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## IV. ENVIRONMENTAL IMPACT ANALYSIS

### E. NOISE

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#### INTRODUCTION

As a result of the Initial Study (Appendix B), the City of Los Angeles determined that the proposed project has the potential to cause impacts related to noise. Therefore, this issue has been carried forward for detailed analysis in this environmental impact report (EIR). This section evaluates the potential impacts of the proposed project on noise through examination of documentation of on-site ambient noise levels, modeling of anticipated noise level based on the anticipated construction scenario, and other relevant data.

#### Definitions

**A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

**Community Noise Equivalent Level (CNEL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added to the levels from 7:00 PM to 10:00 PM and 10 dB added from 10:00 PM to 7:00 AM.

**Day-Night Level ( $L_{dn}$ ).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to sound levels from 10:00 PM to 7:00 AM.

**Decibel (dB).** A unitless measure of sound on a logarithmic scale.

**Equivalent Continuous Noise Level ( $L_{eq}$ ).** The mean of the noise level, energy-averaged over the measurement period.

**Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

**Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

#### Characteristics of Sound

Sound is a pressure wave transmitted through the air. It is described in terms of loudness or amplitude (measured in decibels), frequency or pitch (measured in Hertz [Hz] or cycles per second), and duration (measured in seconds or minutes). The standard unit of measurement of the loudness of sound is the decibel (dB). Changes of 1 to 3 dB are detectable under quiet, controlled conditions and changes of less than 1 dBA are usually indiscernible. A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dBA change is perceived as a doubling (or halving) of the sound.

Noise is defined as unwanted sound and is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects, the federal government, State of California, and many local governments have established criteria to protect public health and safety and to prevent disruption of certain human activities.

### Measurement of Sound

Sound intensity is measured through the A-weighted measure to correct for the relative frequency response of the human ear. That is, an A-weighted noise level deemphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies.

Unlike units of measure that are computed with arithmetic functions (such as adding or subtracting numbers), decibels are measured and processed on a logarithmic scale. The logarithmic scale reflects the subjective effects of changes in sound pressure levels; specifically, an increase of 10 dB is 10 times more intense than 1 dB, a 20 dB increase is 100 times more intense, and 30 dB is 1,000 times more intense (Table IV.E-1, *Change in Apparent Loudness*). A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud).

**Table IV.E-1  
Change in Apparent Loudness**

± 3 dB	Threshold of human perceptibility
± 5 dB	Clearly noticeable change in noise level
± 10 dB	Half or twice as loud
± 20 dB	Much quieter or louder

*Source:* Bies, David A., and Colin H. Hansen. 2009. *Engineering Noise Control: Theory and Practice*. 4th ed. New York, NY: Spon Press.

Sound levels decrease as the distance from their source increases. Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by onsite operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance in a hard site environment.<sup>1</sup> Line source noise in a relatively flat environment with absorptive vegetation decreases by 4.5 dB for each doubling of distance.

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L<sub>eq</sub>) or, alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L<sub>50</sub> noise level represents the noise level that is exceeded 50 percent of the time. Half the time the noise level exceeds this level and half the time the noise level is less than this level. This level also represents the level that is exceeded 30 minutes in an hour. Similarly, the L<sub>2</sub>, L<sub>8</sub>, and L<sub>25</sub> values represent the noise

1 Surface type or ground cover is defined as the "hardness" or "softness" of the surrounding area. "Hard site environment" is areas with acoustically hard ground (e.g., pavement or water). Distance attenuation from a line source (i.e., roadway or railway) with a hard site environment is 3 dB per doubling of distance (dB/DD). "Soft site environment" is areas with acoustically soft ground (e.g., lawn or loose dirt or agricultural uses). Ground cover can affect the sound propagation rate by as much as an additional 1.5 dB/DD. (Note that this rate occurs only when both the noise source and the receiver are close to the ground and the terrain between the two is flat and soft.) As a result of this additional attenuation, the line-source sound levels decrease at a rate of 4.5 dB/DD at soft sites.

levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour. These “L” values are typically used to demonstrate compliance for stationary noise sources with a city’s noise ordinance, as discussed below. Other values typically noted during a noise survey are the  $L_{min}$  and  $L_{max}$ . These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and the City require that, for planning purposes, an artificial dB increment be added to quiet time noise levels in a 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level ( $L_{dn}$ ). The CNEL descriptor requires that an artificial increment of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00 PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The  $L_{dn}$  descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher).<sup>2</sup>

### **Effects of Noise**

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions and thereby affecting blood pressure, functions of the heart, and the nervous system. In comparison, extended periods of noise exposure above 90 dBA could result in permanent hearing damage.

