

Noise Technical Report

UCLA RESEARCH PARK PROJECT 10800 – 10850 W. PICO BOULEVARD LOS ANGELES, CA

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1 INTRODUCTION

Pursuant to the California Environmental Quality Act (CEQA), this Noise Technical Report (Noise Report) has been prepared to evaluate potential noise impacts associated with the proposed UCLA Research Park Project (Project). As described further below, the proposed Project involves the development and operation of a state-of-the-art, multidisciplinary research and innovation hub located on the site of the Westside Pavilion shopping center. The Project Site includes Research Park East located at 10800 W. Pico Boulevard and Research Park West located at 10850 W. Pico Boulevard in the City of Los Angeles (City). The existing buildings at Research Park East and West are connected by an enclosed pedestrian bridge across Westwood Boulevard, as shown in Figure 1 (on page 6). The Project Site was acquired by UCLA in late 2023 and at that time the eastern portion of the property was midway through conversion into high-tech office space, along with related common areas, food service, and other amenities. . UCLA proposes to continue the adaptive reuse of the Project Site to create UCLA Research Park

The objectives of this Noise Report are to:

- a) Evaluate the Project's potential construction-related noise impacts on existing off-site noise sensitive uses in the vicinity of the Project Site.
- b) Determine potential Project operation-related noise impacts from on-site stationary sources (i.e., building services mechanical equipment) and off-site mobile sources (auto traffic) affecting existing off-site noise sensitive uses.

1.1 Project Description

As noted above, UCLA proposes to continue the transformation of the retail site to create UCLA Research Park. This adaptive reuse project involves interior improvements and limited new construction to repurpose approximately 744,400 gross square feet (GSF) of existing occupiable floor area within Research Park East and West along with limited new construction to provide over 800,000 GSF of scientific program space with approximately 29,000 square feet (SF) of open space and outdoor amenity areas and approximately 1,100 parking spaces on-site, for a total of up to approximately 1.35 million GSF of research park uses.¹ The proposed uses will include wet and dry laboratories; office space; meeting and assembly spaces, including instructional spaces; ancillary food service; common and circulation areas, including amenities; existing subterranean parking; and outdoor open space. The program space in UCLA Research Park will include open, collaborative areas for research and creative activities;

¹ Total square footage of 1.35 million GSF includes approximately 489,200 GSF of existing multi-level subterranean parking.

leased startup company incubator spaces; makerspace and shared equipment rooms; shared office space for bench researchers; private office space for project leaders; conference rooms; spaces leased to outside entities such as established companies, government laboratories, and outside institutions; and ancillary auditoriums and gathering spaces to support seminars, performances, and small conferences. The Project also includes improvements to the on-site building systems, accessibility, and utility infrastructure.

The Project involves limited new construction south of the existing buildings. At Research Park East a new conference center, central loading dock facility, lobby pavilion, and loading/service area would be constructed. At Research Park West a new amenity pavilion of approximately 5,000 GSF would be constructed on the south side of the building to provide a main entrance and lobby that could function as communal/multipurpose space. A series of landscaped terraces and rooftop gardens also would be introduced. In general, loading and service activities would occur inside the buildings. However, any exterior service areas, loading activities, and on-site equipment at Research Park East and West would be screened.

It is estimated that construction would occur in phases beginning in 2026, with the Research Park East core and shell improvements and Phase 1 tenant improvements anticipated to be completed in late 2027. Subsequent phases would involve additional tenant improvements in Research Park East, associated support functions such as the central loading dock and rooftop mechanical areas, construction of the new conference center, and a full seismic retrofit and tenant improvements at Research Park West. Earthwork would primarily be limited to areas south of the existing buildings to prepare portions of the site for new construction and to modify on-site circulation and landscaping. The maximum depth of excavation/trenching would be approximately 10 feet for most Project components, and a depth of approximately 3.75 feet below the finished floor of parking Level P5 for seismic retrofits at Research Park West. Soil export for all construction phases would total an estimated 8,645 cubic yards (cy). Full buildout is anticipated by 2035. However, this noise analysis conservatively assumes that the Project would be constructed in a single phase beginning in 2026 and concluding in 2030. This four-year timeframe assumes a more rapid and intense construction period than is expected to occur. Based on this approach, the actual construction-related impacts occurring over time would generally be less than those predicted herein.

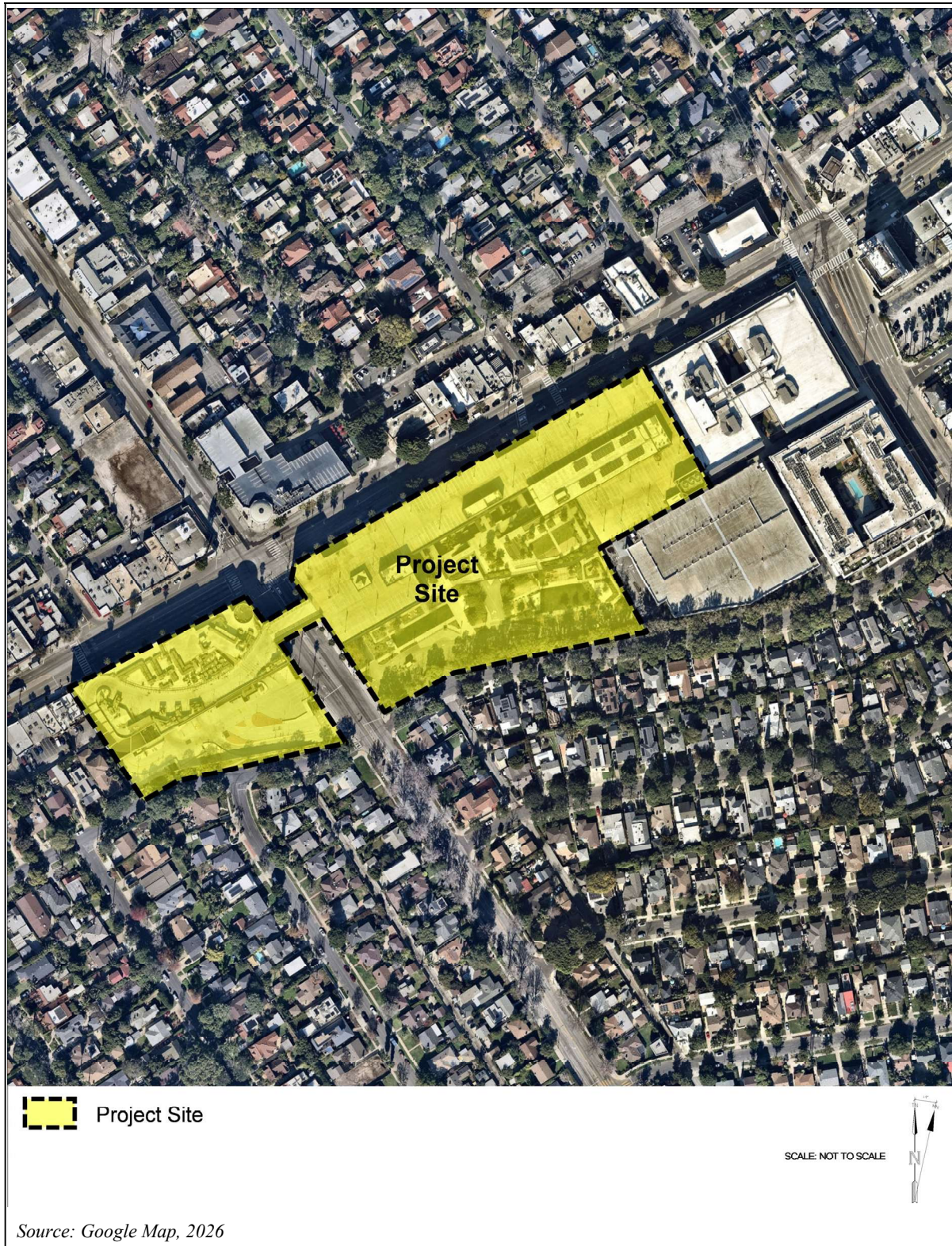


Figure 1. Project Site Map

2 ENVIRONMENTAL SETTING

2.1 Fundamentals of Sound and Environmental Noise

Noise is commonly defined as sound that is undesirable because it interferes with speech communication and hearing, causes sleep disturbance, or is otherwise annoying (unwanted sound). The decibel (dB) is a conventional unit for measuring the amplitude of sound because it accounts for the large variations in sound pressure amplitude and reflects the way people perceive changes in sound amplitude. The human hearing system is not equally sensitive to sound at all frequencies. Therefore, to approximate this human frequency-dependent response, the A-weighted filtering system is used to adjust measured sound levels (dBA). The term “A-weighted” refers to filtering the noise signal in a manner that corresponds to the way the human ear perceives sound. Examples of various sound levels in different environments are provided in Table 1 (on page 9).²

Generally, people judge the relative magnitude of sound sensation by subjective terms such as “loudness” or “noisiness.” To a person with normal hearing, a change in sound level of 3 dB is considered “just perceptible,” a change in sound level of 5 dB is considered “clearly noticeable,” and a change (i.e., increase) of 10 dB is generally recognized as “twice as loud” as the original sound.³

Although exposure to high noise levels has been demonstrated to cause physical and physiological effects, the principal human responses to typical environmental noise exposure are related to interference with certain activities and individual sensitivities. Interference effects interrupt daily activities and include interference with human communication activities, such as typical conversations, watching television, telephone conversations, as well as interference with sleep.

The World Health Organization’s Guidelines for Community Noise details the adverse health effects of consistent, high noise levels, which include annoyance, speech intelligibility, sleep disturbance, hearing impairment, physiological functions (e.g., hypertension and cardiovascular effects), mental illness, performance of cognitive tasks, and social and behavioral effects (e.g., feelings of helplessness, aggressive behavior).⁴

² All sound levels measured in decibel (dB) in this study are relative to 2×10^{-5} N/m².

³ Caltrans, *Technical Noise Supplement (TeNS)*, Table 2.10, 2013.

⁴ World Health Organization Team, edited by Birgitta Berglund, Thomas Lindvall, and Dietrich H. Schwela, *Guidelines for Community Noise*, 1999.

2.1.1 Outdoor Sound Propagation

In an outdoor environment, sound levels attenuate (reduce) through the air as a function of distance. Such attenuation is commonly referred to as “distance loss” or “geometric spreading,” and is based on the noise source configuration (e.g., point source or line source). For a point source, such as a piece of mechanical/electrical/construction equipment (e.g., air conditioner, electrical transformer, or bulldozer), the rate of sound attenuation is about 6 dB per doubling of distance from the noise source. For example, an outdoor condenser fan that generates a sound level of 60 dBA at a distance of five feet would be attenuated to 54 dBA at a distance of 10 feet. For a line source, such as a constant flow of traffic on a roadway, the rate of sound attenuation is about 3 dB per doubling of distance.⁵ These standard sound attenuation rates represent conservative assumptions because they are based on hard-ground propagation conditions (e.g., pavement), which do not account for the additional attenuation that occurs over soft ground surfaces such as grass or landscaped areas.

In addition, structures (e.g., buildings and solid walls) and natural topography (e.g., hills) that obstruct the acoustics line-of-sight between a noise source and a receptor further reduce the noise level at the receptor if the receptor is located within the “shadow” of the obstruction, such as behind a sound wall. This type of sound attenuation is known as “barrier insertion loss.” If a receptor is located behind the wall but still has a view of the source (i.e., line-of-sight is not fully blocked), some barrier insertion loss would still occur, however, to a lesser extent. Additionally, a receptor located on the same side of the wall as a noise source may experience an increase in the perceived noise level as the wall reflects noise back to the receptor, thereby compounding the noise. Outdoor noise barriers can provide noise level reductions ranging from approximately 5 dBA (where a barrier just breaks the acoustic line-of-sight between the noise source and receiver) to an upper range of 20 dBA with a more substantial barrier.⁶

⁵ Caltrans, *Technical Noise Supplement (TeNS)*, Chapter 2.1.4.1, 2013.

⁶ Caltrans, *Technical Noise Supplement (TeNS)*, Chapter 2.1.4.4, 2013.

Table 1. Typical Noise Levels

Common Outdoor Activities	Noise Levels, dBA	Common Indoor Activities
	110	Rock Band
Jet Fly-over at 1000 feet		
	100	
Gas Lawn Mower 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 Lawn Mower 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
Quiet Suburban Nighttime		(Background)
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall
	20	(Background)
		Broadcast/Recording Studio
	10	
	0	
Source: Caltrans, Technical Noise Supplement (TeNS), Table 2-5, 2013		

2.1.2 Environmental Noise Descriptors

Several rating scales have been developed to analyze the adverse effect of environmental noise on people. Since environmental noise fluctuates over time, these scales consider the total acoustic energy content, as well as the time and duration of occurrence. The most frequently used noise descriptors are summarized below.

Equivalent Sound Level (L_{eq}). L_{eq} is a measurement of the acoustic energy content of noise averaged over a specified time. Thus, the L_{eq} of a time-varying sound and that of a steady sound are the same if they deliver the same amount of energy to the receptor's ear during exposure. L_{eq} for one-hour periods, during the daytime or nighttime hours, and 24 hours are commonly used in environmental noise assessments. L_{eq} can be measured for any time period but is typically measured for an increment of no less than 15 minutes for environmental studies.

Community Noise Equivalent Level (CNEL). CNEL is the time average of all A-weighted sound levels for a 24-hour day period with a 10 dBA adjustment (increase) added to the sound levels that occur in the nighttime hours (10:00 P.M. to 7:00 A.M.) and a 5 dBA adjustment (increase) added to the sound levels that occur in the evening hours (7:00 P.M. to 10:00 P.M.). These adjustments attempt to account for increased human sensitivity to noise during the quieter nighttime periods, when the ambient background noise is lower and where sleep is the most probable activity. CNEL has been adopted by the State of California as the rating scale to be used to define the community noise environment for development of the community noise element of a General Plan and is also used by the City of Los Angeles for its land use planning.⁷

2.2 Ground-borne Vibration and Noise

Vibration is commonly defined as an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. The peak particle velocity (PPV) or the root-mean square (RMS) velocity is usually used to describe vibration amplitudes. PPV is defined as the maximum instantaneous peak of the vibration signal and is typically used for evaluating potential building damage.⁸ The RMS velocity is defined as the square-root of the average of the squared amplitude of the vibration signal and is used for evaluating human response to ground-borne vibration.⁹ Decibel notation (VdB) is commonly used to express RMS vibration velocity amplitude.¹⁰ The relationship of PPV to RMS velocity is expressed in terms of the "crest factor," defined as the ratio of the PPV amplitude to the RMS amplitude. PPV is typically a factor of 1.7 to 6 times greater than RMS vibration velocity; the Federal Transit Administration (FTA) uses a crest factor of 4.¹¹ Ground-borne vibration generated by man-made activities (e.g., road traffic, construction operations) typically weakens with greater horizontal distance away from the source of the vibration. The vibration impact studies show in most circumstances common ground-induced vibrations related to roadway traffic and construction activities pose no threat to buildings or structures.¹²

Per the FTA, ground-borne noise occurs when ground vibration causes building surfaces to radiate low frequency sound—often perceived as a rumble, such as when a train passes. The Project does not include any uses that would generate excessive ground-borne noise during construction or operation. Furthermore, given the vibration-sensitive nature of some of the

⁷ *State of California, General Plan Guidelines, 2017.*

⁸ *Vibration levels described in this report are in terms peak particle velocity level in the unit of inches per second.*

⁹ *FTA, "Transit Noise and Vibration Impact Assessment," Section 5, September 2018.*

¹⁰ *VdB (velocity level in decibel) = 20 x Log (V / V_{ref}), where V is the RMS velocity amplitude in micro-inch per second and V_{ref} is the reference velocity amplitude of 1x10⁻⁶ inch per second (1 micro-inch per second).*

¹¹ *FTA, "Transit Noise and Vibration Impact Assessment," Section 5, September 2018.*

¹² *FTA, "Transit Noise and Vibration Impact Assessment," Section 5, September 2018.*

scientific research activities that would occur on-site, the Project would be designed to minimize any potential vibration effects. Therefore, no impact related to ground-borne noise would result.

2.3 Regulatory Framework

UCLA and various government agencies have established noise regulations and policies to protect citizens from potential hearing damage and other adverse effects associated with noise and ground-borne vibration. An overview of regulations and policies that are relevant to construction and operation of the Project is provided below.

2.3.1 University of California, Los Angeles Requirements

In conjunction with certification of the UCLA Long Range Development Plan Amendment (2017) and Student Housing Projects Final Subsequent Environmental Impact Report (LRDP Final SEIR) (State Clearinghouse No. 2017051024) and approval of the LRDP Amendment (2017) and Student Housing Projects, The Regents of the University of California adopted a Mitigation Monitoring and Reporting Program (LRDP MMRP). The LRDP MMRP ensures that mitigation measures (MMs) that are the responsibility of the University of California are implemented in a timely manner. Although the Project site is not located within the UCLA campus which is subject to the LRDP, this report identifies applicable programs, practices, and procedures (PPs) and mitigation measures (MMs) from the LRDP MMRP related to noise and vibration that would reduce noise and vibration generated by the Project. As a standard practice, relevant LRDP PPs and MMs are implemented for all UCLA development projects, including those located off campus.

The following adopted PPs and MMs from the LRDP MMRP have been incorporated into the design of the Project and are assumed in the analysis presented in this report. Changes in the text from the LRDP MMRP are signified by strikeouts (~~strikeouts~~) where non-applicable text has been removed; and by bold and underline (**bold and underline**) where text has been added. Clarifying changes have been made so the stated requirement reflects that the Project is located off campus, to ensure appropriate implementation of the mitigation, and to reflect Project-specific characteristics as identified in this Noise Technical Report.

PP 4.9-6(a) *The ~~campus~~ **University** shall continue to shield all new stationary sources of noise that would be located in close proximity to noise-sensitive buildings and uses.*

PP 4.9-7(a) *~~To the extent feasible,~~ Construction activities shall be limited to 7:00 AM to 9:00 PM Monday through Friday, 8:00 AM to 6:00 PM on Saturday, and no construction on Sunday and national holidays, as appropriate, in order to minimize disruption to area residences surrounding the ~~campus and to on-campus uses~~ **Project site** that are sensitive to noise.*

Project-Specific Implementing Measure: Exterior construction activities Monday through Friday shall be limited to 7:00 AM to 7:00 PM.

- PP 4.9-7(b)** The ~~campus~~ **University** shall continue to require by contract specifications that construction equipment be required to be muffled or otherwise shielded. Contracts shall specify that engine-driven equipment be fitted with appropriate noise mufflers.
- PP 4.9-7(c)** The ~~campus~~ **University** shall continue to require that stationary construction equipment material and vehicle staging be placed to direct noise away from sensitive receptors.
- PP 4.9-8** The ~~campus~~ **University** shall continue to conduct meetings, as needed, with off-campus constituents that are affected by ~~campus~~ construction to provide advance notice of construction activities and ensure that the mutual needs of the particular construction project and of those impacted by construction noise are met, ~~to the extent feasible~~.
- MM 4.9-2** The ~~campus~~ **University** shall require by contract specifications that, ~~to the extent feasible, large bulldozers, large heavy trucks, and other similar equipment not be used within 43 feet of occupied residence halls, within 34 feet of non-residential/non-sensitive buildings, and within 135 feet of buildings that house sensitive instrumentation or similar vibration sensitive equipment or activities. The work shall be done with medium-sized equipment or smaller within these prescribed distances to the extent practicable.~~
- MM 4.9-7** A solid noise barrier that would break the line of sight between the construction site and a sensitive use area would reduce construction noise by at least 5 dBA. ~~Therefore, when detailed construction plans are complete, the campus shall review the locations of sensitive receptor areas in relation to the construction site. If it is determined that a 12-foot-high barrier would break the line of sight between an 11-foot-high noise source and adjacent sensitive use areas,~~ A temporary **12-foot-high** barrier shall be erected **along the southern property line between the construction areas at Research Park East/West and the existing residential uses to the south (receptor locations R1 and R2) and along the western property line between the construction area at Research Park West and the existing residential uses to the west (receptor location R3).** ~~to the extent practicable.~~ The barrier shall be solid from the ground to the top with no openings.

2.3.2 *Federal*

2.3.2.1 *Federal Transit Administration Vibration Standards*

The Federal Transit Administration (FTA) has adopted vibration criteria for use in evaluating vibration impacts from construction activities.¹³ The vibration damage criteria adopted by the FTA are shown in Table 2 (below).

Table 2. Construction Vibration Damage Criteria

Building Category	PPV^a (in/sec)
I. Reinforced-concrete, steel or timber (no plaster)	0.50
II. Engineered concrete and masonry (no plaster)	0.30
III. Non-engineered timber and masonry buildings	0.20
IV. Buildings extremely susceptible to vibration damage	0.12
^a Peak Particle Velocity (PPV) is the maximum instantaneous ground vibration velocity, expressed in inches per second (in/sec). PPV is the standard engineering metric used to evaluate the potential for building damage (e.g., cosmetic or structural building damage) from construction-related vibration. Source: FTA, <i>Transit Noise and Vibration Impact Assessment Manual</i> , 2018	

In addition, the FTA has also adopted standards for ground-borne vibration associated with human annoyance. The FTA vibration limit for human annoyance at residences and buildings where people normally sleep is 80 VdB, based on infrequent events.¹⁴

2.3.3 *State*

2.3.3.1 *Guidelines for Noise Compatible Land Use*

The State of California has not adopted Statewide standards for environmental noise, but the Governor's Office of Planning and Research (OPR) (now referred to as the Office of Land Use and Climate Innovation) has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure, as presented in Figure 2 (on page 15). The purpose of these guidelines is to maintain acceptable noise levels in a community setting for different land use types. Noise levels are divided into four general categories, which vary

¹³ Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018, Table 7-5, p. 86.

¹⁴ Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018, Table 6-1, p. 124. Infrequent events represent fewer than 30 vibration events per day. The decibel notation VdB is the standard vibration descriptor used to evaluate human response to ground-borne vibration. Based on FTA reference vibration levels for construction equipment, the 80 VdB human-annoyance criterion would be exceeded at distances ranging from approximately 3 feet for a small bulldozer to approximately 45 feet for a large bulldozer.

in range according to land use type: “normally acceptable,” “conditionally acceptable,” “normally unacceptable,” and “clearly unacceptable.”

The State has also established noise insulation standards for new multi-family residential units, hotels, and motels. These requirements are collectively known as the California Noise Insulation Standards (Title 24 of the California Code of Regulations [CCR]). The noise insulation standards set forth an interior standard of 45 dBA CNEL in any habitable room. The standards require an acoustic analysis demonstrating how dwelling units have been designed to meet this interior standard where such units are proposed in areas subject to exterior noise levels greater than 60 dBA CNEL. Title 24 standards are typically enforced by local jurisdictions through the building permit application process.

