility exists. Therefore, noise impacts of the No Action/No Project Alternative are considered significant and unavoidable (Class I).

**C.8.5 Impact Summary**

With the implementation of SPCs NOI-1 and NOI-2, potential noise and vibration impacts associated with the Project and Alternative 1 would be less than significant. While such a determination is speculative for the No Action/No Project Alternative, the possibility exists that significant and unavoidable noise impacts may occur from either necessary downstream flood control improvement construction proximate to residential receptors or significant construction from removal of Littlerock Dam if the Reservoir were allowed to fill up with sediment and Dam safety became compromised.

Table C.8-9 summarizes the direct and indirect environmental impacts of the Project and the alternatives on noise and vibration. Refer to Section C.8.4 for the entire environmental analysis and the full text of recommended mitigation measures.

<b>Table C.8-9. Summary of Impacts and Mitigation Measures – Noise</b>					
Impact	Impact Significance				Mitigation Measures/SPC
	Proposed Action	Alt. 1	Alt. 2: No Action	NFS Lands <sup>1, 2</sup>	
N-1: Noise from mobile sources could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances	Class III	Class III	Class I	No	SPC NOI-1 (Prepare a Construction Noise Complaint and Vibration Plan) SPC NOI-2 (PWD Site Buffer Requirements)
N-2: Noise from stationary sources could substantially disturb sensitive receptors or violate local rules, standards, and/or ordinances	Class III	Class III	Class I	No	None
N-3: Temporary construction activities may occur outside allowable hours and substantially disturb sensitive receptors	Class III	Class III	Class I	Yes	None
N-4: Vibration from temporary construction equipment use could substantially disturb sensitive receptors	Class III	Class III	Class I	No	SPC NOI-1 (Prepare a Construction Noise Complaint and Vibration Plan) SPC NOI-2 (PWD Site Buffer Requirements)

Notes:  
 1 - Indicates whether this impact is applicable to National Forest System lands.  
 2 - Determination based on non-biological resource sensitive receptors.