### **Vibration Fundamentals**

Vibration is a trembling, quivering, or oscillating motion of the earth. Like noise, vibration is transmitted in waves, but in this case through the earth or solid objects. Unlike noise, vibration is typically of a frequency that is felt rather than heard.

Vibration can be either natural as in the form of earthquakes, volcanic eruptions, sea waves, landslides, or manmade as from explosions, the action of heavy machinery or heavy vehicles such as trains. Both natural and manmade vibration may be continuous such as from operating machinery, or transient as from an explosion.

Humans are generally more perceptive to vibration than structures, humans will normally begin to notice vibration at peak particle velocities of 0.08 inches per second and begin to be annoyed or distracted by vibrations at peak particle velocities of 0.10 inches per second. As with noise, vibration can be described by both its amplitude and frequency. Typically, particle velocity (measured in inches or millimeters per second and/or acceleration (measured in gravities) are used to describe vibration.

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<sup>2</sup>  $L_{dn}$  and CNEL values rarely differ by more than 1 dB. As a matter of practice,  $L_{dn}$  and CNEL values are considered equivalent and are treated as such in this assessment.

## REGULATORY FRAMEWORK

### *Federal*

#### **Noise Control Act of 1972**

The adverse impacts of noise were officially recognized by the federal government in the Noise Control Act of 1972 (42 U.S. Code, § 4901-4918), which serves three purposes:

- Promulgating noise emission standards for interstate commerce;
- Assisting state and local abatement efforts; and
- Promoting noise education and research.

The Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The U.S. Department of Transportation (DOT) assumed a significant role in noise control through its various operating agencies, such as with the Federal Aviation Administration (FAA), which regulates noise generated by aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA), which requires that all rail systems receiving federal funding be constructed and operated in accordance with its regulations and specifications. The Federal Railroad Administration (FRA) sets forth and enforces safety standards, including noise emissions within railroad locomotive cabs. Transit noise is regulated by the FTA, while freeways that are part of the interstate highway system are regulated by the Federal Highway Administration (FHWA). The FHWA has adopted and promulgated noise abatement criteria for highway construction projects. The federal government encourages local jurisdictions to use their land use regulatory authority to site new development to minimize potential noise impacts.

### *State*

#### **Senate Bill 860**

California Senate Bill 860, which became effective January 1, 1976, directed the California Office of Noise Control within the State Department of Health Services to prepare “Guidelines for the Preparation and Content of Noise Elements of the General Plan.”<sup>3</sup> One purpose of these guidelines was to provide sufficient information concerning the noise environment in the community so that noise could be considered in the land use planning process. As part of this publication, Land Use Compatibility Standards were developed in four categories: Normally Acceptable, Conditionally Acceptable, Normally Unacceptable, and Clearly Unacceptable. These categories were based on earlier work done by the U.S. Department of Housing and Urban Development (HUD). The interpretation of the four categories is as follows:

- Normally Acceptable: Specified land use is satisfactory without special insulation.
- Conditionally Acceptable: New development requires detailed analysis of noise insulation requirements.

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3 California Department of Health Services, Office of Noise Control. 1976. Guidelines for the Preparation and Content of Noise Elements of the General Plan. Sacramento, CA.

- Normally Unacceptable: New development is discouraged and requires a detailed analysis of insulation features.
- Clearly Unacceptable: New development should not be undertaken.