The State of California’s noise insulation standards for nonresidential uses are provided in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 11, California Green Building Standards (CALGreen) Code. The CALGreen Code noise standards are applied to new construction or renovation projects in California to control interior noise levels resulting from exterior noise sources. Proposed projects may use either the prescriptive method (CALGreen Code Section 5.507.4.1) or the performance method (CALGreen Code Section 5.507.4.2) to show compliance. Under the prescriptive method, a project must demonstrate transmission loss ratings for the wall and roof-ceiling assemblies and exterior windows when located within a noise environment of 65 dBA CNEL or higher. Under the performance method, a project must demonstrate that interior noise levels do not exceed 50 dBA $L_{eq(1hr)}$.

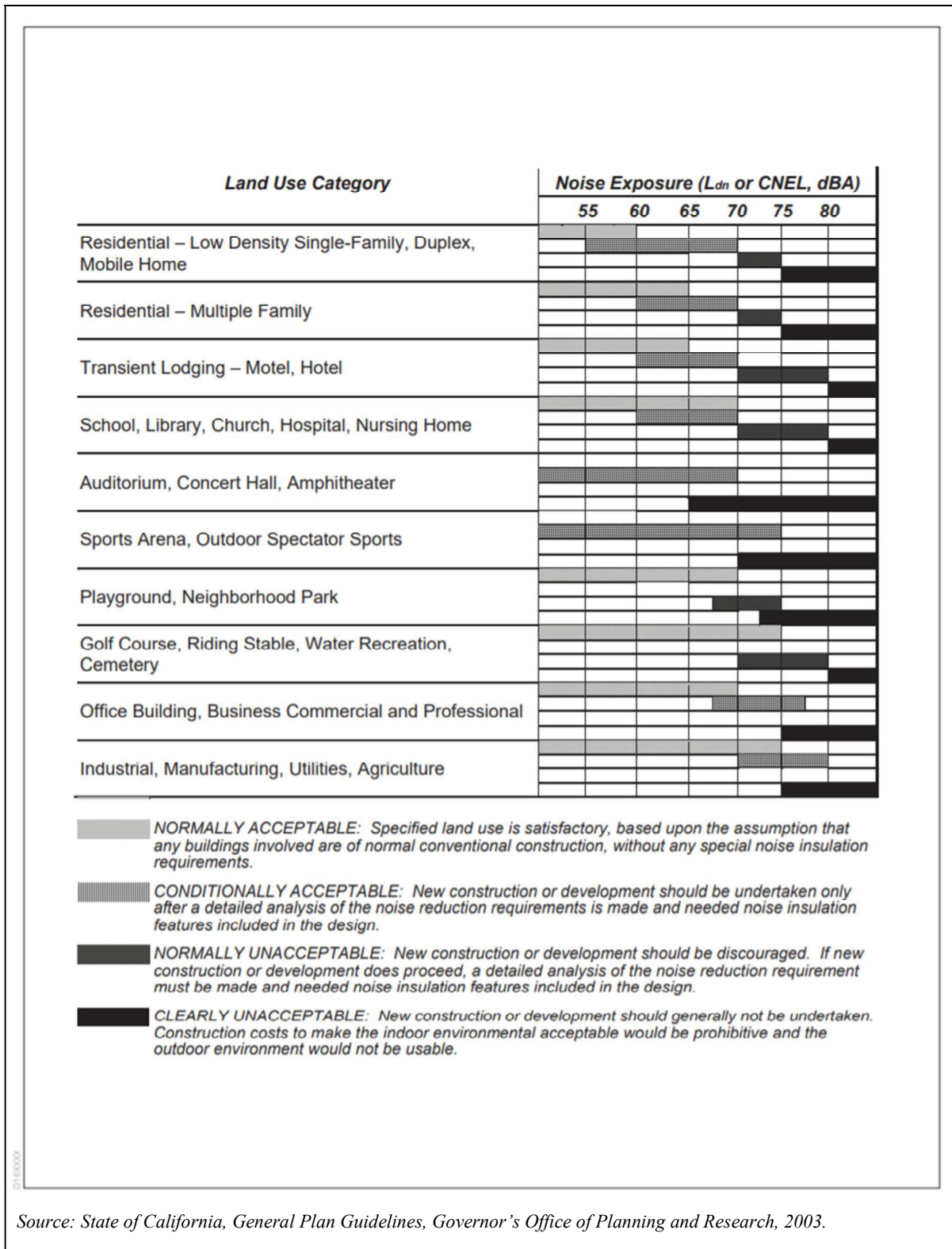


Figure 2. Guidelines for Noise Compatibility by Land Use

2.3.4 Local

UCLA is part of the University of California, a constitutionally created entity. As a constitutional entity, the University of California is not subject to municipal regulations, such as the County and City General Plans or land use regulatory ordinances. However, in the absence of established noise standards, UCLA may elect to utilize relevant standards established by other agencies for purposes of analysis. Based on the location of the Project within the City of Los Angeles, the City's General Plan and Noise Ordinance are summarized below, and while not required as a matter of regulatory applicability, the City's noise thresholds have been selected for use in the analysis below.

2.3.4.1 City of Los Angeles General Plan Noise Element

The Noise Element of the City's General Plan (Noise element) policies include the CNEL guidelines for land use compatibility as shown in Table 3 (on page 17) and includes a number of goals, objectives, and policies for land use planning purposes.¹⁵

Table 3 (on page 17) provides the exterior noise standard associated with various land uses, as provided in the City's Noise Element. According to the City, an exterior noise environment up to 70 dBA CNEL is "conditionally acceptable" for noise sensitive uses (e.g., residential, hotel, school). In addition, noise levels up to 75 dBA CNEL are "normally unacceptable", while noise levels at 75 dBA CNEL and above are "clearly unacceptable" for residential.

¹⁵ *City of Los Angeles, Noise Element of the Los Angeles City General Plan, adopted February 3, 1999.*

Table 3. City of Los Angeles Noise Land Use Compatibility

Land Use	Day-Night Average Exterior Sound Level (CNEL dBA)						
	50	55	60	65	70	75	80
Residential Single Family, Duplex, Mobile Home	A	C	C	C	N	U	U
Residential Multi-Family	A	A	C	C	N	U	U
Transient Lodging, Motel, Hotel	A	A	C	C	N	U	U
School, Library, Church, Hospital, Nursing Home	A	A	C	C	N	N	U
Auditorium, Concert Hall, Amphitheater	C	C	C	C/N	U	U	U
Sports Arena, Outdoor Spectator Sports	C	C	C	C	C/U	U	U
Playground, Neighborhood Park	A	A	A	A/N	N	N/U	U
Golf Course, Riding Stable, Water Recreation, Cemetery	A	A	A	A	N	A/N	U
Office Building, Business, Commercial, Professional	A	A	A	A/C	C	C/N	N
Agriculture, Industrial, Manufacturing, Utilities	A	A	A	A	A/C	C/N	N
¹ A - 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. ² C - 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 included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice. ³ N - Normally Unacceptable: 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. ⁴ U - Clearly Unacceptable: New construction or development should generally not be undertaken. Source: City of Los Angeles, General Plan Noise Element, adopted February 1999.							

2.3.4.2 City of Los Angeles Municipal Code

Chapter XI, Noise Regulation, of the Los Angeles Municipal Code (LAMC; referred to herein as the Noise Regulations) establishes acceptable ambient sound levels and is intended to regulate intrusive noises (e.g., stationary mechanical equipment and vehicles other than those traveling on public streets) within specific land use zones and to provide procedures and criteria for the measurement of the sound level of noise sources. These procedures recognize and account for differences in the perceived level of different types of noise and/or noise sources. In accordance with the Noise Regulations, a noise level increase from certain regulated noise sources of 5 dBA over the existing or presumed ambient noise level at an adjacent property line is considered a violation of the Noise Regulations. The 5-dBA increase above ambient is

applicable to City-regulated noise sources (e.g., mechanical equipment) and is applicable any time of the day.¹⁶

The Noise Regulations state that the baseline ambient noise environment 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, L_{eq} (15-minute). The Noise Regulations state that in cases where the actual measured ambient conditions are not known, the City’s presumed daytime (7:00 A.M. to 10:00 P.M.) and nighttime (10:00 P.M. to 7:00 A.M.) ambient noise levels defined in Section 111.03 of the LAMC should be used. The City’s presumed ambient noise levels for specific land use zones, as set forth in LAMC Section 111.03, are provided in Table 4 (below).

Table 4. City of Los Angeles Presumed Ambient Noise Levels

Zone	Daytime (7:00 A.M. to 10:00 P.M.) dBA (L_{eq})	Nighttime (10:00 P.M. to 7:00 A.M.) dBA (L_{eq})
Residential, School, Hospitals, Hotels	50	40
Commercial	60	55
Manufacturing (M1, MR1, and MR2)	60	55
Heavy Manufacturing (M2 and M3)	65	65
<i>Source: LAMC Section 111.03.</i>		

The Noise Regulations also address off-road vehicle-related noise, including in Section 114.02, which prohibits the operation of any motor-driven vehicles upon any property within the City in a manner that would cause the noise level on the premises of any occupied residential property to exceed the ambient noise level by more than 5 dBA, and in Section 114.06, which requires that vehicle theft alarm systems be silenced within five minutes.

The Noise Regulations (LAMC Section 112.05) set a maximum noise level from construction equipment (powered equipment or powered hand tools) 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 technically infeasible.¹⁷ Section 41.40 of the LAMC prohibits construction noise that disturbs persons occupying sleeping quarters in any dwelling, hotel, or apartment or other place of residence between the hours of 9:00 P.M. and 7:00 A.M. Monday through Friday, before 8:00

¹⁶ Los Angeles Municipal Code, Chapter XI, Section 112.02.

¹⁷ In accordance with the Noise Regulations (LAMC Chapter XI, Section 112.05), “technically feasible” means that the established noise limitations can be complied with at a project site, with the use of mufflers, shields, sound barriers, and/or other noise reduction devices or techniques employed during the operation of equipment.

A.M. and after 6:00 P.M. on Saturday or national holiday, and at any time on Sunday. Construction hours may be extended with approval from the Executive Director of the Board of Police Commissioners.

The Noise Regulations (LAMC Section 112.01) limits noise from amplified voice and music and prohibits the operation of such devices (e.g., radio, musical instrument, phonograph, television receiver, or other machine) or other sounds in such a manner as to disturb the peace, quiet, and comfort of neighbors. Specifically, noise from such uses or operation that is audible at a distance in excess of 150 feet from the property line of the noise source within a residential zone of the City or within 500 feet thereof is prohibited.

In addition, the Noise Regulations (LAMC Section 113.01) prohibits collecting or disposing of rubbish or garbage, operating any refuse disposal truck, or collecting, loading, picking up, transferring, unloading, dumping, discarding, or disposing of any rubbish or garbage, as such terms are defined in LAMC Section 66.00, within 200 feet of any residential building between the hours of 9:00 P.M. and 6:00 A.M. of the following day, unless a permit has been duly obtained beforehand from the Board of Police Commissioners.

With respect to construction noise and vibration, the City recently published and adopted a Construction Noise and Vibration Updates to Thresholds and Methodology Report (UTM).¹⁸ This document provides updated construction noise and vibration thresholds to be used in assessing environmental impacts of projects in accordance with CEQA. These updated thresholds are discussed in Subsection 3.1, Thresholds of Significance, below.

2.4 Existing Conditions

The predominant source of noise in the vicinity of the Project Site is vehicular traffic on adjacent roadways, particularly along Pico Boulevard, which has a high volume of traffic. Other ambient noise sources in the vicinity of the Project Site include commercial activities; and other miscellaneous noise sources associated with typical urban activities such as human voices, and emergency vehicle sirens.

2.4.1.1 Noise-Sensitive Receptors

Some land uses are considered more sensitive to intrusive noise than others based on the types of activities typically engaged in at those land uses. Typically, noise-sensitive uses include residences, transient lodgings, schools, libraries, churches, hospitals, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds, and parks. Based on a review of the land uses in the vicinity of the Project Site, seven noise receptor locations were selected to

¹⁸ *City of Los Angeles, Construction Noise and Vibration Updates to Threshold and Methodology Report, August 2024. Adopted on September 25, 2024*

represent existing noise-sensitive uses within 500 feet of the Project Site (receptor locations R1 through R7). These locations represent areas with residential land uses that qualify as noise-sensitive uses according to the definition above. As discussed below, noise measurements were conducted at the seven off-site locations to establish baseline noise conditions in the vicinity of the Project Site. In addition, the measurement locations provide an adequate basis to evaluate potential noise impacts at other sensitive receptors located beyond each measurement location in the same direction from the Project Site. The locations of the seven off-site noise-sensitive receptor locations are shown on Figure 3 (on page 21) and described in Table 5 (on page 23).

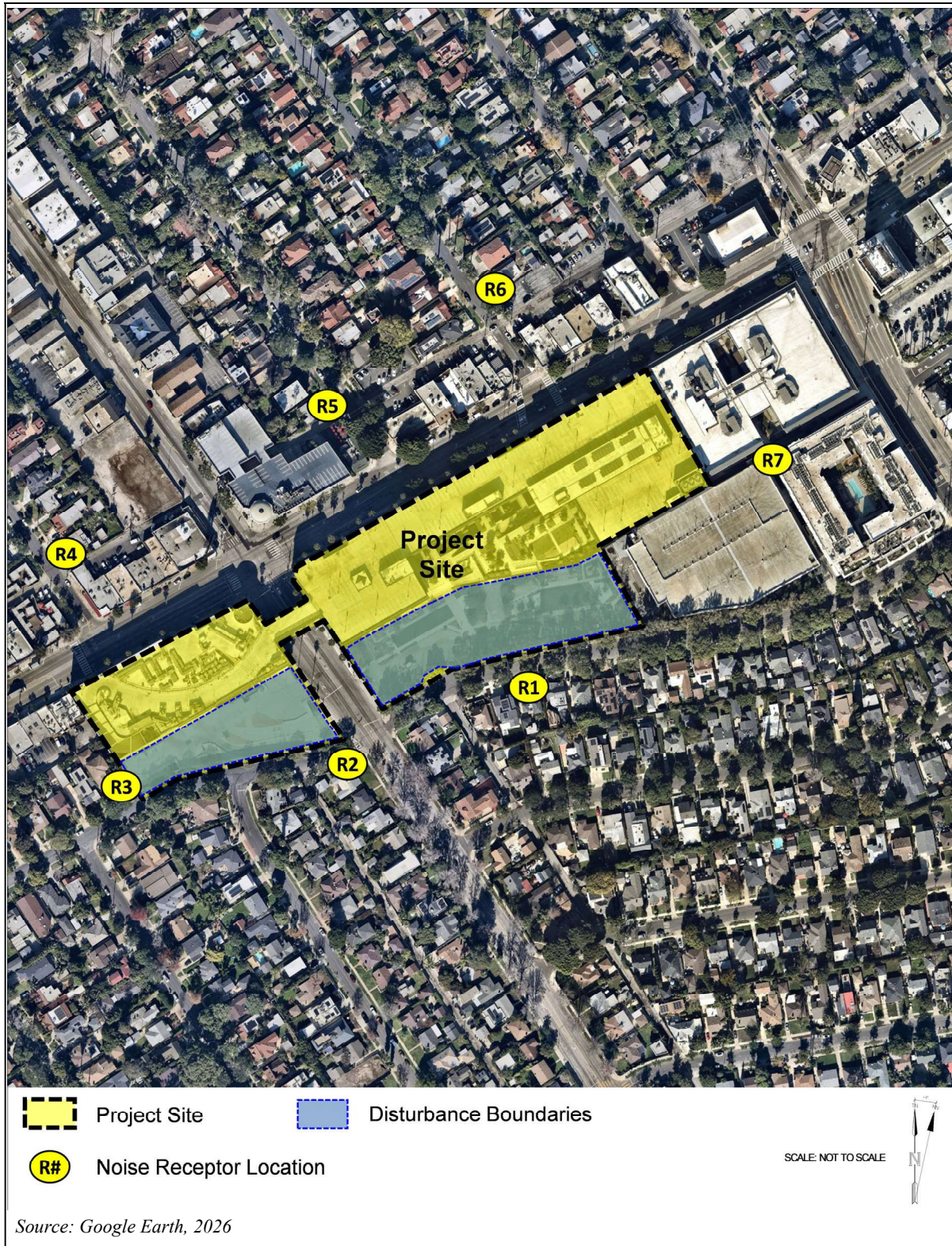


Figure 3. Noise Measurement Locations

2.4.1.2 Ambient Noise Levels

The baseline noise monitoring program was conducted on December 15, 2025, using a Larson-Davis Model 870 and a Quest Technologies Model 2900 Integrating/Logging Sound Level Meters.¹⁹ A 24-hour measurement was conducted at receptor location R1.²⁰ Two 15-minute measurements were conducted at each of the remaining receptor locations during daytime and nighttime hours. The daytime ambient noise levels were measured between 10:00 A.M. and 1:00 P.M., and the nighttime ambient noise levels were measured between 10:00 P.M. and 12:00 A.M. The results of the ambient sound measurements are summarized in Table 5 (on page 23). Based on field observations, the current ambient noise at the measurement locations is dominated by local traffic and, to a lesser extent, aircraft flyovers and other typical urban noises. As indicated in Table 5, the existing daytime ambient noise levels at the off-site noise receptor location ranged from 52.1 dBA (L_{eq}) at receptor location R7 to 64.5 dBA (L_{eq}) at receptor location R2. The measured nighttime ambient noise levels ranged from 49.9 dBA (L_{eq}) at receptor location R3 to 60.6 dBA (L_{eq}) at receptor location R2. Thus, the existing ambient noise levels at all off-site locations are above the City's presumed daytime and nighttime ambient noise levels of 50 dBA (L_{eq}) and 40 dBA (L_{eq}), respectively, for residential uses. Therefore, the measured existing ambient noise levels are used as the baseline conditions for the purposes of determining the Project's potential noise impacts.

¹⁹ These sound meters meet the minimum industry standard performance requirements for "Type 1" (Larson-Davis Model 870) and "Type 2" (Quest Technologies Model 2900) standard instruments as defined in the American National Standard Institute (ANSI) S1.4. It also meets the requirement specified in Section 111.01(l) of the LAMC that instruments be "Type S2A" standard instruments or better. The sound meter was calibrated prior to the measurements and operated according to the manufacturer's written specifications.

²⁰ A 24-hour measurement is typically conducted at one receptor location to obtain the pattern and validate the noise measurements at other receptor locations. Receptor R1 was selected as the representative long-term (24-hour) measurement location because it reflects the nearest residential land uses with the greatest potential exposure to Project-related noise sources.

Table 5. Existing Ambient Noise Levels

Receptor Location	Approximate Distance to Project Site, ^a feet	Measured Ambient Noise Levels, dBA L _{eq}		
		Daytime Hours (7 A.M. to 10 P.M.)	Nighttime Hours (10 P.M. to 7 A.M.)	CNEL (24-hour)
R1 – Single-family residential use on the south side of Ayres Avenue, south of the Project Site	50	58.5 ^b	55.6 ^b	62.9 ^c
R2 – Single-family residential use located southwest corner of Westwood Boulevard and Ayres Avenue, south of the Project Site	45	64.5	60.6	66.3 ^d
R3 – Single-family residential use located on the north side of Ayres Avenue, west of the Project Site	Adjacent to the Project Site	57.0	49.9	57.1 ^d
R4 – Single-family residential use located on the east side of Midvale Avenue, north of the Project Site	225	59.2	54.3	60.4 ^d
R5 – Single-family residential use located on the west side of Glendon Avenue, north of the Project Site	230	58.4	52.7	59.2 ^d
R6 – Single-family residential use located on the east side of Malcom Avenue, north of the Project Site	280	56.7	52.5	58.4 ^d
R7 – Multi-family residential use located at the northwest corner of Overland Avenue and Ayres Avenue, east of the Project Site	125	52.1	52.3	56.9 ^d
^a Distances are estimated based on Google Earth map and are referenced to the Project nearest boundary. ^b Levels shown for R1 represent the average hourly noise levels for the entire daytime and nighttime periods. ^c Calculated based on the measured hourly noise levels from the 24-hour noise measurement. ^d Estimated based on short-term (15-minute) noise measurement based on FTA procedures. Source: AES, 2026; Detail measurements data are provided in Appendix A.				

2.4.1.3 Existing Ground-Borne Vibration Levels

Based on field observations, the primary source of existing ground-borne vibration in the vicinity of the Project Site is vehicular travel (e.g., standard cars, refuse trucks, delivery trucks, construction trucks, school buses, and buses) on local roadways. According to the FTA technical study “Federal Transit Administration: Transit Noise and Vibration Impacts Assessments,” typical road traffic-induced vibration levels are unlikely to be perceptible by people. Specifically, the FTA study reports that “[i]t is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads.” Trucks and buses typically generate ground-borne vibration velocity levels of around 63 VdB (at 50 feet distance), and these levels could reach 72 VdB when trucks and buses pass over bumps in the

road. Per the FTA, 75 VdB is the dividing line between barely perceptible and distinctly perceptible.²¹ Therefore, existing ground vibration in the vicinity of the Project Site is assumed to be generally below the perceptible level. However, ground vibration associated with heavy trucks traveling on road surfaces with irregularities, such as speed bumps and potholes, could reach the perceptible threshold.

²¹ FTA, “Transit Noise and Vibration Impact Assessment,” Table 5-5, September 2018.

3 PROJECT IMPACT ANALYSIS

3.1 Thresholds of Significance

In accordance with the State CEQA Guidelines Appendix G, the Project would have a significant impact related to noise if it would result in the:

Threshold (a): Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

*Threshold (b): Generation of excessive groundborne vibration or groundborne noise levels;
or*

Threshold (c): For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

3.1.1 Construction Noise

As previously indicated, UCLA is not subject to municipal regulations, such as the County and City General Plans or ordinances. However, in the absence of established noise standards, UCLA may independently elect to utilize relevant standards established by other agencies for purposes of analysis. The City's UTM was developed based on input from technical experts, including a Technical Advisory Committee consisting of noise consultants and experts with decades of experience in preparing noise studies. The UTM underwent a public review process, incorporates noise thresholds used by other state and local agencies, and is supported by substantial evidence. Based on several factors, for purposes of this analysis, a significant construction noise impact would occur if off-site sensitive receptors were subjected to Project-related construction noise levels in excess of the City's Noise Standards (specifically, the City's recently published UTM). Further, this approach is appropriate, as the Project is located within the City of Los Angeles. The recommendations in this report are based on AES' expert analysis and a review of best practices for noise modeling and regulation of noise used by various agencies in California, and a policy intent to adopt clear standards that will both protect nearby sensitive receptors and allow for infill, transit-oriented development that helps to reduce VMT and associated environmental impacts. The UTM provides the following thresholds to determine whether a project would have a significant impact from construction:

- Daytime Construction Noise Thresholds
 - Increase Over Ambient

- For construction activities that occur between 7:00 A.M. and 7:00 P.M. Monday through Friday, and between 8:00 A.M. and 6:00 P.M. on Saturdays, there is no numerical threshold above ambient noise levels.
- Absolute Noise Level
 - On- and off-site construction noise during daytime hours (7:00 A.M. and 7:00 P.M. Monday through Friday, and 8:00 A.M. to 6:00 P.M. on Saturdays) are limited to a maximum 80 dBA $L_{eq(8-hour)}$ absolute threshold at sensitive uses (at the property line or at the exterior of the building), including outdoor public recreational areas owned or maintained by a public agency. This standard does not apply to private residential balconies which may or may not extend past the exterior of a building, or to private residential recreational areas.
- Nighttime Construction Noise Thresholds
 - Increase Over Ambient
 - For construction activities that occur between 7:00 P.M. and 7:00 A.M. Monday through Friday, and between 6:00 P.M. and 8:00 A.M. on Saturdays, and anytime on Sundays or national holidays, noise levels at sensitive uses would not exceed 5 dBA above the ambient noise level at the receptor.
 - Mat pours activities (and other types of concrete pour, which require an extended continuous pour beyond the allowable construction hours) that are required to occur during nighttime hours for less than five days are exempt from this provision.
 - Absolute Noise Level
 - For construction activities that occur between 7:00 P.M. and 7:00 A.M. Monday through Friday, and between 6:00 P.M. and 8:00 A.M. on Saturdays, and anytime on Sundays or national holidays, the maximum exterior noise level at sensitive uses where sleep is expected will not exceed the following:
 - 55 dBA L_{eq} for sensitive uses within older buildings that would have operable windows that may be open.
 - 65 dBA L_{eq} for sensitive uses with windows closed that are not operable and are single glazed.
 - 70 dBA L_{eq} for sensitive uses that have newer construction (i.e., the structures have been designed to ensure that an interior 45 dBA is obtained with double-paned windows)
 - Mat pour activities (and other types of concrete pour, which require an extended continuous pour beyond the allowable construction

hours) that are required to occur during nighttime hours for less than five days are exempt from this provision.

3.1.2 Operational Noise

In the context of the above questions from Appendix G of the CEQA Guidelines, UCLA has elected to utilize thresholds of significance for the Project's on-site (stationary) and off-site (mobile) operational noise sources based on the City's Noise Standards, as follows:

- The Project causes the ambient noise levels measured at the property line of affected noise-sensitive uses to increase by 3 dBA in CNEL to or within the “normally unacceptable” or “clearly unacceptable” category (see Table 3 on page 17); or
- The Project causes the ambient noise levels measured at the property line of affected noise-sensitive uses to increase by 5 dBA in CNEL or greater and remain within the “normally acceptable” or “conditionally acceptable” category; or
- Project-related on-site operational noise sources, such as outdoor building mechanical equipment, loading docks, or trash compactors, exceed the ambient noise level (hourly L_{eq}) at noise-sensitive uses by 5 dBA.²²
- Project-related off-site roadway traffic increases the ambient noise level by 3 dBA or 5 dBA in CNEL (depending on the noise exposure category) at noise-sensitive uses.²³
- Project-related composite noise levels (including both on-site and off-site sources) increase the ambient noise level by 3 dBA or 5 dBA in CNEL (depending on the noise exposure category) at noise-sensitive uses.²⁴

3.1.3 Construction Vibration

UCLA does not have an adopted significance threshold to assess vibration impacts with respect to construction and thus has elected to utilize the FTA's adopted vibration criteria (which are generally consistent with Caltrans criteria). Based on FTA guidance, impacts relative to ground-borne vibration associated with potential building damage would be considered significant if any of the following future events were to occur:²⁵

²² Based on LAMC. This hourly threshold is used to address impacts especially during nighttime hours when surrounding uses are more sensitive to noise.

²³ Based on the L.A. CEQA Thresholds Guide.

²⁴ Based on the L.A. CEQA Thresholds Guide.

²⁵ The FTA vibration criteria for building damage are consistent with Caltrans vibration criteria.

- Project construction activities cause ground-borne vibration levels to exceed the following building damage thresholds for identified structures:
 - Building extremely susceptible to vibration damage, such as historic buildings: 0.12 PPV
 - Non-engineered timber and masonry buildings: 0.20 PPV
 - Engineered concrete and masonry (no plaster): 0.3 PPV
 - Reinforced-concrete, steel or timber (no plaster): 0.5 PPV
- Project construction activities cause ground-borne vibration levels to exceed 80 VdB at the off-site sensitive uses.

3.2 Methodology

3.2.1 On-Site Construction Activities

Noise impacts due to on-site construction activities associated with the Project were evaluated by estimating the construction-related noise levels at representative sensitive receptor locations and comparing these to the absolute threshold of 80 dBA. Construction noise associated with the Project was calculated based on the Project's anticipated construction equipment inventory, construction durations, and construction schedule. The construction noise model for the Project is based on maximum construction equipment noise levels as published by the FHWA's "Roadway Construction Noise Model (FHWA 2006)."²⁶ These maximum noise levels would occur when equipment is operating under full power conditions (i.e., the equipment engine at maximum speed). However, equipment used on a typical construction site often operates under less than full power conditions, or partial power. To more accurately characterize construction-period noise levels, the average (Hourly L_{eq}) noise level associated with each construction stage is calculated based on the quantity, type, and usage factors for each type of equipment that would be used during each construction stage.²⁷ These noise levels are typically associated with multiple pieces of equipment operating simultaneously. Consistent with the UTM methodology, the on-site construction-related noise levels assume distribution of all construction equipment throughout the limits of disturbance within the Project Site. The methodology includes construction equipment operating as close to the off-site receptors as possible. The on-site construction noise levels were then calculated using the SoundPLAN

²⁶ The reference noise levels for construction equipment from the FHWA are based on measurements of newer construction equipment (published in 2006), rather than the noise levels from a USEPA report referenced in other agency publications dating to 1971.

²⁷ Pursuant to the FHWA Roadway Construction Noise Model User's Guide, 2006, page 7, the usage factor is the percentage of time during a construction noise operation that a piece of construction is operating at full power.

(version 9.1) computer noise prediction model.²⁸ SoundPLAN is widely used by acoustical engineers as a noise modeling tool for environmental noise analysis. The ambient noise levels at surrounding sensitive receptor locations were based on field measurement data (see Table 5 on page 23).

3.2.2 Off-Site Construction Haul Trucks

Off-site construction noise impacts from haul trucks associated with the Project were analyzed using construction-related off-site truck volumes obtained from construction data prepared for the Project, provided by UCLA's Construction Management Services. The off-site construction noise levels from haul trucks associated with the Project were analyzed using the FHWA's Traffic Noise Model (TNM). The TNM traffic noise prediction model is the current standard computer noise model used by Caltrans for traffic noise studies. Noise impacts were determined by comparing the predicted noise level of construction-related haul trucks plus the ambient noise levels along the Project's anticipated haul route(s) against the significance thresholds.

3.2.3 On-Site Stationary Noise Sources (Operation)

The Project's potential on-site stationary point-source noise impacts were evaluated by: (1) identifying the noise levels that would be generated by the Project's stationary noise sources, such as rooftop mechanical equipment, outdoor spaces, loading docks, and emergency generators; (2) calculating the noise level from each noise source at the identified surrounding representative sensitive-receptor property line locations; and (3) comparing such noise levels to the measured ambient noise levels to determine significance. The on-site stationary noise sources were calculated using SoundPLAN computer noise prediction model.

3.2.4 Off-Site Roadway Noise (Operation)

As discussed in the Project's Vehicle Miles Traveled (VMT) Screening Assessment, the Project is expected to result in a net decrease of 10,659 daily vehicle trips when compared to estimated trips generated by the shopping center during its 35-year operational history on the Project Site.²⁹ As the off-site traffic noise levels are dependent on the traffic volumes on the roadways, a substantial reduction in daily vehicle trips would result in a reduction in traffic noise levels. As such, no further noise analysis of general off-site roadway traffic associated with Project operations is required.

However, noise associated with Project-generated delivery trucks was analyzed using the SoundPLAN computer noise prediction model (based on FHWA's TNM emission levels) and

²⁸ SoundPLAN GmbH, SoundPLAN version 9.1, 2025.

²⁹ Fehr & Peers, UCLA Research Park Vehicle Miles Traveled Screening Assessment, Table 2, April 2026.

Project-specific truck traffic data from the Project's Dock Feasibility Study.³⁰ Roadway noise levels due to delivery trucks were calculated at the sensitive receptor locations based on the estimated Project-generated delivery trucks volumes, conservatively assuming that 100% of Project delivery trucks would utilize Westwood Boulevard north to Pico Boulevard, with 100% going east and 100% going west on Pico Boulevard. Roadway noise was calculated and compared to ambient noise levels to determine Project-related noise impacts for operational off-site roadway noise.

3.2.5 Construction Vibration

Ground-borne vibration impacts due to the Project's construction activities were evaluated by identifying potential vibration sources (i.e., construction equipment), estimating the vibration levels at the identified representative sensitive-receptor locations, and comparing the Project's vibration levels at those locations to the applicable vibration significance criteria, described above. Vibration levels were calculated based on the FTA published standard vibration velocities for various construction equipment operations. The vibration velocities were calculated based on a point source with standard distance propagation conditions, pursuant to FTA procedures. Construction of the Project would not use impact pile driving methods and as such, impact pile driving vibration is not included in this construction vibration analysis.³¹

3.2.6 Operational Vibration

The primary sources of vibration related to the operation of the Project would be vehicle circulation within the site driveways/access routes and drop-off zones, as well as off-site vehicular trips. However, as discussed above, vehicle-induced vibration is generally not perceptible by people. The Project would also include typical commercial-grade stationary mechanical equipment, such as air-handling units (mounted at grade or roof level), that would include manufacturer-specified vibration-attenuation mounts to reduce vibration transmission. The Project does not include land uses that would generate high levels of vibration. In fact, given that some of the research equipment and activities proposed to occur on-site are sensitive to vibration effects, the Project would be designed to minimize vibration transmission. In addition, ground-borne vibration attenuates rapidly as a function of distance from the vibration source. Therefore, operation of the Project would not increase the existing vibration levels in the immediate vicinity of the Project Site, and, as such, vibration impacts associated with operation of the Project are concluded to be less than significant. No further analysis of operational vibration is provided herein.

³⁰ St. Onge Company, *UCLA Research Park East Dock Feasibility*, July 2025.

³¹ FTA, "Transit Noise and Vibration Impact Assessment," Table 7-4, September 2018.

3.3 Analysis of Project Impacts

Threshold (a): Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

3.3.1 Construction Noise

Project construction would occur in phases beginning in 2026, with the Research Park East core and shell improvements and Phase 1 tenant improvements anticipated to be complete in late 2027. Subsequent phases would involve additional tenant improvements in Research Park East, associated support functions such as the central loading dock and rooftop mechanical areas, construction of the new Conference Center, and a full seismic retrofit and tenant improvements at Research Park West. Earthwork would generally be limited to areas south of the existing buildings to prepare portions of the site for new construction and to modify on-site circulation and landscaping. Full buildout is anticipated by 2035. However, to represent a conservative scenario, the noise analysis is based on a single-phase of construction beginning in 2026 and concluding in 2030.

As required by LRDP PP 4.9-7(a) and based on expert analysis and other substantial evidence, construction activities would generally occur Monday through Friday from 7:00 A.M. to 9:00 P.M. and Saturday from 8:00 A.M. to 6:00 P.M.. However, a Project-specific implementing measure is proposed to further limit construction activities Monday through Friday to 7:00 A.M. to 7:00 P.M., consistent with the daytime construction noise threshold. Construction delivery/haul trucks would travel on approved truck routes between the Project Site and Interstate (I)-10. Trucks leaving the Project Site are expected to exit on Westwood Boulevard, head north to Pico Boulevard, east to Overland Avenue, and then to I-10.

3.3.1.1 On-Site Construction Noise

Noise impacts from Project-related construction activities occurring within or adjacent to the Project Site would be a function of the noise generated by construction equipment, the location of the equipment, the timing and duration of the noise-generating construction activities, and the relative distance to noise-sensitive receptors. Construction activities for the Project would generally include limited demolition, grading, and new building construction in limited locations south of the existing buildings, internal building construction (i.e., tenant improvements), and paving. Each stage of construction would involve the use of various types of construction equipment and would, therefore, have its own distinct noise characteristics. Noise from construction equipment would generate both steady-state and episodic noise that could be heard within and adjacent to the Project Site. In addition, certain Project construction

phases would have the potential to overlap. Therefore, overlapping construction noise activities were evaluated to determine the full extent of potential impacts.

Individual pieces of construction equipment that would typically be used for construction produce maximum noise levels of 74 dBA to 90 dBA at a reference distance of 50 feet from the construction equipment, as shown in Table 6 (on page 33). The construction equipment noise levels produced at the 50-foot distance (Reference Maximum Noise Levels at 50 Feet) shown in Table 6 are taken from the FHWA Roadway Construction Noise Model User's Guide (RCNM, 2006), which is a technical report containing actual measured noise data for construction equipment.³² As previously discussed, these maximum noise levels occur when equipment is operating under full power conditions (i.e., the equipment engine operating at maximum speed). However, equipment used on construction sites often operates under less than full power conditions, or partial power. To characterize construction-period noise levels more accurately, the average (Hourly L_{eq}) noise level associated with each construction stage is calculated based on the quantity, type, and usage factors for each type of equipment that would be used during each construction stage.³³ These noise levels are typically associated with multiple pieces of equipment operating simultaneously.

³² FHWA, *Roadway Construction Noise Model User's Guide*, 2006.

³³ Pursuant to the FHWA *Roadway Construction Noise Model User's Guide*, 2006, the usage factor is the percentage of time during a construction noise operation that a piece of construction is operating at full power.

Table 6. Construction Equipment Noise Emission Reference Levels and Usage Factors

Type of Equipment	Acoustical Usage Factor (%)	Reference Maximum Noise Levels at 50 Feet, ^a L _{max} (dBA)
Air Compressor	40	78
Aerial Lift	10	75
Backhoe	40	78
Cement and Mortar Mixers	50	85
Concrete Mixer Truck	40	79
Concrete Saw	20	90
Crane (mobile)	16	81
Delivery Truck	40	74
Dump/Haul Truck	40	76
Forklift	20	75
Jackhammer	20	90
Paving Equipment	50	77
Pump	50	81
Rollers	20	80
Rubber Tired Loader	40	79
Tractors/Loader/Backhoe	40	84
Water Truck	10	82
Welders	40	74
^a Construction equipment noise levels are based on the FHWA RCNM.		
Source: FHWA Roadway Construction Noise Model User's Guide, Table 1, 2006		

Table 7 (on page 34) provides the estimated construction noise levels for the Project's construction phases, including potential overlapping construction activities, at the seven off-site noise-sensitive receptor locations, with and without the noise barrier required by previously adopted LRDP MM 4.9-7. As indicated in Table 7, the estimated noise levels during all stages of Project construction, including overlapping construction, without a noise barrier would be below the significance threshold at all off-site receptor locations, except for receptor locations R2 and R3, which represent residential uses located south and west of Research Park West. The estimated noise levels at receptor locations R2 and R3 would exceed the 80 dBA significance threshold by up to 1.0 and 0.2 dBA (L_{eq(8-hour)}), respectively, during the demolition plus grading phases without the noise barrier. However, in accordance with previously adopted LRDP MM 4.9-7 which would be incorporated into the proposed Project (with minor modifications to reflect site conditions), solid temporary noise barriers would be constructed to reduce the construction-related noise levels at the nearest receptors, including R2 and R3. As indicated in Table 7, the estimated construction noise levels with the required noise barrier would be reduced to a less than significant level.

Table 7. On-Site Construction Noise Impacts by Construction Phase

Off-Site Receptor Location	Estimated Noise Levels by Construction Phase, dBA (L _{eq} (8-hour))						Significance Criteria, ^e dBA (L _{eq})	Maximum Noise Exceedance Above the Criteria, dBA (L _{eq})	Significant Impact?
	Demo. ^a	Grading ^b	Building Construction	Paving	Demo + Grading ^c	Building Const. + Paving ^d			
<i>Without Noise Barrier (LRDP MM 4.9-7)</i>									
R1	79.3	68.0	73.7	72.0	79.6	75.9	80.0	0.0	No
R2	80.7	69.4	75.0	73.3	81.0	77.2	80.0	1.0	Yes
R3	79.9	68.6	74.3	72.6	80.2	76.5	80.0	0.2	Yes
R4	51.4	40.1	45.7	44.0	51.7	47.9	80.0	0.0	No
R5	61.0	49.7	55.3	53.6	61.3	57.5	80.0	0.0	No
R6	46.8	35.5	41.2	39.4	47.1	43.4	80.0	0.0	No
R7	50.3	39.0	44.7	43.0	50.6	46.9	80.0	0.0	No
<i>With Noise Barrier (LRDP MM 4.9-7)</i>									
R1	74.3	63.0	68.7	67.0	74.6	70.9	80.0	0.0	No
R2	75.7	64.4	70.0	68.3	76.0	72.2	80.0	0.0	No
R3	74.9	63.6	69.3	67.6	75.2	71.5	80.0	0.0	No
R4	51.4	40.1	45.7	44.0	51.7	47.9	80.0	0.0	No
R5	61.0	49.7	55.3	53.6	61.3	57.5	80.0	0.0	No
R6	46.8	35.5	41.2	39.4	47.1	43.4	80.0	0.0	No
R7	50.3	39.0	44.7	43.0	50.6	46.9	80.0	0.0	No
^a Consists primarily of interior demolition and limited exterior site areas. The existing buildings would remain.									
^b Grading activities would be limited to areas south of the existing buildings.									
^c Activities are anticipated to overlap for a total of two months.									
^d Activities are anticipated to overlap for a total of two months.									
^e Significance thresholds are based on the City's Construction Noise and Vibration - Updates to Thresholds and Methodology, August 2024.									
Source: AES, 2026. See Appendix B.									

Noise attenuation would also be provided with the Project's incorporation of LRDP PP 4.9-7(b), which requires the muffling or shielding of equipment; and LRDP PP 4.9-7(c), which requires that stationary construction equipment material and vehicle staging be placed away from sensitive receptors. Although noise levels would be below the significance threshold, even with the required noise attenuation measures, construction activities would be heard at neighboring residences above the existing noise levels and could create temporary annoyance. The Project also incorporates LRDP PP 4.9-8, which requires the University to notify off-campus constituents of construction activities. With adherence to established construction hours and incorporation of the previously adopted LRPD PPs and MMs described above, the construction activities associated with the Project would not conflict with standards established to reduce construction-related noise and would be less than significant.

3.3.1.2 Off-Site Construction Noise

In addition to on-site construction noise sources, other noise sources may include materials delivery and haul trucks (collectively called construction trucks), as well as construction worker vehicles accessing the Project Site during construction. Typically, construction trucks generate higher noise levels than construction worker vehicles. Accordingly, the major noise sources associated with off-site construction trucks would be from the material delivery/concrete/haul trucks. With regard to haul routes, as described above, construction haul trucks would travel between the Project Site and I-10 via northbound Westwood Boulevard, eastbound Pico Boulevard, and southbound Overland Avenue. There are no noise-sensitive uses along the relevant segment of Pico Boulevard.

Table 8 (on page 36) provides the estimated number of construction-related truck trips (daily and hourly trips) for the various stages of construction. As shown, the peak construction period (i.e., in terms of hourly truck trips) with the highest number of construction trucks would occur during overlapping demolition and grading activities, with up to 10 truck trips per hour. While any single truck passing may be audible, it is expected that the noise from Project-related construction truck traffic would be indistinguishable from typical traffic along the construction haul routes. As provided in Table 8, the estimated noise levels from construction-related trucks would range from 49.4 dBA (L_{eq}) to 58.9 dBA (L_{eq}) along the anticipated truck routes (Westwood Boulevard adjacent to the Project Site, eastbound Pico Boulevard, and southbound Overland Avenue), which would be well below the 80 dBA significance threshold and the existing ambient noise levels (64.5 dBA (L_{eq}) as measured at receptor R2 adjacent to Westwood Boulevard).³⁴

³⁴ *Estimated noise levels due to construction trucks are provided in the noise calculation worksheets included in Appendix B of this report.*

The Project also includes construction of limited off-site improvements, specifically a new pedestrian crosswalk across Westwood Boulevard at the Project Site driveways (includes relocation of streetlights plus new ADA ramps). Table 9 (on page 37) provides the estimated construction noise levels for the off-site improvements at the seven off-site receptor locations. As indicated in Table 9, the estimated noise levels from Project construction of off-site improvements would be below the significance threshold at all off-site receptor locations, except for receptor location R2. The estimated noise levels at receptor location R2 would exceed the 80 dBA significance threshold by up to 0.7 dBA ($L_{eq(8-hour)}$) without the noise barrier required by previously adopted LRDP MM 4.9-7. However, with a noise barrier, the construction-related noise levels at receptor R2 would be reduced to a less than significant level, as indicated in Table 9. Therefore, noise impacts associated with off-site construction (construction trucks and off-site improvements) would be less than significant. No Project-specific mitigation measures would be required.

Table 8. Construction Truck Noise by Construction Phase

Construction Stage	Estimated Number of Construction Truck Trips per Day	Estimated Number of Construction Truck Trips per Hour ^a	Estimated Truck Noise Levels Along the Project Truck Routes, ^b dBA (L_{eq})		
			Westwood Blvd.	Pico Blvd.	Overland Ave.
Demolition	16	3	54.2	54.2	54.2
Grading	40	7	57.9	57.9	57.9
Building Construction	30	4	55.4	55.4	55.4
Paving/Landscape	40	5	56.4	56.4	56.4
Demolition + Grading	56	10	59.4	59.4	59.4
Building Construction + Paving/Landscape	70	9	58.9	58.9	58.9
Off-Site Improvements	4	1	49.4	49.4	49.4
Significance Criteria			80.0	80.0	80.0
Maximum Noise Exceedance Above the Criteria, dBA (L_{eq})			0.0	0.0	0.0
Significance Impact?			No	No	No
^a For construction trucks, the number of hourly trips is based on an hourly average, assuming a uniform distribution of trips over a 6-hour for haul trucks (demolition and grading phases) and an 8-hour workday for material delivery trucks (building construction and paving/landscape phases).					
^b Estimated truck noise levels are similar for all three haul route segments, as the distances from the roadway centerlines to the nearest noise-sensitive receptors are generally comparable.					
Source: AES, 2026.					