The State of California has developed a Land Use Compatibility Matrix for community noise environments that further defines the four categories of acceptance and assigns CNEL values to them. In addition, the State Building Code (Title 24, California Code of Regulations, Part 2) establishes uniform minimum noise insulation performance standards to protect persons within new hotels, motels, dormitories, long-term care facilities, apartment houses, and residential units other than detached single-family residences from the effects of excessive noise, including, but not limited to, hearing loss or impairment and interference with speech and sleep. Residential structures to be located where the CNEL or  $L_{dn}$  is 60 dBA or greater are required to provide sound insulation to limit the interior CNEL to a maximum of 45 dBA. An acoustic, or noise, analysis report prepared by an experienced acoustic engineer is required for the issuance of a building permit for these structures. Conversely, land use changes that result in increased noise levels at residences of 60 dBA or greater must be considered in the evaluation of impacts to ambient noise levels. Table IV.E-2, *Land Use Compatibility for Community Noise Environments*; and Table IV.E-3, *Normally Acceptable Noise Levels for Residential Land Use*, depict noise levels for a variety of uses.

**Table IV.E-2**  
**Land Use Compatibility for Community Noise Environments**

Land Use Category	Community Noise Exposure L <sub>dn</sub> or CNEL (dBA)						
	55	60	65	70	75	80	
Residential—low-density single-family, duplex, mobile homes							
Residential—multiple family							
Transient lodging—motels, hotels							
Schools, libraries, churches, hospitals, nursing homes							
Auditoriums, concert halls, amphitheaters							
Sports area, outdoor spectator sports							
Playgrounds, neighborhood parks							
Golf courses, riding stables, water recreation, cemeteries							
Office buildings, business commercial and professional							
Industrial, manufacturing, utilities, agriculture							
<b>INTERPRETATION:</b>							
<span style="color: green;">█</span> <b>Normally acceptable</b> Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.	<span style="color: purple;">█</span> <b>Normally unacceptable</b> New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.						
<span style="color: yellow;">█</span> <b>Conditionally acceptable</b> New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction with closed windows and fresh air supply systems or air conditioning will normally suffice.	<span style="color: red;">█</span> <b>Clearly unacceptable</b> New construction of development should not be undertaken.						

**NOTES:**L<sub>dn</sub> = Day-Night Level

CNEL = Community Noise Equivalent Level

dBA = decibels in A-weighted sound levels

**SOURCE:**

California Department of Health Services, Office of Noise Control. February 1976. *Guidelines for the Preparation and Content of Noise Elements of the General Plan*. Sacramento, CA.

**Table IV.E-3**  
**Normally Acceptable Noise Levels for Residential Land Use**

Land Use	Acceptable Range (dBA)
Residential – low density single-family, duplex, mobile homes	50–60
Residential – multiple family	50–65

Source: City of Los Angeles. 2006. *L.A. CEQA Thresholds Guide*. “I.2. Operational Noise.” Available at: <http://www.environmentla.org/programs/Thresholds/Complete%20Threshold%20Guide%202006.pdf>

### ***Local***

#### *Noise Element City of Los Angeles General Plan*

The Noise Element of the City of Los Angeles General Plan outlines the goal, objectives, and policies regarding the management of noise within the City. The following policies listed in the Noise Element of the City’s General Plan are applicable to the proposed project:<sup>4</sup>

- Policy 2.2: Enforce and/or implement applicable city, state, and federal regulations intended to mitigate proposed noise producing activities, reduce intrusive noise and alleviate noise that is deemed a public nuisance.
- Policy 3.1: Develop land use policies and programs that will reduce or eliminate potential and existing noise impacts.

#### *City of Los Angeles Noise Regulation*

Chapter XI of the City of Los Angeles Municipal Code (LAMC), *Noise Regulation*, established acceptable ambient noise levels to regulate intrusive noises within specific land use zones and provides procedures and criteria for the measurement of the sound level of “offending” noise sources.<sup>5</sup> These procedures recognize and account for perceived differences in the nuisance level of different types of noise and/or noise sources. In accordance with the Noise Regulation, a noise level increase of 5 dBA over the existing ambient noise level at an adjacent property line is considered a noise violation.

The baseline ambient noise shall be the actual measured ambient noise level or the City’s presumed ambient noise level, whichever is greater. The actual ambient noise level is the measured noise level averaged over a period of at least 15 minutes at a location and time of day comparable to that during which the measurement is taken of the particular noise source being measured. The Noise Regulation indicates that in cases where the actual measured ambient conditions are not known or are less than 50 dBA, the presumed daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) minimum ambient noise levels defined in Section 11.02 of the LAMC should be used. The City’s presumed ambient noise levels for specific land use zones are set forth in the LAMC Section 111.02 and 112.05 and are provided in Table IV.E-4, *City of Los Angeles Presumed Ambient Noise Levels*.

<sup>4</sup> City of Los Angeles Department of City Planning. 1999. Los Angeles City General Plan. Noise Element.

<sup>5</sup> City of Los Angeles Municipal Code, Chapter XI, Noise Regulation.

**Table IV.E-4**  
**City of Los Angeles Presumed Ambient Noise Levels**

Zone	Daytime (7:00 a.m. to 10:00 p.m.) dBA (L <sub>eq</sub> )	Nighttime (10:00 p.m. to 7:00 a.m.) dBA (L <sub>eq</sub> )
Residential, Schools, Hospitals, Hotels	50	40
Commercial	60	55
Manufacturing (M1, MR1, and MR2)	60	55
Heavy Manufacturing (M2 and M3)	65	65

Source: City of Los Angeles Municipal Code, Section 111.03.

To account for people's increased tolerance for short-duration noise impacts, the Noise Regulation provides a 5 dBA allowance (increase) for noise sources occurring more than 5 minutes, but less than 15, in any 1-hour period, and an additional 5 dBA allowance for noise sources occurring 5 minutes or less in any 1-hour period. Additionally, the Noise Regulation provides a penalty of 5 dBA for steady high-pitched noise or repeated impulsive noises (Los Angeles Municipal Code, chapter XI, article I, section 111.02(b)).

Section 112.05 of the City's Noise Regulation sets a maximum noise level from construction equipment operating between the hours of 7:00 a.m. and 10:00 p.m., in any residential zone of the City or within 500 feet thereof of 75 dBA, measured at a distance of 50 feet from the source, unless compliance with this limitation is shown to not be technically feasible. Section 41.40 of the LAMC prohibits construction noise between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. and after 6:00 p.m. on Saturday, and at any time on Sunday. In general, the City of Los Angeles Department of Building and Safety enforces noise ordinance provisions relative to noise generated by operation of equipment and the Los Angeles Police Department enforces provisions relative to noise generated by people.

#### *Ground-Borne Vibration*

The City currently does not have any adopted standards, guidelines, or thresholds relative to ground-borne vibration. As such, available policies and guidelines from the FTA are utilized to assess impacts due to ground-borne vibration. In most circumstances, common ground-borne vibrations related to roadway traffic and construction activities pose no threat to buildings or structures.

### **ENVIRONMENTAL SETTING**

#### *Exposure of Persons to or Generation of Noise*

Within the City of Los Angeles, the major noise sources are generally transportation-related (i.e., vehicles, railroads, and aircraft). In addition, stationary noise sources (air conditioning units, loading docks, mechanical equipment, rail yards, machinery, etc.) from commercial and industrial activity also contribute to the ambient noise environment (Table IV.E-5, *Typical Noise Levels*).

**Table IV.E-5: Typical Noise Levels**

<b>Common Outdoor Activities</b>	<b>Noise Level (dBA)</b>	<b>Common Indoor Activities</b>
	110	Rock Band
Jet Flyover at 1,000 feet		
	100	
Gas Lawnmower at 3 feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
Gas Lawnmower at 100 feet	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
	0	

Source: California Department of Transportation (Caltrans). September 2013. *Technical Noise Supplement ("TeNS")*. Prepared by California Department of Transportation, Division of Environmental Analysis.

Within a 500-foot radius of the proposed project site exist 69 single family homes and one vacant single-family residential lot that have been identified as sensitive receptors, or locations subject to an impact resulting from potential temporary or permanent increases in noise levels related to the proposed project (Figure IV.E-1, *Sensitive Receptors in the Vicinity of the Proposed Project*).