Table 9. Off-Site Improvements Construction Noise Impacts

Off-Site Receptor Location	Estimated Off-Site Construction Noise Levels, dBA (L _{eq})		Significance Criteria, ^e dBA (L _{eq})	Maximum Noise Exceedance Above the Criteria, dBA (L _{eq})		Significant Impact?
	Without Noise Barrier (LRDP MM 4.9-7)	With Noise Barrier (LRDP MM 4.9-7)		Without Noise Barrier (LRDP MM 4.9-7)	With Noise Barrier (LRDP MM 4.9-7)	
R1	67.6	67.6	80.0	0.0	0.0	No
R2	80.7	77.7	80.0	0.7	0.0	No
R3	59.9	59.9	80.0	0.0	0.0	No
R4	42.0	42.0	80.0	0.0	0.0	No
R5	42.9	42.9	80.0	0.0	0.0	No
R6	38.9	38.9	80.0	0.0	0.0	No
R7	38.4	38.4	80.0	0.0	0.0	No
^a For construction trucks, the number of hourly trips is based on an hourly average, assuming a uniform distribution of trips over a 6-hour workday for haul trucks (demolition and grading phases) and an 8-hour workday for material delivery trucks (building construction and paving/landscape phases).						
Source: AES, 2026.						

3.3.2 Operational Noise

This section provides a discussion of potential operational noise impacts at nearby noise-sensitive receptors. Specific operational noise sources addressed herein are: (a) on-site stationary noise sources, including outdoor-mounted mechanical equipment (e.g., heating, ventilation, and air conditioning [HVAC] equipment), loading areas and trash compactors, outdoor spaces, and emergency generators; and (b) off-site mobile (roadway traffic) noise sources.

3.3.2.1 Mechanical Equipment

As part of the Project, new building mechanical equipment (e.g., air ventilation equipment) would be located at the building roof level. Although operation of this equipment would generate noise, all outdoor mechanical equipment would be shielded from off-site noise-sensitive receptors, as provided in PP 4.9-6(a). Table 10 (on page 38) presents the estimated on-site mechanical equipment noise levels at the off-site receptor locations with the required shielding. As shown in Table 10, the estimated noise levels from the mechanical equipment would range from 39.4 dBA (L_{eq}) at receptor location R7 to 56.7 dBA (L_{eq}) at receptor location R1. The estimated noise levels would be consistent with the existing ambient noise levels at all off-site receptors, and when added to the ambient noise level at each sensitive receptor location yields a noise level that would also be below the significance criteria of 5 dBA (L_{eq})

above the ambient noise levels. Therefore, noise impacts from mechanical equipment would be less than significant.

Table 10. Mechanical Equipment Noise Levels

Receptor Location	Existing Ambient Noise Levels, dBA (L _{eq})	Estimated Noise from Project Mechanical Equipment, dBA (L _{eq})	Ambient + Project Noise Levels, dBA (L _{eq})	Significance Criteria ^a dBA (L _{eq})	Exceedance over Significance Criteria	Significant Impact?
R1	55.6	56.7	59.2	60.6	0.0	No
R2	60.6	52.0	61.2	65.6	0.0	No
R3	49.9	41.5	50.5	54.9	0.0	No
R4	54.3	47.0	55.0	59.3	0.0	No
R5	52.7	55.5	57.3	57.7	0.0	No
R6	52.5	46.0	53.4	57.5	0.0	No
R7	52.1	39.4	52.3	57.1	0.0	No
^a Significance criteria are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower plus 5 dBA, based on the City of Los Angeles Noise Regulations.						
Source: AES, 2026, See Appendix C.						

3.3.2.2 Loading Docks and Trash Compactors

Under the Project, the existing loading docks at Block 1 and Block 4 would continue to be used. While the Block 1 dock is currently located along the southern building façade of Research Park East, an enclosed loading area/service yard would be constructed adjacent to the existing dock, thus moving all loading activities indoors. The Block 4 dock would remain in its current location inside the Research Park West parking structure. The proposed central loading dock has been designed as a subterranean facility, with truck entry at the ground level and loading activities occurring on Level B1. The primary noise sources associated with loading activities would be the delivery trucks. Additionally, trash compactors would be located within the Block 1 service yard as well as the central loading dock facility.

Based on measured noise levels from comparable facilities, delivery trucks and trash compactors generate noise levels of approximately 70 dBA (L_{eq}) and 66 dBA (L_{eq}), respectively, at a distance of 50 feet.³⁵ The Project is estimated to receive up to 111 daily deliveries, with 98 daily deliveries at Research Park East and 13 daily deliveries at Research Park West.³⁶ Table 11 (on page 39) presents the estimated noise levels at the off-site sensitive

³⁵ RK Engineering Group, Inc., *Wal-Mart/Sam's Club Reference Noise Level Study*, 2003.

³⁶ St. Onge Company, *UCLA Research Park East Dock Feasibility Study*, 2025.

receptors resulting from loading dock and trash compactor operations. As indicated in Table 11, these estimated noise levels would range from 13.9 dBA (L_{eq}) at receptor location R6 to 47.4 dBA (L_{eq}) at receptor location R2, which would be below the existing ambient noise levels. When added to the ambient noise level at each sensitive receptor location, noise associated with the loading docks and trash compactors would be below the significance threshold of 5 dBA (L_{eq}) above the ambient noise levels. Therefore, noise impacts from loading and trash compactor operations would be less than significant.

Table 11. Loading Docks and Trash Compactor Noise Levels

Receptor Location	Existing Ambient Noise Levels, dBA (L_{eq})	Estimated Noise from Project Loading Docks and Trash Compactors, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Criteria ^a dBA (L_{eq})	Exceedance over Significance Criteria	Significant Impact?
R1	55.6	47.1	56.2	60.6	0.0	No
R2	60.6	47.4	60.8	65.6	0.0	No
R3	49.9	46.6	51.6	54.9	0.0	No
R4	54.3	19.4	54.3	59.3	0.0	No
R5	52.7	19.1	52.7	57.7	0.0	No
R6	52.5	13.9	52.5	57.5	0.0	No
R7	52.1	17.7	52.1	57.1	0.0	No
^a Significance criteria are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower plus 5 dBA, based on the City of Los Angeles Noise Regulations.						
Source: AES, 2026, See Appendix C.						

3.3.2.1 Outdoor Spaces

The Project would include various outdoor spaces, including a paseo, an open atrium, and a garden above the central loading dock at Research Park East; a landscaped plaza and terrace at Research Park West; and a series of terraces/gardens at Levels 1, 2, 3 and the Roof Level. Noise sources associated with outdoor uses typically include noise from people gathering and conversing. For this operational noise analysis, reference noise levels of 65 dBA for a male and 62 dBA for a female speaking in a raised voice were used for analyzing potential noise impacts from people gathering at the outdoor spaces.³⁷ To analyze a typical noise scenario, it was assumed that up to 50 percent of the people (half of which would be male and the other half female) would be talking at the same time. In addition, the hours of operation for use of the outdoor areas were conservatively assumed to be from 7:00 A.M. to 12:00 A.M. Table 12

³⁷ Cyril M. Harris, *Handbook of Acoustical Measurements and Noise Control*, Third Edition, 1991, Table 16.1.

(below) provides hypothetical estimated numbers of people at the outdoor spaces based on conservative assumptions.

Table 12. Outdoor Open Space Use Assumptions

Outdoor Spaces	Open Space Area, square feet	Estimated Total Number of People ^a
Research Park East		
- Level 1: Paseo, Atrium and Outdoor Terraces	4,872	325
- Level 2: Outdoor Terraces and Gardens	10,319	688
- Level 3: Outdoor Terraces and Gardens	10,464	698
- Roof Level: Outdoor Terraces	13,000	867
Research Park West		
- Level 1: Outdoor Terraces	3,000	200
- Level 2: Outdoor Terraces	342	23
- Roof Level: Outdoor Terraces and Westwood Bridge	18,500	1,234
^a Estimated based on 15 square feet per person. Source: AES, 2026,		

Table 13 (below) presents the estimated noise levels at the off-site sensitive receptors resulting from the use of the Project's outdoor spaces. The estimated noise levels were calculated based on the assumption that the outdoor spaces would be fully occupied and operating concurrently, to represent a worst-case noise analysis. As presented in Table 13, the estimated noise levels from the outdoor spaces would range from 27.1 dBA (L_{eq}) at receptor location R7 to 51.3 dBA (L_{eq}) at receptor locations R1 and R2, which would be below the existing ambient noise levels. When added to the ambient noise level at each sensitive receptor location, the Project noise levels associated with full occupancy of the outdoor spaces would be below the significance criteria of 5 dBA (L_{eq}) above the ambient noise levels. Therefore, noise impacts from the outdoor spaces would be less than significant.

Table 13. Outdoor Spaces Noise Levels

Receptor Location	Existing Ambient Noise Levels, dBA (L_{eq})	Estimated Noise from Outdoor Uses, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Criteria ^a dBA (L_{eq})	Exceed over Significance Criteria	Significant Impact?
R1	55.6	51.3	57.0	60.6	0.0	No
R2	60.6	51.3	61.1	65.6	0.0	No
R3	49.9	43.7	50.8	54.9	0.0	No
R4	54.3	36.7	54.4	59.3	0.0	No
R5	52.7	37.1	52.8	57.7	0.0	No
R6	52.5	33.1	52.5	57.5	0.0	No
R7	52.1	27.1	52.1	57.1	0.0	No
^a Significance criteria are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower plus 5 dBA, based on the City of Los Angeles Noise Regulations. Source: AES, 2026, See Appendix C.						

3.3.2.2 Emergency Generators

Project operations would include periodic testing of emergency generators located at the ground level of Research Park West (existing generator) and at the roof level of Research Park East. The emergency generators would be provided with a Quiet Site II Second Stage sound enclosure to minimize noise levels.³⁸ By their nature, emergency generators are only operated during a major loss of power to keep critical equipment and building systems running. However, periodic testing of the emergency generators would be required and is expected to occur during the daytime hours, proceeding with one generator at a time. Table 14 (below) presents the estimated noise levels at the off-site sensitive receptors resulting from the periodic testing of the emergency generators. As indicated in Table 14, the estimated noise levels from periodic testing would range from 33.4 dBA (L_{eq}) at receptor location R4 to 58.4 dBA (L_{eq}) at receptor location R3. The estimated noise levels would be consistent with the existing ambient noise levels at all off-site receptors, and when added to the ambient noise level at each sensitive receptor location yields a noise level that would also be below the significance criteria of 5 dBA (L_{eq}) above the ambient noise levels. Therefore, noise impacts from periodic testing of the emergency generators would be less than significant.

Table 14. Emergency Generators Noise Levels

Receptor Location	Existing Ambient Noise Levels, dBA (L_{eq})	Estimated Noise from Project Emergency Generators Testing dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Criteria ^a dBA (L_{eq})	Exceed over Significance Criteria	Significant Impact?
R1	58.5	49.7	59.0	63.5	0.0	No
R2	64.5	49.4	64.6	69.5	0.0	No
R3	57.0	58.4	60.8	62.0	0.0	No
R4	59.2	33.4	59.2	64.2	0.0	No
R5	58.4	40.1	58.5	63.4	0.0	No
R6	56.7	41.2	56.8	61.7	0.0	No
R7	52.1	35.4	52.2	57.1	0.0	No
^a Significance criteria are equivalent to the measured daytime ambient noise levels plus 5 dBA, based on the City of Los Angeles Noise Regulations. It is assumed that emergency generator testing would occur during the daytime hours.						
Source: AES, 2026. See Appendix C.						

³⁸ Diesel Generator Set with Quiet Site II Second Stage sound enclosure, 74 dBA at 7 meters. This noise level conservatively does not take into consideration the noise reduction that can be attributed to the short-term nature of the emergency generator testing (estimated to be approximately 60 minutes).

3.3.2.3 Off-Site Mobile Noise Sources

Project operations would include delivery truck trips, which would generate traffic noise. As indicated above, there would be up to 111 daily deliveries to the Project. Table 15 (below) presents the estimated noise levels associated with the Project's off-site traffic (traveling along Westwood Boulevard and Pico Boulevard) at the off-site receptor locations. As shown in Table 15, the estimated noise levels from the off-site delivery trucks would range from 13.7 dBA (L_{eq}) at receptor location R7 to 52.8 dBA (L_{eq}) at receptor location R2. The estimated noise levels would be below the existing ambient noise levels. In addition, the estimated ambient noise levels with the addition of the noise levels generated by the Project off-site truck trips would be below the significance criteria of 5 dBA (L_{eq}) above the ambient noise levels. Therefore, noise impacts from the off-site delivery truck trips would be less than significant.

Table 15. Off-Site Traffic Noise Levels

Receptor Location	Existing Ambient Noise Levels, dBA (L_{eq})	Estimated Noise from Project Off-Site Traffic, dBA (L_{eq})	Ambient + Project Noise Levels, dBA (L_{eq})	Significance Criteria ^a dBA (L_{eq})	Exceed over Significance Criteria	Significant Impact?
R1	55.6	45.8	56.0	60.6	0.0	No
R2	60.6	52.8	61.3	65.6	0.0	No
R3	49.9	34.2	50.0	54.9	0.0	No
R4	54.3	39.6	54.4	59.3	0.0	No
R5	52.7	41.8	53.0	57.7	0.0	No
R6	52.5	41.6	52.8	57.5	0.0	No
R7	52.1	13.7	52.1	57.1	0.0	No
^a Significance criteria are equivalent to the measured daytime or nighttime ambient noise levels, whichever is lower plus 5 dBA, based on the City of Los Angeles Noise Regulations.						
Source: AES, 2026, See Appendix C.						

3.3.2.4 Composite Noise Impacts from Project Operations

In addition to considering the Project's potential noise impacts to neighboring noise-sensitive receptors from each individual specific on-site and off-site noise source (e.g., mechanical equipment, loading docks, trash compactors, outdoor spaces, emergency generators, and off-site traffic), an evaluation of potential composite noise level increases (i.e., noise levels from all on-site noise sources combined) at the analyzed sensitive receptor locations was performed. This evaluation of composite noise levels from all Project-related noise sources, evaluated using the CNEL noise metric, was conducted to determine the total contributions at the noise-sensitive receptor locations. Table 16 (on page 44) presents the estimated composite noise levels in terms of CNEL at the seven off-site sensitive receptor locations resulting from Project-related noise sources. As indicated in Table 16, the Project would result in an increase in composite noise levels ranging from 0.4 dBA at receptor location R7 to 4.8 dBA at receptor

location R5. The composite noise level from Project operation at all seven receptor locations would be below the 5-dBA significance criterion, as the ambient plus Project composite noise level falls within the conditionally acceptable (55 to 70 CNEL) range for residential land use categories. Therefore, the Project composite noise impacts would be less than significant.

Table 16. Composite Noise Impacts Prior to Mitigation

Receptor Location	Existing Ambient Noise Levels (CNEL (dBA))	Calculated Project-Related Noise Sources (CNEL (dBA))					Project Composite Noise Levels (CNEL (dBA))	Ambient Plus Project Composite Noise Levels (CNEL (dBA))	Increase in Noise Levels due to Project (CNEL (dBA))	Significance Threshold ^a (CNEL (dBA))	Significant Impact?
		Traffic	Mechanical	Loading	Outdoor Spaces	Emergency Generators					
R1	62.9	46.5	63.4	47.8	48.8	42.9	63.8	66.4	3.5	67.9	No
R2	66.3	53.5	59.2	48.1	49.5	42.6	60.9	67.4	1.1	71.3	No
R3	57.1	34.9	48.2	47.3	34.7	51.6	54.3	58.9	1.8	62.1	No
R4	60.4	40.3	53.7	20.1	24.3	26.6	53.9	61.3	0.9	65.4	No
R5	59.2	42.5	62.2	19.8	30.9	33.3	62.2	64.0	4.8	64.2	No
R6	58.4	42.3	52.7	14.6	24.3	34.4	53.1	59.5	1.1	63.4	No
R7	56.9	14.4	46.1	18.4	25.8	28.6	46.2	57.3	0.4	61.9	No

^a Significance thresholds are equivalent to the existing ambient noise levels plus 3 dBA if the estimated noise levels (ambient plus Project) fall within the “normally unacceptable” or “clearly unacceptable” land use categories (see Table 3 on page 16); or ambient noise levels plus 5 dBA if the estimated noise levels fall within the “normally acceptable” or “conditionally acceptable” land use categories, based on the City of Los Angeles Noise Element. If the estimated noise levels exceed those significance thresholds, a potentially significant noise impact is identified.

Source: AES, 2026. See Appendix C.

Threshold (b): Would the Project result in the exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

3.3.3 Construction Vibration

Construction activities can generate varying degrees of ground vibration, depending on the construction procedures and the type of construction equipment used. The operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies, depending on soil type, ground strata, and construction characteristics of the receptor buildings. The results from vibration can range from no perceptible effects at the lowest vibration levels to low rumbling sounds and perceptible vibration at moderate levels. However, ground-borne vibrations from construction activities rarely reach levels that damage structures.

3.3.3.1 Building Damage Impacts from On-Site Construction

With regard to potential building damage, the Project would generate ground-borne vibration during demolition and trenching activities when heavy construction equipment, such as jackhammers and loaded trucks, would be used. FTA has published standard vibration velocities for various construction equipment operations. Table 17 (on page 46) provides the estimated ground vibration velocity levels (in terms of inch per second PPV) at the nearest off-site structures to the Project Site. The assessment of construction vibration for potential building damage due to on-site construction compares the estimated vibration levels generated during construction of the Project to the 0.2 PPV significance criterion for the nearest residential uses to the south and west and the single-story commercial building to the west, and to the 0.5 PPV significance criterion for the nearest multi-family residential buildings to the north and southeast, and the commercial building to the east. As indicated in Table 17, the estimated vibration levels at the off-site buildings would be well below both the 0.2 and 0.5 PPV building damage significance criteria. Therefore, vibration impacts (pursuant to the significance criteria for building damage) from on-site construction activities would be less than significant.

Table 17. Construction Vibration Impacts – Building Damage

Receptor Location ^a	Estimated Vibration Velocity Levels at the Off-Site Buildings, PPV (inch/second) ^b				Significance Criteria, PPV (inch/second)	Sig. Impacts?
	Large Bulldozer	Loaded Trucks	Jack-hammer	Small Bulldozer		
FTA Reference Vibration Levels at 25 feet	0.076	0.076	0.035	0.003	—	—
Commercial Buildings on the north side of Pico Boulevard, to the North	0.019	0.017	0.008	0.001	0.5 ^d	No
Residential Buildings on the south side of Ayres Avenue, to the South	0.047	0.040	0.018	0.002	0.2 ^c	No
Multi-Level Parking Structure to the East	0.244	0.208	0.096	0.008	0.5 ^d	No
Residential Building on north side of Ayres Avenue, adjacent to the Project Site to the West	0.114	0.097	0.045	0.004	0.2 ^c	No
Commercial building on the south side of Pico Boulevard, adjacent to the Project Site to the west.	0.018	0.016	0.007	0.001	0.2 ^c	No
Multi-Level residential building at the northwest corner of Overland Avenue and Ayres Avenue, southeast of the Project Site	0.017	0.014	0.007	0.001	0.5 ^d	No
^a Represents nearby off-site structures located nearest to the Project Site to the north, south, east, and west. ^b Vibration level calculated based on Caltrans reference vibration level at 25-foot distance. ^c FTA criterion for non-engineered timber and masonry buildings (applicable for the existing residential and commercial buildings to the north, south, and west of the Project Site). ^d FTA criterion for reinforced-concrete, steel or timber buildings (applicable for the multi-level parking structure east of the Project Site). Source: FTA, 2018; AES, 2026						

3.3.3.2 Human Annoyance Impacts from On-Site Construction

Table 18 (on page 47) provides the estimated vibration levels at the off-site sensitive uses due to the operation of construction equipment and compares those levels to the specified significance criteria for human annoyance. As indicated in Table 18, the estimated ground-borne vibration levels from construction equipment would be below the significance criteria for human annoyance at all off-site sensitive receptor locations. Therefore, vibration impacts related to human annoyance during construction of the Project would be less than significant.

Table 18. Construction Vibration Impacts – Human Annoyance

Receptor Location	Estimated Vibration Velocity Levels at the Off-Site Receptors, VdB ^b				Significance Criteria, VdB	Significant Impact?
	Large Bulldozer	Loaded Trucks	Jack-hammer	Small Bulldozer		
FTA Reference Vibration Levels at 25 feet	87	86	79	58	—	—
R1	72	71	64	43	80	No
R2	76	75	68	47	80	No
R3	78	77	70	49	80	No
R4	58	57	50	29	80	No
R5	58	57	50	29	80	No
R6	54	53	46	25	80	No
R6	66	65	58	37	80	No
^a Represents nearby off-site sensitive receptors						
^b Vibration level calculated based on FTA reference vibration level at 25-foot distance.						
Source: FTA, 2018; AES, 2026						

3.3.3.3 Building Damage from Off-Site Construction Traffic and Off-Site Improvements

As indicated above, the Project includes construction activities associated with limited off-site improvements, including a new pedestrian crosswalk across Westwood Boulevard at the Project Site driveways (which includes relocation of streetlights plus new ADA ramps). The nearest off-site structure to the off-site improvements includes the residential buildings located at the intersection of Westwood Boulevard and Ayres Avenue, approximately 30 feet to the south. The estimated maximum vibration due to off-site improvements construction at a distance of 30 feet would be 0.029 PPV, which would be well below the 0.2 PPV significance threshold for the nearest single-story residential buildings. Therefore, temporary vibration impacts from the construction of the required off-site improvements with respect to building damage would be less than significant.

As described above, construction delivery/haul trucks would travel between the Project Site and I-10 via Westwood Boulevard, Pico Boulevard, and Overland Avenue. Heavy-duty construction trucks would generate ground-borne vibration as they travel along the Project's anticipated haul route(s). Based on FTA data, the vibration level generated by a typical heavy-duty truck would be approximately 63 VdB (0.006 PPV) at 50 feet from the truck. According to the FTA "[i]t is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads." Nonetheless, there are existing buildings along the Project's anticipated haul route that are situated approximately 20 feet from the right-of-way and would be exposed to ground-borne vibration levels of approximately 0.022 PPV. This estimated vibration generated by construction trucks traveling along the anticipated haul

route(s) would be well below the more stringent building damage criteria of 0.12 PPV for historic buildings.³⁹ Therefore, vibration impacts with respect to building damage from off-site construction activities (i.e., construction trucks traveling on public roadways) would be less than significant.

3.3.3.4 *Human Annoyance from Off-Site Construction Traffic and Off-Site Improvements*

As indicated above, the nearest off-site residential building is approximately 30 feet from the off-site improvements. The estimated maximum vibration due to off-site construction at a distance of 30 feet would be approximately 77 VdB, which would be below the 80 VdB significance threshold for the nearest residential buildings. Therefore, temporary vibration impacts from the construction of the required off-site improvements with respect to human annoyance would be less than significant.