### Ambient Noise Levels

The recorded ambient noise levels at all monitoring locations exceed the City's presumed daytime ambient noise standard of 50 dBA ( $L_{eq}$ ) by an average of 11.9 dBA ( $L_{eq}$ ) (Table IV.E-6, *Measured Total Ambient Noise Levels on and around the Proposed Project Site*). These elevated noise levels can be attributed to the presence of Mulholland Drive and the Hollywood Freeway US 101, both of which exhibit multiple lanes of traffic during all hours of the day. The volume of cars traveling on both of these roadways result in ambient noise levels that are higher than the City of Los Angeles' presumed daytime ambient noise level of 50 dBA. The measured existing ambient noise levels shall be used as the baseline conditions for the purposes of determining the proposed project's noise impacts on the surrounding community.



**FIGURE IV.E-1**

Sensitive Receptors in the Vicinity of the Proposed Project



**Table IV.E-6: Measured Total Ambient Noise Levels on and around the Proposed Project Site**

Location	Monitoring Period (15-minute interval)	Average L <sub>eq</sub> (dBA)	Maximum L <sub>eq</sub> (dBA)	Minimum L <sub>eq</sub> (dBA)	Area Classification/Primary Noise Sources
A1: Nearest Sensitive Receptor	8:34–8:54 a.m.	63.7	64.7	61.2	Single-family residential; ambient noise from local streets.
A2: Proposed Project Location	8:59–9:19 a.m.	60.6	65.7	57.9	Single-family residential; ambient noise from local streets; Located at proposed project site.
A3: End of Driveway at Lankershim Boulevard	9:28–9:48 a.m.	61.4	63.1	58.1	Single-family residential; ambient noise from local streets; located adjacent Lankershim Boulevard.

The proposed project site is located in the Mulholland Scenic Corridor (see Section II, *Environmental Setting*). The baseline noise levels are applicable to all daytime activity. Night time baseline conditions are expected to be lower than those recorded in Table IV.E-6, due to the absence of traffic noise generation.

## ENVIRONMENTAL IMPACTS

### Methodology

Baseline conditions were established using data collected on and in the vicinity of the proposed project site. Noise levels were collected using a Larson Davis 706RC Spark that was calibrated prior to use in the field. Three monitoring locations were established, one located at the nearest sensitive receptor to the project site, one at the approximate center of the proposed project location, and one at the end of the driveway, adjacent to Lankershim Boulevard. Measurements were taken for 20 minute periods; the data collected were used to establish baseline conditions, shown above in Table IV.E-6.

These data are used in comparison to the noise levels associated with activities required for the construction of the proposed Single Family Residence in Studio City. These noise levels are based on standard noise level generation from a table of typical construction equipment, found in Table IV.E-7, *Typical Outdoor Construction Noise Levels*.

**Table IV.E-7  
Typical Outdoor Construction Noise Levels**

Construction Phase	Noise Level (dBA L <sub>eq</sub> )	
	50 Feet	50 Feet with Mufflers
Ground Clearing	84	82
Excavation, Grading	89	86
Foundations	78	77
Structural, Paving	85	83
Finishing	89	86

Source: U.S. Environmental Protection Agency. 1971. *Noise from Construction Equipment and Operation, Building Equipment and Home Appliances*. PB 206717. Washington, DC.

As shown in Table IV.E-7, the excavation and grading phase and finishing phase of project construction would generate the highest levels of noise. This is due in large part to the operation of heavy equipment, though it should be noted that only a limited amount of equipment will be operating in the proposed project location at a particular time. The project construction schedule estimates 15 months for the proposed project to complete construction (see Section III, *Project Description*). Based on the information in Table IV.E-7, construction noise levels could periodically reach approximately 77 to 86 dBA at a distance of 50 feet from the project site. As stated above, the City's Noise Regulation sets a maximum noise level from construction equipment operating between the hours of 7:00 a.m. and 10:00 p.m., in any residential zone of the City or within 500 feet thereof of 75 dBA, measured at a distance of 50 feet from the source, unless compliance with this limitation is shown to not be technically feasible. Therefore, any sensitive receptors located within a given radius of distance from the proposed project site will experience significant impacts.

Ambient noise levels were evaluated pursuant to City of Los Angeles City of Los Angeles Municipal Code, Noise Regulation, which establishes acceptable ambient noise levels to regulate intrusive noises within specific land use zones and incorporates procedures for sound level measurement of noise sources. "Echo factor" is not an element requiring evaluation significant impact under the City of Los Angeles' CEQA threshold guidelines<sup>6</sup> or City of Los Angeles Municipal Code, Noise Regulation. Any excessive noise levels beyond the threshold required pursuant to the City of Los Angeles Municipal Code, Noise Regulation should be reported to the Los Angeles Police Department pursuant to City of Los Angeles Municipal Code, Section 111.03.

### Thresholds of Significance

#### *CEQA Guidelines*

The potential for the proposed project to result in impacts related to noise was analyzed in relation to the questions contained in Appendix G of the State CEQA Guidelines. The State CEQA Guidelines recommend the consideration of six questions when addressing the potential for significant impacts to noise. Would the project result in:

- (a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
- (b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?
- (c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?
- (d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
- (e) 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, would the project expose people residing or working in the project area to excessive noise levels?
- (f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

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<sup>6</sup> City of Los Angeles. 2006. L.A. CEQA Thresholds Guide. Section, I. Noise. Available at: <http://environmentla.org/programs/Thresholds/I-Noise.pdf>

### **L.A. CEQA Thresholds Guide<sup>7</sup>**

The *L.A. CEQA Thresholds Guide* provides the following significance thresholds for construction noise:

- Construction activities lasting more than one day would exceed existing ambient exterior noise levels by 10 dBA or more at a noise sensitive use;
- Construction activities lasting more than 10 days in a three month period would exceed existing ambient exterior noise levels by 5 dBA or more at a noise sensitive use; or
- Construction activities would exceed the ambient noise level by 5 dBA at a noise sensitive use between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at anytime on Sunday.<sup>8</sup>

The *L.A. CEQA Thresholds Guide* provides the following significance threshold for operational noise in a single-family residential area:

- A project would normally have a significant impact on noise levels from project operations if the project would cause ambient noise level measured at the property line of affected uses to increase by 3 dBA in CNEL to or within the “normally unacceptable” level of 70-75 dBA or “clearly unacceptable” level of above 70 dBA for single-family land uses.

### **Project Impacts**

**(a) *Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?***

The proposed project would result in significant impacts to noise in regard to exposure of persons to or generation of noise levels in excess of standards established by the City of Los Angeles. Based on Table IV.E-8, and the fact that noise attenuates from a point source at a rate of approximately 6.0 dBA per doubling of distance, the noise impacts on sensitive receptors can be determined by Equation 1 for noise attenuation over distance:

$$(1) \quad L_2 = L_1 - |20 \log_{10} \left( \frac{d_1}{d_2} \right)|,$$

where

$L_1$  = known sound level at  $d_1$

$L_2$  = desired sound level at  $d_2$

$d_1$  = distance of known sound level from the noise source

$d_2$  = distance of the sensitive receptor from the noise source

By assigning the highest potential noise level for muffled equipment during construction at 86 dBA ( $L_1$ ) at a distance of 50 feet ( $d_1$ ), the distance at which construction activities would reach a maximum of 75 dBA ( $L_2$ ) and be below the City’s CEQA Threshold for construction activities is approximately 178 feet

<sup>7</sup> City of Los Angeles. 2006. L.A. CEQA Thresholds Guide. Section, I. Noise. Available at: <http://environmentla.org/programs/Thresholds/I-Noise.pdf>

<sup>8</sup> City of Los Angeles. 2006. L.A. CEQA Thresholds Guide: I. Noise. Available at: <http://environmentla.com/programs/Thresholds/I-Noise.pdf> Main website: <http://www.environmentla.org/programs/Thresholds/Complete%20Threshold%20Guide%202006.pdf>

(d<sub>2</sub>). This distance, along with the other predicted distances at which the noise impacts will be below 75 dBA according to Equation 1 for each construction phase, are presented in Table IV.E-8, *Predicted Distance at Which Noise Impact Will Be below the Level of Significance*.

**Table IV.E-9**  
**Predicted Distance at Which Noise Impact Will Be below the Level of Significance**

Construction Phase	Distance at Which Noise Impact Will Be below 75 dBA*	Number of Receptors within This Distance
Ground clearing	112 feet	10
Excavation, grading	178 feet	12
Foundations	63 feet	6
Structural, paving	126 feet	10
Finishing	178 feet	12

*Note:* \* According to Section 112.05 of the LAMC, construction activities may not exceed 75 dBA at a distance of 50 feet between the hours of 7:00 a.m. and 10:00 p.m. in any residential zone of the City or within 500 feet thereof.