As described above, construction delivery/haul trucks would travel between the Project Site and I-10 via Westwood Boulevard, Pico Boulevard, and Overland Avenue. There are residential uses located along the Overland Avenue segment, approximately 20 feet from the roadway. Construction trucks would generate ground-borne vibration of approximately 74.9 VdB at a distance of 20 feet, which would be below the 80 VdB significance threshold. Therefore, vibration impacts with respect to human annoyance from off-site construction trucks traveling on public roadways would be less than significant.

Threshold (c): For a project located within the vicinity of a private airstrip or 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?

3.3.4 *Airport Noise*

The Project Site is located approximately 1.5 miles northeast of the Santa Monica Airport. Based on a report published by the Santa Monica Airport, the Project Site is not located within the Santa Monica Airport Planning Boundary/Airport Influence Area. In addition, the Santa Monica Airport is anticipated to close in 2028, per the City of Santa Monica City Council Resolution 11026.⁴⁰ In addition, the Project is located approximately 6.0 miles northeast of the

³⁹ Potentially historic resources (i.e., older construction) along the Project construction truck routes include: The Apple Pan (10801 W Pico Boulevard); Junior's Restaurant Delicatessen (2379 Westwood Boulevard); La Lomita Ranch/Notre Dame Academy Elementary School (2911 S Overland Avenue); Overland Canteen (2634 S Overland Avenue); and 10680 W Pico Boulevard. Source: SurveyLA and Historic Places LA.

⁴⁰ Available at <https://publicdocs.smgov.net/WebLink/DocView.aspx?id=2344542&dbid=0&repo=SMGOV>.

Los Angeles International Airport and is not located within the airport noise contours. Therefore, the Project would not expose people residing or working in the Project area to excessive airport-related noise levels. As such, the Project would not expose people to excessive airport-related noise levels, and impacts with respect to Threshold (c) would not occur. No further analysis is required.

4 PROJECT-SPECIFIC MITIGATION MEASURE

As analyzed above, with implementation of the previously adopted LRDP PPs and MMs, construction and operation of the Project would not result in significant noise impacts at off-site sensitive receptor locations. However, as indicated above, the Project includes the following Project-specific Implementing Measure for LRDP PP 4.9-7(a).

Project-Specific Implementing Measure: *Exterior construction activities Monday through Friday shall be limited to 7:00 AM to 7:00 PM.*

5 REFERENCES

- California Department of Transportation (Caltrans), *Technical Noise Supplement (TeNS)*, September 2013.
- California Governor's Office of Planning and Research, *State of California General Plan Guidelines*, 2017.
- City of Los Angeles, *Construction Noise and Vibration Updates to Thresholds and Methodology*, August 2024.
- City of Los Angeles, *Municipal Code, Chapter XI Noise Regulation*.
- City of Los Angeles, *Noise Element of the Los Angeles City General Plan*, Adopted February 2, 1999.
- Cyril M. Harris, *Handbook of Acoustical Measurements and Noise Control*, Third Edition, 1991.
- Federal Highway Administration (FHWA), *FHWA Roadway Construction Noise Model User's Guide*, January 2006.
- Federal Transit Administration (FTA), *Transit Noise and Vibration Impact Assessment*, September 2018.

UCLA Research Park Project Noise Impact Analysis

Noise and Vibration Calculations Worksheets

Provided by Acoustical Engineering Services

Appendix A – Ambient Measurements

Appendix B – Construction Noise and Vibration Calculations

Appendix C – Operation Noise Calculations

Appendix A

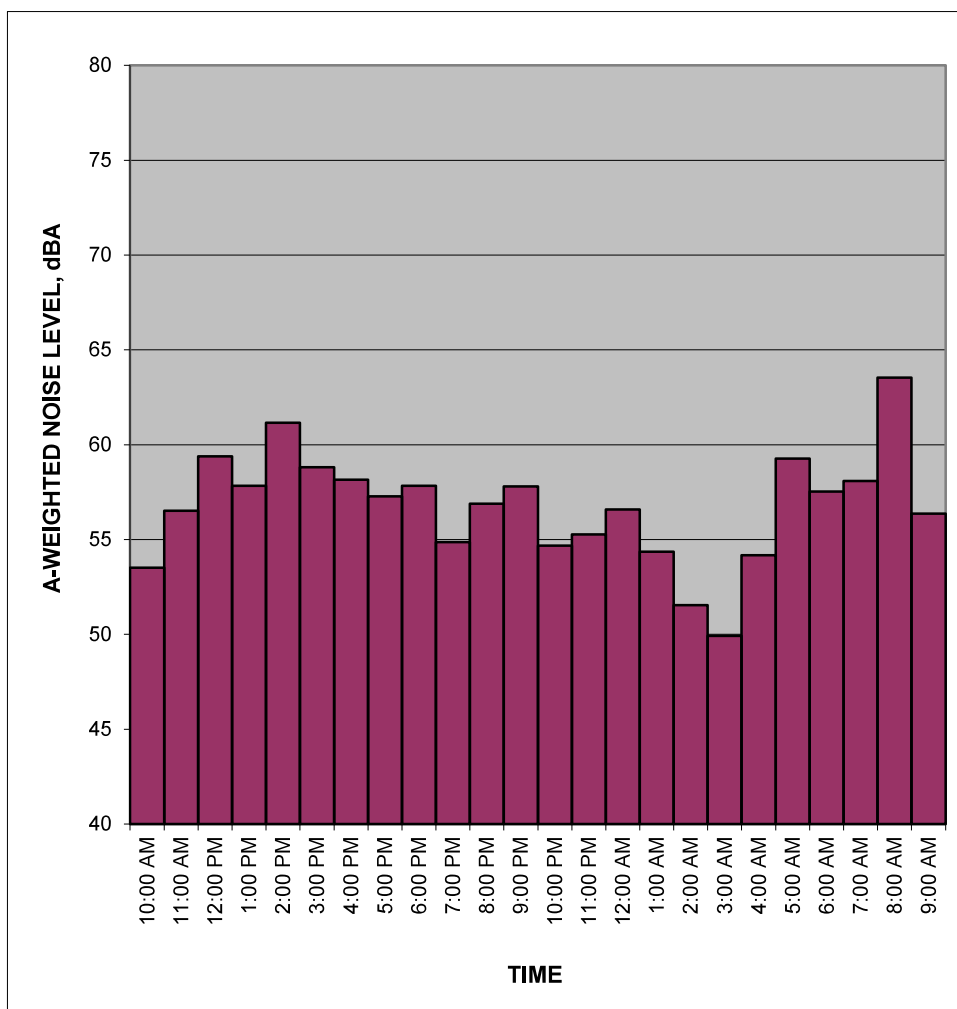
Ambient Noise Measurements

Measured Ambient Noise Levels

Project: UCLA Research Park
Location: R1
Sources: Ambient

Date: 12/15 - 12/16/2025

TIME	HNL, dB(A)
10:00 AM	53.5
11:00 AM	56.5
12:00 PM	59.4
1:00 PM	57.8
2:00 PM	61.2
3:00 PM	58.8
4:00 PM	58.2
5:00 PM	57.3
6:00 PM	57.8
7:00 PM	54.9
8:00 PM	56.9
9:00 PM	57.8
10:00 PM	54.7
11:00 PM	55.3
12:00 AM	56.6
1:00 AM	54.4
2:00 AM	51.5
3:00 AM	49.9
4:00 AM	54.2
5:00 AM	59.3
6:00 AM	57.5
7:00 AM	58.1
8:00 AM	63.5
9:00 AM	56.4
CNEL, dB(A):	62.9



NOTES:

Daytime average 58.5 dBA Leq
Nighttime average 55.6 dBA Leq

Project: UCLA Research Park
 Location: R2
 Date: 12/15/2025

Time	Leq
10:21:58 AM	56.9
10:22:08 AM	69.0
10:22:18 AM	59.2
10:22:28 AM	54.2
10:22:38 AM	64.3
10:22:48 AM	63.8
10:22:58 AM	61.4
10:23:08 AM	62.5
10:23:18 AM	63.1
10:23:28 AM	56.4
10:23:38 AM	54.9
10:23:48 AM	65.9
10:23:58 AM	65.1
10:24:08 AM	57.9
10:24:18 AM	62.1
10:24:28 AM	59.5
10:24:38 AM	65.3
10:24:48 AM	62.9
10:24:58 AM	58.3
10:25:08 AM	52.3
10:25:18 AM	54.1
10:25:28 AM	61.2
10:25:38 AM	69.1
10:25:48 AM	67.8
10:25:58 AM	68.7
10:26:08 AM	63.1
10:26:18 AM	59.7
10:26:28 AM	71.7
10:26:38 AM	64.4
10:26:48 AM	68.4
10:26:58 AM	62.1
10:27:08 AM	59.2
10:27:18 AM	62.3
10:27:28 AM	67.4
10:27:38 AM	66.3
10:27:48 AM	63.9
10:27:58 AM	51.1
10:28:08 AM	57.3
10:28:18 AM	60.9
10:28:28 AM	53.0
10:28:38 AM	55.1
10:28:48 AM	61.9
10:28:58 AM	60.4

10:29:08 AM	50.7
10:29:18 AM	65.9
10:29:28 AM	70.1
10:29:38 AM	71.7
10:29:48 AM	51.1
10:29:58 AM	50.9
10:30:08 AM	50.6
10:30:18 AM	52.0
10:30:28 AM	55.0
10:30:38 AM	53.4
10:30:48 AM	53.2
10:30:58 AM	49.2
10:31:08 AM	62.4
10:31:18 AM	65.4
10:31:28 AM	53.9
10:31:38 AM	58.4
10:31:48 AM	54.4
10:31:58 AM	63.6
10:32:08 AM	58.8
10:32:18 AM	68.6
10:32:28 AM	68.2
10:32:38 AM	63.1
10:32:48 AM	61.5
10:32:58 AM	63.9
10:33:08 AM	69.7
10:33:18 AM	65.5
10:33:28 AM	67.1
10:33:38 AM	66.0
10:33:48 AM	61.8
10:33:58 AM	69.9
10:34:08 AM	62.8
10:34:18 AM	58.7
10:34:28 AM	58.1
10:34:38 AM	62.3
10:34:48 AM	67.9
10:34:58 AM	69.0
10:35:08 AM	68.0
10:35:18 AM	63.9
10:35:28 AM	57.5
10:35:38 AM	52.5
10:35:48 AM	65.9
10:35:58 AM	64.9
10:36:08 AM	61.7
10:36:18 AM	59.5
10:36:28 AM	60.2
10:36:38 AM	62.9
10:36:48 AM	69.2

64.5

Time	Leq
10:24:50 PM	66.9
10:25:00 PM	56.5
10:25:10 PM	53.8
10:25:20 PM	55.2
10:25:30 PM	55.6
10:25:40 PM	55.0
10:25:50 PM	53.8
10:26:00 PM	52.0
10:26:10 PM	57.5
10:26:20 PM	64.0
10:26:30 PM	51.7
10:26:40 PM	51.5
10:26:50 PM	54.6
10:27:00 PM	55.1
10:27:10 PM	54.3
10:27:20 PM	53.4
10:27:30 PM	52.8
10:27:40 PM	53.3
10:27:50 PM	58.4
10:28:00 PM	56.9
10:28:10 PM	61.1
10:28:20 PM	59.1
10:28:30 PM	53.8
10:28:40 PM	53.7
10:28:50 PM	63.0
10:29:00 PM	58.7
10:29:10 PM	58.0
10:29:20 PM	57.7
10:29:30 PM	61.8
10:29:40 PM	67.4
10:29:50 PM	57.6
10:30:00 PM	56.0
10:30:10 PM	57.5
10:30:20 PM	56.0
10:30:30 PM	54.0
10:30:40 PM	54.4
10:30:50 PM	54.7
10:31:00 PM	57.5
10:31:10 PM	67.7
10:31:20 PM	67.3
10:31:30 PM	63.7
10:31:40 PM	57.2
10:31:50 PM	55.0
10:32:00 PM	54.1
10:32:10 PM	53.9
10:32:20 PM	52.6

10:32:30 PM	52.9
10:32:40 PM	53.6
10:32:50 PM	61.7
10:33:00 PM	65.7
10:33:10 PM	55.5
10:33:20 PM	53.4
10:33:30 PM	55.5
10:33:40 PM	56.5
10:33:50 PM	57.6
10:34:00 PM	57.3
10:34:10 PM	58.9
10:34:20 PM	53.1
10:34:30 PM	66.1
10:34:40 PM	68.9
10:34:50 PM	58.3
10:35:00 PM	58.5
10:35:10 PM	55.1
10:35:20 PM	53.1
10:35:30 PM	52.2
10:35:40 PM	52.7
10:35:50 PM	54.1
10:36:00 PM	53.4
10:36:10 PM	61.2
10:36:20 PM	56.4
10:36:30 PM	54.9
10:36:40 PM	59.9
10:36:50 PM	63.6
10:37:00 PM	62.9
10:37:10 PM	53.4
10:37:20 PM	52.8
10:37:30 PM	64.1
10:37:40 PM	61.6
10:37:50 PM	65.8
10:38:00 PM	66.7
10:38:10 PM	65.1
10:38:20 PM	60.6
10:38:30 PM	56.8
10:38:40 PM	55.6
10:38:50 PM	52.2
10:39:00 PM	51.4
10:39:10 PM	51.5
10:39:20 PM	51.6
10:39:30 PM	62.9
10:39:40 PM	68.2

60.6

Project: UCLA Research Park
 Location: R3
 Date: 12/15/2025

Time	Leq
10:44:59 AM	53.7
10:45:09 AM	52.9
10:45:19 AM	47.7
10:45:29 AM	47.5
10:45:39 AM	46.7
10:45:49 AM	47.1
10:45:59 AM	48.1
10:46:09 AM	60.3
10:46:19 AM	56.5
10:46:29 AM	48.8
10:46:39 AM	47.7
10:46:49 AM	46.9
10:46:59 AM	47.6
10:47:09 AM	49.7
10:47:19 AM	48.1
10:47:29 AM	49.6
10:47:39 AM	47.9
10:47:49 AM	49.9
10:47:59 AM	48.6
10:48:09 AM	48.0
10:48:19 AM	50.3
10:48:29 AM	57.6
10:48:39 AM	50.1
10:48:49 AM	48.3
10:48:59 AM	50.3
10:49:09 AM	52.7
10:49:19 AM	61.0
10:49:29 AM	52.0
10:49:39 AM	49.6
10:49:49 AM	49.4
10:49:59 AM	54.7
10:50:09 AM	52.3
10:50:19 AM	54.7
10:50:29 AM	70.4
10:50:39 AM	65.1
10:50:49 AM	53.6
10:50:59 AM	51.5
10:51:09 AM	49.6
10:51:19 AM	59.9
10:51:29 AM	59.7
10:51:39 AM	57.9
10:51:49 AM	52.5
10:51:59 AM	49.4

10:52:09 AM	49.9
10:52:19 AM	51.7
10:52:29 AM	52.5
10:52:39 AM	51.2
10:52:49 AM	49.4
10:52:59 AM	48.2
10:53:09 AM	47.3
10:53:19 AM	48.5
10:53:29 AM	48.0
10:53:39 AM	46.9
10:53:49 AM	46.3
10:53:59 AM	46.9
10:54:09 AM	47.2
10:54:19 AM	48.6
10:54:29 AM	47.5
10:54:39 AM	45.7
10:54:49 AM	46.0
10:54:59 AM	58.8
10:55:09 AM	62.6
10:55:19 AM	46.8
10:55:29 AM	46.4
10:55:39 AM	46.1
10:55:49 AM	46.9
10:55:59 AM	50.3
10:56:09 AM	48.6
10:56:19 AM	47.5
10:56:29 AM	47.3
10:56:39 AM	48.8
10:56:49 AM	54.1
10:56:59 AM	61.4
10:57:09 AM	63.4
10:57:19 AM	57.3
10:57:29 AM	57.0
10:57:39 AM	51.6
10:57:49 AM	55.9
10:57:59 AM	50.8
10:58:09 AM	50.2
10:58:19 AM	56.6
10:58:29 AM	54.1
10:58:39 AM	48.7
10:58:49 AM	54.7
10:58:59 AM	58.3
10:59:09 AM	53.4
10:59:19 AM	67.1
10:59:29 AM	64.9
10:59:39 AM	54.7
10:59:49 AM	49.2

57.0

Time	Leq
10:43:12 PM	52.9
10:43:22 PM	50.4
10:43:32 PM	50.3
10:43:42 PM	49.6
10:43:52 PM	48.6
10:44:02 PM	48.7
10:44:12 PM	49.6
10:44:22 PM	48.9
10:44:32 PM	50.7
10:44:42 PM	50.9
10:44:52 PM	49.9
10:45:02 PM	49.6
10:45:12 PM	48.3
10:45:22 PM	49.2
10:45:32 PM	48.3
10:45:42 PM	48.4
10:45:52 PM	49.8
10:46:02 PM	52.3
10:46:12 PM	50.1
10:46:22 PM	49.1
10:46:32 PM	47.6
10:46:42 PM	48.3
10:46:52 PM	48.2
10:47:02 PM	48.4
10:47:12 PM	48.6
10:47:22 PM	49.8
10:47:32 PM	48.7
10:47:42 PM	48.6
10:47:52 PM	48.3
10:48:02 PM	48.5
10:48:12 PM	49.9
10:48:22 PM	49.1
10:48:32 PM	49.0
10:48:42 PM	49.0
10:48:52 PM	48.7
10:49:02 PM	47.7
10:49:12 PM	48.3
10:49:22 PM	47.5
10:49:32 PM	49.4
10:49:42 PM	48.0
10:49:52 PM	48.4
10:50:02 PM	49.3
10:50:12 PM	48.7
10:50:22 PM	49.0
10:50:32 PM	49.5
10:50:42 PM	48.1

10:50:52 PM	48.2
10:51:02 PM	48.2
10:51:12 PM	48.0
10:51:22 PM	49.5
10:51:32 PM	49.6
10:51:42 PM	49.4
10:51:52 PM	48.3
10:52:02 PM	51.7
10:52:12 PM	49.0
10:52:22 PM	50.2
10:52:32 PM	50.6
10:52:42 PM	51.5
10:52:52 PM	50.6
10:53:02 PM	49.8
10:53:12 PM	51.1
10:53:22 PM	49.0
10:53:32 PM	49.1
10:53:42 PM	50.4
10:53:52 PM	49.2
10:54:02 PM	48.9
10:54:12 PM	49.6
10:54:22 PM	50.3
10:54:32 PM	50.5
10:54:42 PM	50.1
10:54:52 PM	52.9
10:55:02 PM	52.2
10:55:12 PM	50.5
10:55:22 PM	50.0
10:55:32 PM	51.0
10:55:42 PM	50.4
10:55:52 PM	49.8
10:56:02 PM	49.6
10:56:12 PM	48.3
10:56:22 PM	50.0
10:56:32 PM	49.7
10:56:42 PM	57.4
10:56:52 PM	54.1
10:57:02 PM	48.3
10:57:12 PM	48.8
10:57:22 PM	49.4
10:57:32 PM	49.6
10:57:42 PM	49.7
10:57:52 PM	47.7
10:58:02 PM	47.6

49.9

Project: UCLA Research Park
 Location: R4
 Date: 12/15/2025

Time	Leq
11:08:31 AM	54.0
11:08:41 AM	54.5
11:08:51 AM	67.3
11:09:01 AM	64.7
11:09:11 AM	61.1
11:09:21 AM	60.6
11:09:31 AM	54.2
11:09:41 AM	59.2
11:09:51 AM	54.5
11:10:01 AM	56.0
11:10:11 AM	59.1
11:10:21 AM	55.4
11:10:31 AM	59.1
11:10:41 AM	61.3
11:10:51 AM	60.5
11:11:01 AM	56.2
11:11:11 AM	56.4
11:11:21 AM	54.5
11:11:31 AM	54.3
11:11:41 AM	55.9
11:11:51 AM	59.9
11:12:01 AM	57.4
11:12:11 AM	58.9
11:12:21 AM	59.5
11:12:31 AM	59.1
11:12:41 AM	60.7
11:12:51 AM	60.5
11:13:01 AM	61.0
11:13:11 AM	60.5
11:13:21 AM	55.4
11:13:31 AM	54.8
11:13:41 AM	53.3
11:13:51 AM	53.0
11:14:01 AM	61.1
11:14:11 AM	60.8
11:14:21 AM	61.6
11:14:31 AM	61.3
11:14:41 AM	59.8
11:14:51 AM	59.8
11:15:01 AM	52.3
11:15:11 AM	50.8
11:15:21 AM	55.9
11:15:31 AM	57.9

11:15:41 AM	56.2
11:15:51 AM	63.1
11:16:01 AM	62.7
11:16:11 AM	58.1
11:16:21 AM	55.3
11:16:31 AM	60.6
11:16:41 AM	59.4
11:16:51 AM	58.9
11:17:01 AM	50.6
11:17:11 AM	55.2
11:17:21 AM	55.9
11:17:31 AM	56.7
11:17:41 AM	57.0
11:17:51 AM	59.4
11:18:01 AM	62.3
11:18:11 AM	62.2
11:18:21 AM	62.1
11:18:31 AM	58.9
11:18:41 AM	57.2
11:18:51 AM	55.6
11:19:01 AM	51.4
11:19:11 AM	52.9
11:19:21 AM	54.7
11:19:31 AM	56.5
11:19:41 AM	55.3
11:19:51 AM	59.3
11:20:01 AM	61.4
11:20:11 AM	64.9
11:20:21 AM	59.7
11:20:31 AM	56.0
11:20:41 AM	54.4
11:20:51 AM	55.9
11:21:01 AM	55.6
11:21:11 AM	56.9
11:21:21 AM	60.9
11:21:31 AM	61.9
11:21:41 AM	59.9
11:21:51 AM	61.4
11:22:01 AM	60.1
11:22:11 AM	59.7
11:22:21 AM	54.9
11:22:31 AM	49.6
11:22:41 AM	53.2
11:22:51 AM	55.1
11:23:01 AM	55.2
11:23:11 AM	57.0
11:23:21 AM	53.3