The distance at which noise impacts would be below the threshold of significance for a residential zone for the different phases of construction ranges from 63 to 178 feet. As Table IV.E-8 indicates, there will be a significant impact to sensitive receptors during all phases of construction, to varying degrees. According to Equation 1, the loudest phases of construction (excavation/grading and finishing) will potentially generate noise levels upwards of 80.8 dBA at the nearest sensitive receptor located 41 feet to the north of the proposed project site boundary. Therefore, construction noise related to the proposed project has the potential to exceed the City's existing noise regulation by 5 dBA at the nearest sensitive receptor. During the most noise intensive phases of construction, 12 sensitive receptors would be subjected to a maximum noise level in excess of 75 dBA. During the least noise intensive phases, 6 sensitive receptors would be potentially subjected to a maximum noise level in excess of 75 dBA.

For the proposed project, the construction scenario is expected to last approximately 15 months, and noise levels are projected to periodically exceed the 5dBA standard for construction lasting more than 10 days in a three month period by a maximum of 12.1 dBA at the closest sensitive receptor. Therefore, the proposed project would result in a potentially significant impact to noise relating to exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, and the consideration of mitigation measures and alternatives is required.

**(b) *Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?***

The Initial Study (Appendix B) determined that the proposed project would not result in significant impacts to noise in relation of exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. Therefore, this question was not carried forward for detailed analysis in the EIR.

**(c) *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?***

The Initial Study (Appendix B) determined that the proposed project would not result in significant impacts to noise in relation to a substantial permanent increase in ambient noise levels in the project

vicinity above levels existing without the project. Therefore, this question was not carried forward for detailed analysis in the EIR.

**(d) *A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?***

The proposed project would result in a potentially significant impact to noise in regard to temporary and periodic noise levels above existing noise levels in the project vicinity. Outside of construction hours, the proposed project is not anticipated to generate any noise levels in excess of the ambient levels established in Table IV.E-7. For the proposed project, the construction scenario is expected to last approximately 15 months, and noise levels are projected to periodically exceed the 5 dBA standard for construction lasting more than 10 days in a three-month period by a maximum of 12.1 dBA at the closest sensitive receptor. Therefore, the consideration of mitigation measures and alternatives is required.

**(e) *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, would the project expose people residing or working in the project area to excessive noise levels?***

The Initial Study (Appendix B) determined that the proposed project would not result in significant impacts because the project is not located within an airport land use plan or in the vicinity of an airport. Therefore, this question was not carried forward for detailed analysis in the EIR.

**(f) *For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?***

The Initial Study (Appendix B) determined that the proposed project would not result in significant impacts because the project is not located within the vicinity of a private airstrip. Therefore, this question was not carried forward for detailed analysis in the EIR.

## CUMULATIVE IMPACTS

The incremental impact of the proposed project, when added to the related past, present, or reasonably foreseeable, probable future projects listed in Section II, would not be expected to result in cumulative impacts related to exposure of persons to or generation of noise levels or related to an increase in ambient noise levels. The nearest related project is 0.3 mile, or 1,584 feet, away and is a residential development, with assumed noise generation similar in scale to the proposed project. The distance between the closest related project and the proposed project diminishes any potential impact from related projects in the vicinity below the level of significance. Therefore, there would be no cumulative impacts relating to exposure of noise levels or generation of noise.

## MITIGATION MEASURES

Implementation of Mitigation Measure NOI-1 would be required to reduce impacts to noise during construction.

**MM-NOI-1:** Noise-attenuating barriers, baffles, or blankets shall be installed to reduce noise levels to a maximum of 75 dBA for potential sensitive receptors within 178 feet.

### **LEVEL OF SIGNIFICANCE AFTER MITIGATION**

Implementation of Mitigation Measure NOI-1, which would reduce construction noise levels to the maximum allowed level of 75 dBA, would reduce impacts to below the level of significance.

Other impacts regarding noise would be less than significant or result in no impact. Cumulative impacts would be less than significant.