59.2

Time	Leq
11:03:06 PM	54.3
11:03:16 PM	51.1
11:03:26 PM	51.3
11:03:36 PM	58.5
11:03:46 PM	64.6
11:03:56 PM	50.2
11:04:06 PM	48.1
11:04:16 PM	52.3
11:04:26 PM	55.5
11:04:36 PM	54.1
11:04:46 PM	49.2
11:04:56 PM	53.8
11:05:06 PM	59.8
11:05:16 PM	57.3
11:05:26 PM	52.9
11:05:36 PM	53.1
11:05:46 PM	55.5
11:05:56 PM	51.6
11:06:06 PM	55.7
11:06:16 PM	50.1
11:06:26 PM	52.6
11:06:36 PM	49.6
11:06:46 PM	52.6
11:06:56 PM	49.7
11:07:06 PM	53.6
11:07:16 PM	55.2
11:07:26 PM	53.4
11:07:36 PM	54.4
11:07:46 PM	49.3
11:07:56 PM	50.7
11:08:06 PM	49.7
11:08:16 PM	53.9
11:08:26 PM	57.2
11:08:36 PM	59.9
11:08:46 PM	52.2
11:08:56 PM	51.6
11:09:06 PM	52.5
11:09:16 PM	49.1
11:09:26 PM	52.0
11:09:36 PM	48.9
11:09:46 PM	52.1
11:09:56 PM	51.1
11:10:06 PM	57.2
11:10:16 PM	57.1
11:10:26 PM	57.5
11:10:36 PM	55.6

11:10:46 PM	51.0
11:10:56 PM	52.2
11:11:06 PM	51.8
11:11:16 PM	52.6
11:11:26 PM	52.8
11:11:36 PM	50.3
11:11:46 PM	51.5
11:11:56 PM	59.8
11:12:06 PM	52.9
11:12:16 PM	49.4
11:12:26 PM	51.7
11:12:36 PM	54.0
11:12:46 PM	54.9
11:12:56 PM	49.6
11:13:06 PM	49.7
11:13:16 PM	52.5
11:13:26 PM	50.4
11:13:36 PM	57.4
11:13:46 PM	52.0
11:13:56 PM	49.4
11:14:06 PM	53.8
11:14:16 PM	50.4
11:14:26 PM	50.6
11:14:36 PM	50.4
11:14:46 PM	49.7
11:14:56 PM	49.5
11:15:06 PM	54.2
11:15:16 PM	54.9
11:15:26 PM	55.0
11:15:36 PM	50.4
11:15:46 PM	56.1
11:15:56 PM	50.4
11:16:06 PM	51.4
11:16:16 PM	49.9
11:16:26 PM	51.4
11:16:36 PM	50.9
11:16:46 PM	54.8
11:16:56 PM	55.2
11:17:06 PM	53.0
11:17:16 PM	51.2
11:17:26 PM	55.3
11:17:36 PM	53.3
11:17:46 PM	54.0
11:17:56 PM	56.4

54.3

Project: UCLA Research Park
 Location: R5
 Date: 12/15/2025

Time	Leq
11:29:54 AM	53.0
11:30:04 AM	54.5
11:30:14 AM	55.1
11:30:24 AM	56.3
11:30:34 AM	55.3
11:30:44 AM	57.0
11:30:54 AM	58.9
11:31:04 AM	58.2
11:31:14 AM	55.6
11:31:24 AM	52.0
11:31:34 AM	55.1
11:31:44 AM	57.2
11:31:54 AM	60.9
11:32:04 AM	54.9
11:32:14 AM	55.3
11:32:24 AM	52.7
11:32:34 AM	55.8
11:32:44 AM	58.7
11:32:54 AM	54.9
11:33:04 AM	54.1
11:33:14 AM	56.3
11:33:24 AM	56.2
11:33:34 AM	57.9
11:33:44 AM	56.7
11:33:54 AM	51.9
11:34:04 AM	54.2
11:34:14 AM	52.8
11:34:24 AM	57.6
11:34:34 AM	59.3
11:34:44 AM	58.8
11:34:54 AM	57.8
11:35:04 AM	58.6
11:35:14 AM	58.7
11:35:24 AM	55.6
11:35:34 AM	52.9
11:35:44 AM	49.4
11:35:54 AM	50.9
11:36:04 AM	55.6
11:36:14 AM	54.9
11:36:24 AM	55.9
11:36:34 AM	56.6
11:36:44 AM	57.1
11:36:54 AM	57.7

11:37:04 AM	56.0
11:37:14 AM	60.4
11:37:24 AM	52.4
11:37:34 AM	52.2
11:37:44 AM	51.8
11:37:54 AM	55.4
11:38:04 AM	59.3
11:38:14 AM	61.9
11:38:24 AM	57.0
11:38:34 AM	53.5
11:38:44 AM	56.4
11:38:54 AM	55.2
11:39:04 AM	59.7
11:39:14 AM	60.1
11:39:24 AM	58.9
11:39:34 AM	53.8
11:39:44 AM	54.7
11:39:54 AM	56.5
11:40:04 AM	59.2
11:40:14 AM	57.1
11:40:24 AM	55.4
11:40:34 AM	56.0
11:40:44 AM	58.5
11:40:54 AM	55.9
11:41:04 AM	52.2
11:41:14 AM	51.6
11:41:24 AM	61.3
11:41:34 AM	61.3
11:41:44 AM	59.2
11:41:54 AM	63.3
11:42:04 AM	65.9
11:42:14 AM	70.9
11:42:24 AM	57.2
11:42:34 AM	55.5
11:42:44 AM	57.5
11:42:54 AM	57.6
11:43:04 AM	52.5
11:43:14 AM	53.8
11:43:24 AM	54.7
11:43:34 AM	53.9
11:43:44 AM	57.7
11:43:54 AM	59.2
11:44:04 AM	58.4
11:44:14 AM	59.5
11:44:24 AM	59.5
11:44:34 AM	56.2
11:44:44 AM	55.2

58.4

Time	Leq
11:23:00 PM	53.9
11:23:10 PM	53.9
11:23:20 PM	49.3
11:23:30 PM	47.1
11:23:40 PM	50.0
11:23:50 PM	54.3
11:24:00 PM	49.8
11:24:10 PM	46.7
11:24:20 PM	46.4
11:24:30 PM	53.7
11:24:40 PM	48.4
11:24:50 PM	51.7
11:25:00 PM	52.3
11:25:10 PM	55.8
11:25:20 PM	47.1
11:25:30 PM	45.8
11:25:40 PM	44.8
11:25:50 PM	45.2
11:26:00 PM	49.6
11:26:10 PM	55.1
11:26:20 PM	49.1
11:26:30 PM	50.7
11:26:40 PM	52.2
11:26:50 PM	57.0
11:27:00 PM	54.9
11:27:10 PM	54.5
11:27:20 PM	55.8
11:27:30 PM	49.9
11:27:40 PM	46.8
11:27:50 PM	46.3
11:28:00 PM	47.1
11:28:10 PM	47.7
11:28:20 PM	48.9
11:28:30 PM	56.5
11:28:40 PM	55.3
11:28:50 PM	49.8
11:29:00 PM	55.9
11:29:10 PM	55.0
11:29:20 PM	54.1
11:29:30 PM	45.6
11:29:40 PM	54.1
11:29:50 PM	54.9
11:30:00 PM	46.7
11:30:10 PM	46.0
11:30:20 PM	49.9
11:30:30 PM	53.7

11:30:40 PM	57.9
11:30:50 PM	53.9
11:31:00 PM	52.3
11:31:10 PM	54.6
11:31:20 PM	50.7
11:31:30 PM	55.1
11:31:40 PM	57.0
11:31:50 PM	55.9
11:32:00 PM	59.2
11:32:10 PM	46.9
11:32:20 PM	46.1
11:32:30 PM	46.1
11:32:40 PM	46.3
11:32:50 PM	52.5
11:33:00 PM	49.0
11:33:10 PM	57.0
11:33:20 PM	58.6
11:33:30 PM	47.2
11:33:40 PM	46.6
11:33:50 PM	55.0
11:34:00 PM	45.7
11:34:10 PM	46.1
11:34:20 PM	45.6
11:34:30 PM	45.5
11:34:40 PM	45.6
11:34:50 PM	46.0
11:35:00 PM	46.5
11:35:10 PM	54.6
11:35:20 PM	54.6
11:35:30 PM	54.3
11:35:40 PM	46.7
11:35:50 PM	54.8
11:36:00 PM	46.7
11:36:10 PM	46.1
11:36:20 PM	46.2
11:36:30 PM	54.6
11:36:40 PM	58.9
11:36:50 PM	53.1
11:37:00 PM	45.2
11:37:10 PM	44.7
11:37:20 PM	46.8
11:37:30 PM	52.9
11:37:40 PM	52.9
11:37:50 PM	49.0

52.7

Project: UCLA Research Park
 Location: R6
 Date: 12/15/2025

Time	Leq
11:49:13 AM	61.7
11:49:23 AM	57.4
11:49:33 AM	58.2
11:49:43 AM	56.2
11:49:53 AM	53.9
11:50:03 AM	50.2
11:50:13 AM	51.2
11:50:23 AM	51.3
11:50:33 AM	58.8
11:50:43 AM	58.9
11:50:53 AM	61.4
11:51:03 AM	57.6
11:51:13 AM	57.2
11:51:23 AM	53.9
11:51:33 AM	57.1
11:51:43 AM	59.2
11:51:53 AM	58.1
11:52:03 AM	51.9
11:52:13 AM	51.7
11:52:23 AM	54.4
11:52:33 AM	55.9
11:52:43 AM	60.5
11:52:53 AM	56.7
11:53:03 AM	55.9
11:53:13 AM	56.5
11:53:23 AM	63.2
11:53:33 AM	56.1
11:53:43 AM	57.6
11:53:53 AM	55.1
11:54:03 AM	51.9
11:54:13 AM	56.7
11:54:23 AM	55.7
11:54:33 AM	52.5
11:54:43 AM	52.6
11:54:53 AM	56.2
11:55:03 AM	53.8
11:55:13 AM	51.5
11:55:23 AM	54.3
11:55:33 AM	59.4
11:55:43 AM	57.6
11:55:53 AM	52.9
11:56:03 AM	55.5
11:56:13 AM	55.5

11:56:23 AM	57.2
11:56:33 AM	56.7
11:56:43 AM	55.0
11:56:53 AM	55.3
11:57:03 AM	54.5
11:57:13 AM	55.9
11:57:23 AM	52.8
11:57:33 AM	54.8
11:57:43 AM	51.7
11:57:53 AM	59.2
11:58:03 AM	59.5
11:58:13 AM	58.6
11:58:23 AM	56.1
11:58:33 AM	52.8
11:58:43 AM	52.7
11:58:53 AM	53.9
11:59:03 AM	62.3
11:59:13 AM	53.8
11:59:23 AM	56.6
11:59:33 AM	54.1
11:59:43 AM	56.0
11:59:53 AM	55.7
12:00:03 PM	52.8
12:00:13 PM	57.9
12:00:23 PM	56.7
12:00:33 PM	53.6
12:00:43 PM	56.0
12:00:53 PM	53.5
12:01:03 PM	56.1
12:01:13 PM	56.7
12:01:23 PM	54.5
12:01:33 PM	54.9
12:01:43 PM	54.9
12:01:53 PM	61.5
12:02:03 PM	57.9
12:02:13 PM	56.0
12:02:23 PM	57.6
12:02:33 PM	56.4
12:02:43 PM	54.6
12:02:53 PM	52.2
12:03:03 PM	52.2
12:03:13 PM	50.8
12:03:23 PM	58.6
12:03:33 PM	55.9
12:03:43 PM	53.4
12:03:53 PM	54.9
12:04:03 PM	54.5

56.7

Time	Leq
11:41:45 PM	49.5
11:41:55 PM	47.3
11:42:05 PM	47.5
11:42:15 PM	52.4
11:42:25 PM	53.4
11:42:35 PM	47.3
11:42:45 PM	48.0
11:42:55 PM	49.8
11:43:05 PM	49.6
11:43:15 PM	47.7
11:43:25 PM	49.0
11:43:35 PM	55.0
11:43:45 PM	53.2
11:43:55 PM	53.7
11:44:05 PM	48.6
11:44:15 PM	55.8
11:44:25 PM	55.5
11:44:35 PM	49.6
11:44:45 PM	48.0
11:44:55 PM	56.1
11:45:05 PM	52.9
11:45:15 PM	49.6
11:45:25 PM	47.3
11:45:35 PM	47.3
11:45:45 PM	47.2
11:45:55 PM	48.0
11:46:05 PM	49.1
11:46:15 PM	55.0
11:46:25 PM	53.0
11:46:35 PM	53.9
11:46:45 PM	58.1
11:46:55 PM	52.7
11:47:05 PM	47.1
11:47:15 PM	48.7
11:47:25 PM	56.1
11:47:35 PM	52.0
11:47:45 PM	49.5
11:47:55 PM	47.4
11:48:05 PM	48.4
11:48:15 PM	55.0
11:48:25 PM	48.3
11:48:35 PM	51.7
11:48:45 PM	54.7
11:48:55 PM	53.3
11:49:05 PM	49.5
11:49:15 PM	49.9

11:49:25 PM	53.4
11:49:35 PM	47.8
11:49:45 PM	53.1
11:49:55 PM	52.1
11:50:05 PM	49.7
11:50:15 PM	53.7
11:50:25 PM	51.3
11:50:35 PM	55.2
11:50:45 PM	48.6
11:50:55 PM	48.0
11:51:05 PM	53.1
11:51:15 PM	50.6
11:51:25 PM	53.6
11:51:35 PM	49.7
11:51:45 PM	55.4
11:51:55 PM	53.7
11:52:05 PM	50.8
11:52:15 PM	49.0
11:52:25 PM	51.4
11:52:35 PM	55.0
11:52:45 PM	50.0
11:52:55 PM	49.1
11:53:05 PM	51.9
11:53:15 PM	53.6
11:53:25 PM	53.7
11:53:35 PM	49.9
11:53:45 PM	48.6
11:53:55 PM	51.1
11:54:05 PM	51.0
11:54:15 PM	51.6
11:54:25 PM	53.3
11:54:35 PM	49.7
11:54:45 PM	57.0
11:54:55 PM	56.0
11:55:05 PM	53.2
11:55:15 PM	54.2
11:55:25 PM	54.6
11:55:35 PM	55.8
11:55:45 PM	55.0
11:55:55 PM	54.1
11:56:05 PM	50.9
11:56:15 PM	50.3
11:56:25 PM	53.2
11:56:35 PM	53.3

52.5

Project: UCLA Research Park
 Location: R7
 Date: 12/15/2025

Time	Leq
12:39:56 PM	52.6
12:40:06 PM	52.6
12:40:16 PM	52.4
12:40:26 PM	57.3
12:40:36 PM	52.5
12:40:46 PM	51.1
12:40:56 PM	51.0
12:41:06 PM	50.7
12:41:16 PM	51.2
12:41:26 PM	51.2
12:41:36 PM	51.0
12:41:46 PM	50.9
12:41:56 PM	50.9
12:42:06 PM	50.9
12:42:16 PM	50.7
12:42:26 PM	51.3
12:42:36 PM	51.2
12:42:46 PM	52.4
12:42:56 PM	52.4
12:43:06 PM	52.0
12:43:16 PM	51.1
12:43:26 PM	50.6
12:43:36 PM	51.0
12:43:46 PM	52.2
12:43:56 PM	50.9
12:44:06 PM	51.0
12:44:16 PM	50.8
12:44:26 PM	51.3
12:44:36 PM	52.1
12:44:46 PM	52.4
12:44:56 PM	52.6
12:45:06 PM	52.4
12:45:16 PM	52.0
12:45:26 PM	51.9
12:45:36 PM	51.4
12:45:46 PM	51.4
12:45:56 PM	51.1
12:46:06 PM	51.0
12:46:16 PM	51.1
12:46:26 PM	51.5
12:46:36 PM	51.8
12:46:46 PM	51.9
12:46:56 PM	52.4

12:47:06 PM	52.7
12:47:16 PM	53.0
12:47:26 PM	52.6
12:47:36 PM	52.7
12:47:46 PM	52.5
12:47:56 PM	51.7
12:48:06 PM	51.9
12:48:16 PM	51.3
12:48:26 PM	51.8
12:48:36 PM	52.4
12:48:46 PM	53.6
12:48:56 PM	52.7
12:49:06 PM	52.9
12:49:16 PM	53.7
12:49:26 PM	52.3
12:49:36 PM	52.1
12:49:46 PM	51.6
12:49:56 PM	57.5
12:50:06 PM	51.5
12:50:16 PM	51.4
12:50:26 PM	51.6
12:50:36 PM	51.4
12:50:46 PM	52.4
12:50:56 PM	52.1
12:51:06 PM	52.0
12:51:16 PM	51.7
12:51:26 PM	51.2
12:51:36 PM	50.9
12:51:46 PM	52.3
12:51:56 PM	51.7
12:52:06 PM	52.3
12:52:16 PM	53.9
12:52:26 PM	52.2
12:52:36 PM	51.3
12:52:46 PM	51.1
12:52:56 PM	52.0
12:53:06 PM	51.6
12:53:16 PM	51.9
12:53:26 PM	51.8
12:53:36 PM	51.7
12:53:46 PM	51.1
12:53:56 PM	51.2
12:54:06 PM	52.4
12:54:16 PM	52.5
12:54:26 PM	52.6
12:54:36 PM	52.0
12:54:46 PM	51.5

52.1

Time	Leq
10:01:25 PM	51.6
10:01:35 PM	50.9
10:01:45 PM	51.5
10:01:55 PM	52.0
10:02:05 PM	52.0
10:02:15 PM	51.5
10:02:25 PM	51.5
10:02:35 PM	52.3
10:02:45 PM	53.0
10:02:55 PM	52.6
10:03:05 PM	52.5
10:03:15 PM	52.7
10:03:25 PM	55.4
10:03:35 PM	52.8
10:03:45 PM	52.7
10:03:55 PM	52.8
10:04:05 PM	52.5
10:04:15 PM	52.0
10:04:25 PM	52.1
10:04:35 PM	50.8
10:04:45 PM	50.6
10:04:55 PM	51.5
10:05:05 PM	51.4
10:05:15 PM	51.3
10:05:25 PM	51.4
10:05:35 PM	51.2
10:05:45 PM	51.2
10:05:55 PM	50.5
10:06:05 PM	50.7
10:06:15 PM	52.1
10:06:25 PM	51.1
10:06:35 PM	50.4
10:06:45 PM	52.1
10:06:55 PM	53.7
10:07:05 PM	51.9
10:07:15 PM	50.9
10:07:25 PM	51.6
10:07:35 PM	51.5
10:07:45 PM	51.7
10:07:55 PM	51.7
10:08:05 PM	52.0
10:08:15 PM	52.9
10:08:25 PM	54.2
10:08:35 PM	52.3
10:08:45 PM	52.7
10:08:55 PM	52.6

10:09:05 PM	52.2
10:09:15 PM	52.7
10:09:25 PM	53.3
10:09:35 PM	53.1
10:09:45 PM	54.0
10:09:55 PM	53.4
10:10:05 PM	53.0
10:10:15 PM	53.0
10:10:25 PM	52.7
10:10:35 PM	51.9
10:10:45 PM	53.0
10:10:55 PM	52.7
10:11:05 PM	52.5
10:11:15 PM	51.8
10:11:25 PM	52.0
10:11:35 PM	52.1
10:11:45 PM	52.0
10:11:55 PM	51.4
10:12:05 PM	51.4
10:12:15 PM	51.4
10:12:25 PM	50.6
10:12:35 PM	50.8
10:12:45 PM	50.9
10:12:55 PM	51.1
10:13:05 PM	51.1
10:13:15 PM	51.6
10:13:25 PM	51.8
10:13:35 PM	51.4
10:13:45 PM	51.4
10:13:55 PM	52.1
10:14:05 PM	52.6
10:14:15 PM	53.2
10:14:25 PM	53.5
10:14:35 PM	53.5
10:14:45 PM	52.6
10:14:55 PM	53.5
10:15:05 PM	53.7
10:15:15 PM	52.5
10:15:25 PM	52.2
10:15:35 PM	52.4
10:15:45 PM	51.9
10:15:55 PM	53.1
10:16:05 PM	51.9
10:16:15 PM	51.6

52.3

Appendix B

Construction Noise & Vibration Calculations

Project: UCLA Research Park

On-Site Construction Noise Analysis

WITHOUT MITIGATIONS

Estimated Construction Noise Levels, dBA Leq
(from SoundPLAN Model)

Receptor	Demo	Grading	Building Construction	Paving	Demo + Grading	Building + Paving	Off-Site Improvements
R1	79.3	68.0	73.7	72.0	79.6	75.9	67.6
R2	80.7	69.4	75.0	73.3	81.0	77.2	80.7
R3	79.9	68.6	74.3	72.6	80.2	76.5	59.9
R4	51.4	40.1	45.7	44.0	51.7	47.9	42.0
R5	61.0	49.7	55.3	53.6	61.3	57.5	42.9
R6	46.8	35.5	41.2	39.4	47.1	43.4	38.9
R7	50.3	39.0	44.7	43.0	50.6	46.9	38.4

WITH MITIGATIONS

Estimated Construction Noise Levels, dBA Leq

Receptor	Mitigation Measures	Demo	Grading	Building Construction	Paving	Demo + Grading	Building + Paving	Off-Site Improvements
R1	0	79.3	68.0	73.0	72.0	79.6	75.5	67.6
R2	-3	77.7	66.4	75.1	73.4	78.0	77.3	77.7
R3	-3	76.9	65.6	77.5	75.7	77.2	79.7	56.9
R4	0	51.4	40.1	45.7	44.0	51.7	47.9	42.0
R5	0	61.0	49.7	55.3	53.6	61.3	57.5	42.9
R6	0	46.8	35.5	41.2	39.4	47.1	43.4	38.9
R7	0	50.3	39.0	44.7	43.0	50.6	46.9	38.4

Description	Reference Noise Level at 50ft, Lmax	Acoustical Usage Factor	Sound Pressure Levels (SPL), Leq	Sound Power Levels (Lw), Leq	Demo		Grading/Excavation		Building Construction		Paving/ Landscape		Off-site Improvements	
					# of Equipment	Sound Power Level	# of Equipment	Sound Power Level	# of Equipment	Sound Power Level	# of Equipment	Sound Power Level	# of Equipment	Sound Power Level
Air Compressor	78	40%	74	105,7	6	113,5			6	113,5	1	105,7	1	99,7
Boom Lift	75	20%	68	99,7	4	105,7								
Bore Drill Rig	84	20%	77	108,7										
Cement and Mortar Mixers	80	50%	77	108,6					2	111,6	1	108,6	2	111,6
Concrete/Industrial Saw	90	20%	83	114,7	2	117,7								
Crane (Tower)	81	16%	73	104,7										
Crane (Mobile)	81	16%	73	104,7					1	104,7	1	104,7	1	104,7
Crawler Tractor	84	40%	80	111,7										
Crushing/Proc. Equipment	85	50%	82	113,6										
Dump Truck	76	40%	72	103,7										
Excavator	81	40%	77	108,7										
Forklifts	75	20%	68	99,7	4	105,7			6	107,5	1	99,7		
Generator Sets	81	50%	78	109,6					2	112,6	1	109,6		
Grader	85	40%	81	112,7									1	112,7
Gritter/Milling Equipment	85	50%	82	113,6										
Jackhammer	89	20%	82	113,7	12	124,5							2	116,7
Off-Highway Tractors	84	40%	80	111,7										
Water Truck	82	10%	72	103,7	1	103,7	1	103,7	1	103,7			1	103,7
Paver	77	50%	74	105,6							2	108,6		
Paving Equipment	77	50%	74	105,6							2	108,6		
Pump	81	50%	78	109,6	1	109,6			2	112,6	1	108,6		
Plate Compactor	83	20%	76	107,7							2	110,7	1	107,7
Roller	80	20%	73	104,7										
Rough Terrain Forklifts	83	40%	79	110,7										
Rubber Tired Dozer	82	40%	78	109,7										
Rubber Tired Loader	79	40%	75	106,7										
Scraper	84	40%	80	111,7										
Signal Boards	73	50%	70	101,6										
Skid Steer Loader	79	40%	75	106,7	4	112,7			2	109,7	1	106,7		
Surfacing Equipment	90	20%	83	114,7									1	114,7
Sweeper	82	10%	72	103,7										
Tractors/Loaders/Backhoes	84	40%	80	111,7	2	114,7	2	114,7	1	111,7	1	111,7		
Trencher	80	50%	77	108,6										
Welders	74	40%	70	101,7					6	109,5				
Other Equipment	85	50%	82	113,6										
					36		3		29		14		10	

Source for Ref. Noise Levels: FHWA RCNM, 2006

UCLA Research Park

Source Levels in dB(A) - 01a Demo

Name	Source type	Lw dB(A)	
East - Air Compressor (6)	Area	113.5	
East - Boom Lift (4)	Area	105.7	
East - Concrete Saw (2)	Area	117.7	
East - Forklift (4)	Area	105.7	
East - Jackhammer (12)	Area	124.5	
East - Pump (1)	Area	109.6	
East - Skid Steer Loader (4)	Area	112.7	
East - Tractor Loader Backhoe (2)	Area	114.7	
East - Water Truck (1)	Area	103.7	
West - Air Compressor (6)	Area	113.5	
West - Boom Lift (4)	Area	105.7	
West - Concrete Saw (2)	Area	117.7	
West - Forklift (4)	Area	105.7	
West - Jackhammer (12)	Area	124.5	
West - Pump (1)	Area	109.6	
West - Skid Steer Loader (4)	Area	112.7	
West - Tractor Loader Backhoe (2)	Area	114.7	
West - Water Truck (1)	Area	103.7	

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Contribution level - 01a Demo

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 79.3 dB(A)			
West - Air Compressor (6)	Area	56.3	
East - Air Compressor (6)	Area	66.1	
West - Boom Lift (4)	Area	48.5	
East - Boom Lift (4)	Area	58.3	
West - Concrete Saw (2)	Area	60.5	
East - Concrete Saw (2)	Area	70.3	
West - Forklift (4)	Area	48.5	
East - Forklift (4)	Area	58.3	
West - Jackhammer (12)	Area	67.3	
East - Jackhammer (12)	Area	77.1	
West - Pump (1)	Area	52.4	
East - Pump (1)	Area	62.2	
West - Skid Steer Loader (4)	Area	55.5	
East - Skid Steer Loader (4)	Area	65.3	
West - Tractor Loader Backhoe (2)	Area	57.5	
East - Tractor Loader Backhoe (2)	Area	67.3	
West - Water Truck (1)	Area	46.5	
East - Water Truck (1)	Area	56.3	
Receiver R2 Leq,d 80.7 dB(A)			
West - Air Compressor (6)	Area	66.8	
East - Air Compressor (6)	Area	61.3	
West - Boom Lift (4)	Area	59.0	
East - Boom Lift (4)	Area	53.5	
West - Concrete Saw (2)	Area	71.0	
East - Concrete Saw (2)	Area	65.5	
West - Forklift (4)	Area	59.0	
East - Forklift (4)	Area	53.5	
West - Jackhammer (12)	Area	77.8	
East - Jackhammer (12)	Area	72.3	
West - Pump (1)	Area	62.9	
East - Pump (1)	Area	57.4	
West - Skid Steer Loader (4)	Area	66.0	
East - Skid Steer Loader (4)	Area	60.5	
West - Tractor Loader Backhoe (2)	Area	68.0	
East - Tractor Loader Backhoe (2)	Area	62.5	
West - Water Truck (1)	Area	57.0	
East - Water Truck (1)	Area	51.5	
Receiver R3 Leq,d 79.9 dB(A)			
West - Air Compressor (6)	Area	67.0	
East - Air Compressor (6)	Area	48.5	
West - Boom Lift (4)	Area	59.2	
East - Boom Lift (4)	Area	40.7	

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UCLA Research Park Contribution level - 01a Demo

Source	Source type	Leq,d dB(A)	
West - Concrete Saw (2)	Area	71.2	
East - Concrete Saw (2)	Area	52.7	
West - Forklift (4)	Area	59.2	
East - Forklift (4)	Area	40.7	
West - Jackhammer (12)	Area	78.0	
East - Jackhammer (12)	Area	59.5	
West - Pump (1)	Area	63.1	
East - Pump (1)	Area	44.6	
West - Skid Steer Loader (4)	Area	66.2	
East - Skid Steer Loader (4)	Area	47.7	
West - Tractor Loader Backhoe (2)	Area	68.2	
East - Tractor Loader Backhoe (2)	Area	49.7	
West - Water Truck (1)	Area	57.2	
East - Water Truck (1)	Area	38.7	
Receiver R4 Leq,d 51.4 dB(A)			
West - Air Compressor (6)	Area	37.0	
East - Air Compressor (6)	Area	33.3	
West - Boom Lift (4)	Area	29.2	
East - Boom Lift (4)	Area	25.5	
West - Concrete Saw (2)	Area	41.2	
East - Concrete Saw (2)	Area	37.5	
West - Forklift (4)	Area	29.2	
East - Forklift (4)	Area	25.5	
West - Jackhammer (12)	Area	48.0	
East - Jackhammer (12)	Area	44.3	
West - Pump (1)	Area	33.1	
East - Pump (1)	Area	29.4	
West - Skid Steer Loader (4)	Area	36.2	
East - Skid Steer Loader (4)	Area	32.5	
West - Tractor Loader Backhoe (2)	Area	38.2	
East - Tractor Loader Backhoe (2)	Area	34.5	
West - Water Truck (1)	Area	27.2	
East - Water Truck (1)	Area	23.5	
Receiver R5 Leq,d 61.0 dB(A)			
West - Air Compressor (6)	Area	34.2	
East - Air Compressor (6)	Area	48.0	
West - Boom Lift (4)	Area	26.4	
East - Boom Lift (4)	Area	40.2	
West - Concrete Saw (2)	Area	38.4	
East - Concrete Saw (2)	Area	52.2	
West - Forklift (4)	Area	26.4	
East - Forklift (4)	Area	40.2	
West - Jackhammer (12)	Area	45.2	

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UCLA Research Park Contribution level - 01a Demo

Source	Source type	Leq,d dB(A)	
East - Jackhammer (12)	Area	59.0	
West - Pump (1)	Area	30.3	
East - Pump (1)	Area	44.1	
West - Skid Steer Loader (4)	Area	33.4	
East - Skid Steer Loader (4)	Area	47.2	
West - Tractor Loader Backhoe (2)	Area	35.4	
East - Tractor Loader Backhoe (2)	Area	49.2	
West - Water Truck (1)	Area	24.4	
East - Water Truck (1)	Area	38.2	
Receiver R6 Leq,d 46.8 dB(A)			
West - Air Compressor (6)	Area	29.9	
East - Air Compressor (6)	Area	31.8	
West - Boom Lift (4)	Area	22.1	
East - Boom Lift (4)	Area	24.0	
West - Concrete Saw (2)	Area	34.1	
East - Concrete Saw (2)	Area	36.0	
West - Forklift (4)	Area	22.1	
East - Forklift (4)	Area	24.0	
West - Jackhammer (12)	Area	40.9	
East - Jackhammer (12)	Area	42.8	
West - Pump (1)	Area	26.0	
East - Pump (1)	Area	27.9	
West - Skid Steer Loader (4)	Area	29.1	
East - Skid Steer Loader (4)	Area	31.0	
West - Tractor Loader Backhoe (2)	Area	31.1	
East - Tractor Loader Backhoe (2)	Area	33.0	
West - Water Truck (1)	Area	20.1	
East - Water Truck (1)	Area	22.0	
Receiver R7 Leq,d 50.3 dB(A)			
West - Air Compressor (6)	Area	29.0	
East - Air Compressor (6)	Area	36.8	
West - Boom Lift (4)	Area	21.2	
East - Boom Lift (4)	Area	29.0	
West - Concrete Saw (2)	Area	33.2	
East - Concrete Saw (2)	Area	41.0	
West - Forklift (4)	Area	21.2	
East - Forklift (4)	Area	29.0	
West - Jackhammer (12)	Area	40.0	
East - Jackhammer (12)	Area	47.8	
West - Pump (1)	Area	25.1	
East - Pump (1)	Area	32.9	
West - Skid Steer Loader (4)	Area	28.2	
East - Skid Steer Loader (4)	Area	36.0	

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Contribution level - 01a Demo**

Source	Source type	Leq,d dB(A)	
West - Tractor Loader Backhoe (2)	Area	30.2	
East - Tractor Loader Backhoe (2)	Area	38.0	
West - Water Truck (1)	Area	19.2	
East - Water Truck (1)	Area	27.0	

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Source Levels in dB(A) - 01b Grading

Name	Source type	Lw dB(A)	
East - Tractor Loader Backhoe (2)	Area	114.7	
East - Water Truck (1)	Area	103.7	
West - Tractor Loader Backhoe (2)	Area	114.7	
West - Water Truck (1)	Area	103.7	

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Contribution level - 01b Grading

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 68.0 dB(A)			
West - Tractor Loader Backhoe (2)	Area	57.5	
East - Tractor Loader Backhoe (2)	Area	67.3	
West - Water Truck (1)	Area	46.5	
East - Water Truck (1)	Area	56.3	
Receiver R2 Leq,d 69.4 dB(A)			
West - Tractor Loader Backhoe (2)	Area	68.0	
East - Tractor Loader Backhoe (2)	Area	62.5	
West - Water Truck (1)	Area	57.0	
East - Water Truck (1)	Area	51.5	
Receiver R3 Leq,d 68.6 dB(A)			
West - Tractor Loader Backhoe (2)	Area	68.2	
East - Tractor Loader Backhoe (2)	Area	49.7	
West - Water Truck (1)	Area	57.2	
East - Water Truck (1)	Area	38.7	
Receiver R4 Leq,d 40.1 dB(A)			
West - Tractor Loader Backhoe (2)	Area	38.2	
East - Tractor Loader Backhoe (2)	Area	34.5	
West - Water Truck (1)	Area	27.2	
East - Water Truck (1)	Area	23.5	
Receiver R5 Leq,d 49.7 dB(A)			
West - Tractor Loader Backhoe (2)	Area	35.4	
East - Tractor Loader Backhoe (2)	Area	49.2	
West - Water Truck (1)	Area	24.4	
East - Water Truck (1)	Area	38.2	
Receiver R6 Leq,d 35.5 dB(A)			
West - Tractor Loader Backhoe (2)	Area	31.1	
East - Tractor Loader Backhoe (2)	Area	33.0	
West - Water Truck (1)	Area	20.1	
East - Water Truck (1)	Area	22.0	
Receiver R7 Leq,d 39.0 dB(A)			
West - Tractor Loader Backhoe (2)	Area	30.2	
East - Tractor Loader Backhoe (2)	Area	38.0	
West - Water Truck (1)	Area	19.2	
East - Water Truck (1)	Area	27.0	

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Source Levels in dB(A) - 01c Building Construction

Name	Source type	Lw dB(A)	
East - Air Compressor (6)	Area	113.5	
East - Cement and Mortar Mixer (2)	Area	111.6	
East - Crane (1)	Area	104.7	
East - Forklift (6)	Area	107.5	
East - Generator Set (2)	Area	112.6	
East - Pump (2)	Area	112.6	
East - Skid Steer Loader (2)	Area	109.7	
East - Tractor Loader Backhoe (1)	Area	111.7	
East - Water Truck (1)	Area	103.7	
East - Welder (6)	Area	109.5	
West - Air Compressor (6)	Area	113.5	
West - Cement and Mortar Mixer (2)	Area	111.6	
West - Crane (1)	Area	104.7	
West - Forklift (6)	Area	107.5	
West - Generator Set (2)	Area	112.6	
West - Pump (2)	Area	112.6	
West - Skid Steer Loader (2)	Area	109.7	
West - Tractor Loader Backhoe (1)	Area	111.7	
West - Water Truck (1)	Area	103.7	
West - Welder (6)	Area	109.5	

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Contribution level - 01c Building Construction

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 73.7 dB(A)			
West - Air Compressor (6)	Area	56.3	
East - Air Compressor (6)	Area	66.1	
West - Cement and Mortar Mixer (2)	Area	54.4	
East - Cement and Mortar Mixer (2)	Area	64.2	
West - Crane (1)	Area	47.5	
East - Crane (1)	Area	57.3	
West - Forklift (6)	Area	50.3	
East - Forklift (6)	Area	60.1	
West - Generator Set (2)	Area	55.4	
East - Generator Set (2)	Area	65.2	
West - Pump (2)	Area	55.4	
East - Pump (2)	Area	65.2	
West - Skid Steer Loader (2)	Area	52.5	
East - Skid Steer Loader (2)	Area	62.3	
West - Tractor Loader Backhoe (1)	Area	54.5	
East - Tractor Loader Backhoe (1)	Area	64.3	
West - Water Truck (1)	Area	46.5	
East - Water Truck (1)	Area	56.3	
West - Welder (6)	Area	52.3	
East - Welder (6)	Area	62.1	
Receiver R2 Leq,d 75.0 dB(A)			
West - Air Compressor (6)	Area	66.8	
East - Air Compressor (6)	Area	61.3	
West - Cement and Mortar Mixer (2)	Area	64.9	
East - Cement and Mortar Mixer (2)	Area	59.4	
West - Crane (1)	Area	58.0	
East - Crane (1)	Area	52.5	
West - Forklift (6)	Area	60.8	
East - Forklift (6)	Area	55.3	
West - Generator Set (2)	Area	65.9	
East - Generator Set (2)	Area	60.4	
West - Pump (2)	Area	65.9	
East - Pump (2)	Area	60.4	
West - Skid Steer Loader (2)	Area	63.0	
East - Skid Steer Loader (2)	Area	57.5	
West - Tractor Loader Backhoe (1)	Area	65.0	
East - Tractor Loader Backhoe (1)	Area	59.5	
West - Water Truck (1)	Area	57.0	
East - Water Truck (1)	Area	51.5	
West - Welder (6)	Area	62.8	
East - Welder (6)	Area	57.3	
Receiver R3 Leq,d 74.3 dB(A)			

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Contribution level - 01c Building Construction

Source	Source type	Leq,d dB(A)	
West - Air Compressor (6)	Area	67.0	
East - Air Compressor (6)	Area	48.5	
West - Cement and Mortar Mixer (2)	Area	65.1	
East - Cement and Mortar Mixer (2)	Area	46.6	
West - Crane (1)	Area	58.2	
East - Crane (1)	Area	39.7	
West - Forklift (6)	Area	61.0	
East - Forklift (6)	Area	42.5	
West - Generator Set (2)	Area	66.1	
East - Generator Set (2)	Area	47.6	
West - Pump (2)	Area	66.1	
East - Pump (2)	Area	47.6	
West - Skid Steer Loader (2)	Area	63.2	
East - Skid Steer Loader (2)	Area	44.7	
West - Tractor Loader Backhoe (1)	Area	65.2	
East - Tractor Loader Backhoe (1)	Area	46.7	
West - Water Truck (1)	Area	57.2	
East - Water Truck (1)	Area	38.7	
West - Welder (6)	Area	63.0	
East - Welder (6)	Area	44.5	
Receiver R4 Leq,d 45.7 dB(A)			
West - Air Compressor (6)	Area	37.0	
East - Air Compressor (6)	Area	33.3	
West - Cement and Mortar Mixer (2)	Area	35.1	
East - Cement and Mortar Mixer (2)	Area	31.4	
West - Crane (1)	Area	28.2	
East - Crane (1)	Area	24.5	
West - Forklift (6)	Area	31.0	
East - Forklift (6)	Area	27.3	
West - Generator Set (2)	Area	36.1	
East - Generator Set (2)	Area	32.4	
West - Pump (2)	Area	36.1	
East - Pump (2)	Area	32.4	
West - Skid Steer Loader (2)	Area	33.2	
East - Skid Steer Loader (2)	Area	29.5	
West - Tractor Loader Backhoe (1)	Area	35.2	
East - Tractor Loader Backhoe (1)	Area	31.5	
West - Water Truck (1)	Area	27.2	
East - Water Truck (1)	Area	23.5	
West - Welder (6)	Area	33.0	
East - Welder (6)	Area	29.3	
Receiver R5 Leq,d 55.3 dB(A)			
West - Air Compressor (6)	Area	34.2	

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Contribution level - 01c Building Construction

Source	Source type	Leq,d dB(A)	
East - Air Compressor (6)	Area	48.0	
West - Cement and Mortar Mixer (2)	Area	32.3	
East - Cement and Mortar Mixer (2)	Area	46.1	
West - Crane (1)	Area	25.4	
East - Crane (1)	Area	39.2	
West - Forklift (6)	Area	28.2	
East - Forklift (6)	Area	42.0	
West - Generator Set (2)	Area	33.3	
East - Generator Set (2)	Area	47.1	
West - Pump (2)	Area	33.3	
East - Pump (2)	Area	47.1	
West - Skid Steer Loader (2)	Area	30.4	
East - Skid Steer Loader (2)	Area	44.2	
West - Tractor Loader Backhoe (1)	Area	32.4	
East - Tractor Loader Backhoe (1)	Area	46.2	
West - Water Truck (1)	Area	24.4	
East - Water Truck (1)	Area	38.2	
West - Welder (6)	Area	30.2	
East - Welder (6)	Area	44.0	
Receiver R6 Leq,d 41.2 dB(A)			
West - Air Compressor (6)	Area	29.9	
East - Air Compressor (6)	Area	31.8	
West - Cement and Mortar Mixer (2)	Area	28.0	
East - Cement and Mortar Mixer (2)	Area	29.9	
West - Crane (1)	Area	21.1	
East - Crane (1)	Area	23.0	
West - Forklift (6)	Area	23.9	
East - Forklift (6)	Area	25.8	
West - Generator Set (2)	Area	29.0	
East - Generator Set (2)	Area	30.9	
West - Pump (2)	Area	29.0	
East - Pump (2)	Area	30.9	
West - Skid Steer Loader (2)	Area	26.1	
East - Skid Steer Loader (2)	Area	28.0	
West - Tractor Loader Backhoe (1)	Area	28.1	
East - Tractor Loader Backhoe (1)	Area	30.0	
West - Water Truck (1)	Area	20.1	
East - Water Truck (1)	Area	22.0	
West - Welder (6)	Area	25.9	
East - Welder (6)	Area	27.8	
Receiver R7 Leq,d 44.7 dB(A)			
West - Air Compressor (6)	Area	29.0	
East - Air Compressor (6)	Area	36.8	

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Contribution level - 01c Building Construction

Source	Source type	Leq,d dB(A)	
West - Cement and Mortar Mixer (2)	Area	27.1	
East - Cement and Mortar Mixer (2)	Area	34.9	
West - Crane (1)	Area	20.2	
East - Crane (1)	Area	28.0	
West - Forklift (6)	Area	23.0	
East - Forklift (6)	Area	30.8	
West - Generator Set (2)	Area	28.1	
East - Generator Set (2)	Area	35.9	
West - Pump (2)	Area	28.1	
East - Pump (2)	Area	35.9	
West - Skid Steer Loader (2)	Area	25.2	
East - Skid Steer Loader (2)	Area	33.0	
West - Tractor Loader Backhoe (1)	Area	27.2	
East - Tractor Loader Backhoe (1)	Area	35.0	
West - Water Truck (1)	Area	19.2	
East - Water Truck (1)	Area	27.0	
West - Welder (6)	Area	25.0	
East - Welder (6)	Area	32.8	

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Source Levels in dB(A) - 01d Paving Landscape

Name	Source type	Lw dB(A)	
East - Air Compressor (1)	Area	105.7	
East - Cement and Mortar Mixer (1)	Area	108.6	
East - Crane (1)	Area	104.7	
East - Forklift (1)	Area	99.7	
East - Generator Set (1)	Area	109.6	
East - Paver (2)	Area	108.6	
East - Paving Equipment (2)	Area	108.6	
East - Plate Compactor (2)	Area	110.7	
East - Pump (1)	Area	109.6	
East - Skid Steer Loader (1)	Area	106.7	
East - Tractor Loader Backhoe (1)	Area	111.7	
West - Air Compressor (1)	Area	105.7	
West - Cement and Mortar Mixer (1)	Area	108.6	
West - Crane (1)	Area	104.7	
West - Forklift (1)	Area	99.7	
West - Generator Set (1)	Area	109.6	
West - Paver (2)	Area	108.6	
West - Paving Equipment (2)	Area	108.6	
West - Plate Compactor (2)	Area	110.7	
West - Pump (1)	Area	109.6	
West - Skid Steer Loader (1)	Area	106.7	
West - Tractor Loader Backhoe (1)	Area	111.7	

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Contribution level - 01d Paving Landscape

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 72.0 dB(A)			
West - Air Compressor (1)	Area	48.5	
East - Air Compressor (1)	Area	58.3	
West - Cement and Mortar Mixer (1)	Area	51.4	
East - Cement and Mortar Mixer (1)	Area	61.2	
West - Crane (1)	Area	47.5	
East - Crane (1)	Area	57.3	
West - Forklift (1)	Area	42.5	
East - Forklift (1)	Area	52.3	
West - Generator Set (1)	Area	52.4	
East - Generator Set (1)	Area	62.2	
West - Paver (2)	Area	51.4	
East - Paver (2)	Area	61.2	
West - Paving Equipment (2)	Area	51.4	
East - Paving Equipment (2)	Area	61.2	
West - Plate Compactor (2)	Area	53.5	
East - Plate Compactor (2)	Area	63.3	
West - Pump (1)	Area	52.4	
East - Pump (1)	Area	62.2	
West - Skid Steer Loader (1)	Area	49.5	
East - Skid Steer Loader (1)	Area	59.3	
West - Tractor Loader Backhoe (1)	Area	54.5	
East - Tractor Loader Backhoe (1)	Area	64.3	
Receiver R2 Leq,d 73.3 dB(A)			
West - Air Compressor (1)	Area	59.0	
East - Air Compressor (1)	Area	53.5	
West - Cement and Mortar Mixer (1)	Area	61.9	
East - Cement and Mortar Mixer (1)	Area	56.4	
West - Crane (1)	Area	58.0	
East - Crane (1)	Area	52.5	
West - Forklift (1)	Area	53.0	
East - Forklift (1)	Area	47.5	
West - Generator Set (1)	Area	62.9	
East - Generator Set (1)	Area	57.4	
West - Paver (2)	Area	61.9	
East - Paver (2)	Area	56.4	
West - Paving Equipment (2)	Area	61.9	
East - Paving Equipment (2)	Area	56.4	
West - Plate Compactor (2)	Area	64.0	
East - Plate Compactor (2)	Area	58.5	
West - Pump (1)	Area	62.9	
East - Pump (1)	Area	57.4	
West - Skid Steer Loader (1)	Area	60.0	

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Contribution level - 01d Paving Landscape

Source	Source type	Leq,d dB(A)	
East - Skid Steer Loader (1)	Area	54.5	
West - Tractor Loader Backhoe (1)	Area	65.0	
East - Tractor Loader Backhoe (1)	Area	59.5	
Receiver R3 Leq,d 72.6 dB(A)			
West - Air Compressor (1)	Area	59.2	
East - Air Compressor (1)	Area	40.7	
West - Cement and Mortar Mixer (1)	Area	62.1	
East - Cement and Mortar Mixer (1)	Area	43.6	
West - Crane (1)	Area	58.2	
East - Crane (1)	Area	39.7	
West - Forklift (1)	Area	53.2	
East - Forklift (1)	Area	34.7	
West - Generator Set (1)	Area	63.1	
East - Generator Set (1)	Area	44.6	
West - Paver (2)	Area	62.1	
East - Paver (2)	Area	43.6	
West - Paving Equipment (2)	Area	62.1	
East - Paving Equipment (2)	Area	43.6	
West - Plate Compactor (2)	Area	64.2	
East - Plate Compactor (2)	Area	45.7	
West - Pump (1)	Area	63.1	
East - Pump (1)	Area	44.6	
West - Skid Steer Loader (1)	Area	60.2	
East - Skid Steer Loader (1)	Area	41.7	
West - Tractor Loader Backhoe (1)	Area	65.2	
East - Tractor Loader Backhoe (1)	Area	46.7	
Receiver R4 Leq,d 44.0 dB(A)			
West - Air Compressor (1)	Area	29.2	
East - Air Compressor (1)	Area	25.5	
West - Cement and Mortar Mixer (1)	Area	32.1	
East - Cement and Mortar Mixer (1)	Area	28.4	
West - Crane (1)	Area	28.2	
East - Crane (1)	Area	24.5	
West - Forklift (1)	Area	23.2	
East - Forklift (1)	Area	19.5	
West - Generator Set (1)	Area	33.1	
East - Generator Set (1)	Area	29.4	
West - Paver (2)	Area	32.1	
East - Paver (2)	Area	28.4	
West - Paving Equipment (2)	Area	32.1	
East - Paving Equipment (2)	Area	28.4	
West - Plate Compactor (2)	Area	34.2	
East - Plate Compactor (2)	Area	30.5	

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UCLA Research Park Contribution level - 01d Paving Landscape

Source	Source type	Leq,d dB(A)	
West - Pump (1)	Area	33.1	
East - Pump (1)	Area	29.4	
West - Skid Steer Loader (1)	Area	30.2	
East - Skid Steer Loader (1)	Area	26.5	
West - Tractor Loader Backhoe (1)	Area	35.2	
East - Tractor Loader Backhoe (1)	Area	31.5	
Receiver R5 Leq,d 53.6 dB(A)			
West - Air Compressor (1)	Area	26.4	
East - Air Compressor (1)	Area	40.2	
West - Cement and Mortar Mixer (1)	Area	29.3	
East - Cement and Mortar Mixer (1)	Area	43.1	
West - Crane (1)	Area	25.4	
East - Crane (1)	Area	39.2	
West - Forklift (1)	Area	20.4	
East - Forklift (1)	Area	34.2	
West - Generator Set (1)	Area	30.3	
East - Generator Set (1)	Area	44.1	
West - Paver (2)	Area	29.3	
East - Paver (2)	Area	43.1	
West - Paving Equipment (2)	Area	29.3	
East - Paving Equipment (2)	Area	43.1	
West - Plate Compactor (2)	Area	31.4	
East - Plate Compactor (2)	Area	45.2	
West - Pump (1)	Area	30.3	
East - Pump (1)	Area	44.1	
West - Skid Steer Loader (1)	Area	27.4	
East - Skid Steer Loader (1)	Area	41.2	
West - Tractor Loader Backhoe (1)	Area	32.4	
East - Tractor Loader Backhoe (1)	Area	46.2	
Receiver R6 Leq,d 39.4 dB(A)			
West - Air Compressor (1)	Area	22.1	
East - Air Compressor (1)	Area	24.0	
West - Cement and Mortar Mixer (1)	Area	25.0	
East - Cement and Mortar Mixer (1)	Area	26.9	
West - Crane (1)	Area	21.1	
East - Crane (1)	Area	23.0	
West - Forklift (1)	Area	16.1	
East - Forklift (1)	Area	18.0	
West - Generator Set (1)	Area	26.0	
East - Generator Set (1)	Area	27.9	
West - Paver (2)	Area	25.0	
East - Paver (2)	Area	26.9	
West - Paving Equipment (2)	Area	25.0	

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Contribution level - 01d Paving Landscape

Source	Source type	Leq,d dB(A)	
East - Paving Equipment (2)	Area	26.9	
West - Plate Compactor (2)	Area	27.1	
East - Plate Compactor (2)	Area	29.0	
West - Pump (1)	Area	26.0	
East - Pump (1)	Area	27.9	
West - Skid Steer Loader (1)	Area	23.1	
East - Skid Steer Loader (1)	Area	25.0	
West - Tractor Loader Backhoe (1)	Area	28.1	
East - Tractor Loader Backhoe (1)	Area	30.0	
Receiver R7 Leq,d 43.0 dB(A)			
West - Air Compressor (1)	Area	21.2	
East - Air Compressor (1)	Area	29.0	
West - Cement and Mortar Mixer (1)	Area	24.1	
East - Cement and Mortar Mixer (1)	Area	31.9	
West - Crane (1)	Area	20.2	
East - Crane (1)	Area	28.0	
West - Forklift (1)	Area	15.2	
East - Forklift (1)	Area	23.0	
West - Generator Set (1)	Area	25.1	
East - Generator Set (1)	Area	32.9	
West - Paver (2)	Area	24.1	
East - Paver (2)	Area	31.9	
West - Paving Equipment (2)	Area	24.1	
East - Paving Equipment (2)	Area	31.9	
West - Plate Compactor (2)	Area	26.2	
East - Plate Compactor (2)	Area	34.0	
West - Pump (1)	Area	25.1	
East - Pump (1)	Area	32.9	
West - Skid Steer Loader (1)	Area	22.2	
East - Skid Steer Loader (1)	Area	30.0	
West - Tractor Loader Backhoe (1)	Area	27.2	
East - Tractor Loader Backhoe (1)	Area	35.0	

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UCLA Research Park

Source Levels in dB(A) - 01e Off-Site Improvements

Name	Source type	Lw dB(A)	
West - Boom Lift (1)	Area	99.7	
West - Cement and Mortar Mixer (2)	Area	111.6	
West - Crane (1)	Area	104.7	
West - Grader (1)	Area	112.7	
West - Jackhammer (2)	Area	116.5	
West - Plate Compactor (1)	Area	107.7	
West - Surfacing Equipment (1)	Area	114.7	
West - Water Truck (1)	Area	103.7	

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UCLA Research Park

Contribution level - 01e Off-Site Improvements

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 67.6 dB(A)			
West - Boom Lift (1)	Area	46.6	
West - Cement and Mortar Mixer (2)	Area	58.5	
West - Crane (1)	Area	51.6	
West - Grader (1)	Area	59.6	
West - Jackhammer (2)	Area	63.4	
West - Plate Compactor (1)	Area	54.6	
West - Surfacing Equipment (1)	Area	61.6	
West - Water Truck (1)	Area	50.6	
Receiver R2 Leq,d 80.7 dB(A)			
West - Boom Lift (1)	Area	59.6	
West - Cement and Mortar Mixer (2)	Area	71.5	
West - Crane (1)	Area	64.6	
West - Grader (1)	Area	72.6	
West - Jackhammer (2)	Area	76.4	
West - Plate Compactor (1)	Area	67.6	
West - Surfacing Equipment (1)	Area	74.6	
West - Water Truck (1)	Area	63.6	
Receiver R3 Leq,d 59.9 dB(A)			
West - Boom Lift (1)	Area	38.8	
West - Cement and Mortar Mixer (2)	Area	50.7	
West - Crane (1)	Area	43.8	
West - Grader (1)	Area	51.8	
West - Jackhammer (2)	Area	55.6	
West - Plate Compactor (1)	Area	46.8	
West - Surfacing Equipment (1)	Area	53.8	
West - Water Truck (1)	Area	42.8	
Receiver R4 Leq,d 42.0 dB(A)			
West - Boom Lift (1)	Area	21.0	
West - Cement and Mortar Mixer (2)	Area	32.9	
West - Crane (1)	Area	26.0	
West - Grader (1)	Area	34.0	
West - Jackhammer (2)	Area	37.8	
West - Plate Compactor (1)	Area	29.0	
West - Surfacing Equipment (1)	Area	36.0	
West - Water Truck (1)	Area	25.0	
Receiver R5 Leq,d 42.9 dB(A)			
West - Boom Lift (1)	Area	21.9	
West - Cement and Mortar Mixer (2)	Area	33.8	
West - Crane (1)	Area	26.9	
West - Grader (1)	Area	34.9	
West - Jackhammer (2)	Area	38.7	

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Contribution level - 01e Off-Site Improvements

Source	Source type	Leq,d dB(A)	
West - Plate Compactor (1)	Area	29.9	
West - Surfacing Equipment (1)	Area	36.9	
West - Water Truck (1)	Area	25.9	
Receiver R6 Leq,d 38.9 dB(A)			
West - Boom Lift (1)	Area	17.9	
West - Cement and Mortar Mixer (2)	Area	29.8	
West - Crane (1)	Area	22.9	
West - Grader (1)	Area	30.9	
West - Jackhammer (2)	Area	34.7	
West - Plate Compactor (1)	Area	25.9	
West - Surfacing Equipment (1)	Area	32.9	
West - Water Truck (1)	Area	21.9	
Receiver R7 Leq,d 38.4 dB(A)			
West - Boom Lift (1)	Area	17.3	
West - Cement and Mortar Mixer (2)	Area	29.2	
West - Crane (1)	Area	22.3	
West - Grader (1)	Area	30.3	
West - Jackhammer (2)	Area	34.1	
West - Plate Compactor (1)	Area	25.3	
West - Surfacing Equipment (1)	Area	32.3	
West - Water Truck (1)	Area	21.3	

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Project: UCLA Research Park

Off-Site Haul Trucks

Phase	Maximum Number of Truck One Way Trips (delivery/haul)		Estimated Noise Levels, dBA Leq		
	Per Day	Per Hour (8-hr day)	Pico	Westwood	Overland
TNM noise level for 1 trucks		1	49.4	49.4	49.4
1. Demo (6hrs)	16	3	54.2	54.2	54.2
2. Grading (6hrs)	40	7	57.9	57.9	57.9
3. Building Construction (8hrs)	30	4	55.4	55.4	55.4
4. Paving (8hrs)	40	5	56.4	56.4	56.4
5. Overlapping of Demo + Grading	56	10	59.4	59.4	59.4
6. Overlapping of Buiding + Paving	70	9	58.9	58.9	58.9
5. Off-Site Improvements (8hrs)	4	1	49.4	49.4	49.4
		Threshold	80.0	80.0	80.0

INPUT: ROADWAYS
UCLA Research Park

Eyestone Environmental Sean Bui					16 January 2026 TNM 2.5						
INPUT: ROADWAYS							Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA				
PROJECT/CONTRACT:	UCLA Research Park										
RUN:	Construction - 1 truck trip										
Roadway		Points									
Name	Width	Name	No.	Coordinates (pavement)		Flow Control				Segment	
				X	Y	Z	Control	Speed	Percent	Pvmt	On
							Device	Constraint	Vehicles	Type	Struct?
									Affected		
	ft			ft	ft	ft		mph	%		
Haul Route	12.0	point1	1	0.0	0.0	0.00	Signal	0.00	50	Average	
		point2	2	1,000.0	0.0	0.00					

INPUT: TRAFFIC FOR LAeq1h Volumes
UCLA Research Park

Eyestone Environmental													
Sean Bui													
INPUT: TRAFFIC FOR LAeq1h Volumes													
PROJECT/CONTRACT:	UCLA Research Park												
RUN:	Construction - 1 truck trip												
Roadway	Points												
Name	Name	No.	Segment										
			Autos		MTrucks		HTrucks		Buses		Motorcycles		
			V	S	V	S	V	S	V	S	V	S	
			veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph	
Haul Route	point1	1	0	0	0	0	1	35	0	0	0	0	
	point2	2											

RESULTS: SOUND LEVELS

UCLA Research Park

Eyestone Environmental Sean Bui								16 January 2026 TNM 2.5 Calculated with TNM 2.5				
RESULTS: SOUND LEVELS												
PROJECT/CONTRACT:		UCLA Research Park										
RUN:		Construction - 1 truck trip										
BARRIER DESIGN:		INPUT HEIGHTS							Average pavement type shall be used unless			
									a State highway agency substantiates the use			
ATMOSPHERICS:		68 deg F, 50% RH							of a different type with approval of FHWA.			
Receiver												
Name	No.	#DUs	Existing	No Barrier					With Barrier			
			LAeq1h	LAeq1h		Increase over existing	Type	Calculated	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Westwood Pico & Overland	8	1	0.0	49.4	66	49.4	10	----	49.4	0.0	8	-8.0
Dwelling Units		# DUs	Noise Reduction									
			Min	Avg	Max							
			dB	dB	dB							
All Selected		1	0.0	0.0	0.0							
All Impacted		0	0.0	0.0	0.0							
All that meet NR Goal		0	0.0	0.0	0.0							

INPUT: RECEIVERS

UCLA Research Park

Eyestone Environmental						16 January 2026					
Sean Bui						TNM 2.5					
INPUT: RECEIVERS											
PROJECT/CONTRACT:	UCLA Research Park										
RUN:	Construction - 1 truck trip										
Receiver											
Name	No.	#DUs	Coordinates (ground)			Height	Input Sound Levels and Criteria				Active
			X	Y	Z	above	Existing	Impact Criteria		NR	in
						Ground	L _{Aeq} 1h	L _{Aeq} 1h	Sub'l	Goal	Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
Westwood Pico & Overland	8	1	250.0	45.0	0.00	4.92	0.00	66	10.0	8.0	Y

Project: UCLA Research Park

Construction Vibration Impacts

Reference Levels at 25 feet are based on FTA, 2006 (Transit Noise and Vibration Impact Assessment)

Calculations using FTA procedure with n= 1.1 (for receptors 25 feet or greater)

n= 1.1 (for receptors less than 25 feet, per Caltrans procedure)

ON-SITE CONSTRUCTION ACTIVITIES

Table 1: Construction Equipment Vibration Levels (PPV) - Building Damage

Equipment	Reference Vibration Levels at 25 ft., PPV	Estimated Vibration Levels at nearest off-site building structures, distance in feet, PPV							
		Commercial Buildings to the North		Residential Buildings to the South		Multi-Level Parking Structure to the East		Residential Buildings to the West	
		Distance	Level	Distance	Level	Distance	Level	Distance	Level
Vibratory Roller	0.210	100	0.046	45	0.110	10	0.575	20	0.268
Large Bulldozer	0.089	100	0.019	45	0.047	10	0.244	20	0.114
Caisson Drilling	0.089	100	0.019	45	0.047	10	0.244	20	0.114
Loaded Trucks	0.076	100	0.017	45	0.040	10	0.208	20	0.097
Jackhammer	0.035	100	0.008	45	0.018	10	0.096	20	0.045
Small bulldozer	0.003	100	0.001	45	0.002	10	0.008	20	0.004

OFF-SITE CONSTRUCTION HAUL TRUCKS

Table 2: Off-Site Haul Trucks - Building Damage

Equipment	Reference Vibration Levels at 50 ft., PPV	Estimated Vibration Levels at noted distance in feet, PPV							
		20	25						
Typical road surface	0.00565	0.016	0.012						

Ref. Levels based on FTA Figure 7-3 (converted from VdB to PPV)

Appendix C

Operation Noise Calculations

Project Composite Noise Calculations (CNEL)

Project: UCLA Research Park

Receptor	Ambient	Traffic	Mechanical	Loading	Outdoor Spaces	Emergence Generator	Project Composite	Ambient + Project	Increase
R1	62.9	46.5	63.4	47.8	51.3	35.9	63.8	66.4	3.5
R2	66.3	53.5	58.7	48.1	51.3	35.6	60.6	67.3	1.0
R3	57.1	34.9	48.2	47.3	43.7	44.6	52.4	58.4	1.3
R4	60.4	40.3	53.7	20.1	36.7	19.8	54.0	61.3	0.9
R5	59.2	42.5	62.2	19.8	37.1	26.3	62.2	64.0	4.8
R6	58.4	42.3	52.7	14.6	33.1	27.4	53.1	59.5	1.1
R7	56.9	14.4	46.1	18.4	27.1	21.7	46.2	57.3	0.4

Outdoor Mechanical Equipment Noise Calculations

Project: UCLA Research Park

Hours of Operations					
Estimated Noise Levels, Leq from SOUNDPLAN			Ld (7am to 7pm)	Le (7pm to 10pm)	Ln (10pm to 7am)
Receptor	Leq	CNEL			
R1	56.7	63.4	56.7	56.7	56.7
R2	52.0	58.7	52.0	52.0	52.0
R3	41.5	48.2	41.5	41.5	41.5
R4	47.0	53.7	47.0	47.0	47.0
R5	55.5	62.2	55.5	55.5	55.5
R6	46.0	52.7	46.0	46.0	46.0
R7	39.4	46.1	39.4	39.4	39.4

Receptor	Ambient CNEL	Project (CNEL)	Ambient + Project (CNEL)	Increase (CNEL)	Ambient (Leq)	Project (Leq)	Ambient + Project Leq	Increase (Leq)
R1	62.9	63.4	66.2	3.3	55.6	56.7	59.2	3.6
R2	66.3	58.7	67.0	0.7	60.6	52.0	61.2	0.6
R3	57.1	48.2	57.6	0.5	49.9	41.5	50.5	0.6
R4	60.4	53.7	61.2	0.8	54.3	47.0	55.0	0.7
R5	59.2	62.2	63.9	4.7	52.7	55.5	57.3	4.6
R6	58.4	52.7	59.4	1.0	52.5	46.0	53.4	0.9
R7	56.9	46.1	57.2	0.3	52.1	39.4	52.3	0.2

Loading & Trash Compactor Noise Calculations

Project: UCLA Research Park

Estimated Noise Levels, Leq from SOUNDPLAN			Hours of Operations		
			Ld (7am to 7pm)	Le (7pm to 10pm)	Ln (10pm to 7am)
Receptor	Leq	CNEL	8	0	2
R1	47.1	47.8	45.3	0.0	40.6
R2	47.4	48.1	45.6	0.0	40.9
R3	46.6	47.3	44.8	0.0	40.1
R4	19.4	20.1	17.6	0.0	12.9
R5	19.1	19.8	17.3	0.0	12.6
R6	13.9	14.6	12.1	0.0	7.4
R7	17.7	18.4	15.9	0.0	11.2

Receptor	Ambient CNEL	Project (CNEL)	Ambient + Project (CNEL)	Increase (CNEL)	Ambient (Leq)	Project (Leq)	Ambient + Project Leq	Increase (Leq)
R1	62.9	47.8	63.0	0.1	55.6	47.1	56.2	0.6
R2	66.3	48.1	66.4	0.1	60.6	47.4	60.8	0.2
R3	57.1	47.3	57.5	0.4	49.9	46.6	51.6	1.7
R4	60.4	20.1	60.4	0.0	54.3	19.4	54.3	0.0
R5	59.2	19.8	59.2	0.0	52.7	19.1	52.7	0.0
R6	58.4	14.6	58.4	0.0	52.5	13.9	52.5	0.0
R7	56.9	18.4	56.9	0.0	52.1	17.7	52.1	0.0

Outdoor Spaces Noise Calculations

Project: UCLA Research Park

					Hours of Operations		
Estimated noise levels, Leq (FROM SOUNDPLAN)					Ld (7am to 7pm)	Le (7pm to 10pm)	Ln (10pm to 7am)
Receptor		Occupants	Total, Leq	CNEL	12	3	2
R1		51.3	51.3	53.7	51.3	51.3	44.8
R2		51.3	51.3	53.7	51.3	51.3	44.8
R3		43.7	43.7	46.1	43.7	43.7	37.2
R4		36.7	36.7	39.1	36.7	36.7	30.2
R5		37.1	37.1	39.5	37.1	37.1	30.6
R6		33.1	33.1	35.5	33.1	33.1	26.6
R7		27.1	27.1	29.5	27.1	27.1	20.6

Receptor	Ambient CNEL	Project (CNEL)	Ambient + Project (CNEL)	Increase (CNEL)	Ambient (Leq)	Project (Leq)	Ambient + Project Leq	Increase (Leq)
R1	62.9	51.3	63.2	0.3	55.6	51.3	57.0	1.4
R2	66.3	51.3	66.4	0.1	60.6	51.3	61.1	0.5
R3	57.1	43.7	57.3	0.2	49.9	43.7	50.8	0.9
R4	60.4	36.7	60.4	0.0	54.3	36.7	54.4	0.1
R5	59.2	37.1	59.2	0.0	52.7	37.1	52.8	0.1
R6	58.4	33.1	58.4	0.0	52.5	33.1	52.5	0.0
R7	56.9	27.1	56.9	0.0	52.1	27.1	52.1	0.0

Emergency Generator Noise Calculations

Project: UCLA Research Park

Hours of Operations					
Estimated Noise Levels, Leq from SOUNDPLAN			Ld (7am to 7pm)	Le (7pm to 10pm)	Ln (10pm to 7am)
Receptor	Leq	CNEL			
R1	49.7	35.9	38.9	0.0	0.0
R2	49.4	35.6	38.6	0.0	0.0
R3	58.4	44.6	47.6	0.0	0.0
R4	33.4	19.8	22.6	0.0	0.0
R5	40.1	26.3	29.3	0.0	0.0
R6	41.2	27.4	30.4	0.0	0.0
R7	35.4	21.7	24.6	0.0	0.0

Receptor	Ambient CNEL	Project (CNEL)	Ambient + Project (CNEL)	Increase (CNEL)	Ambient (Leq)	Project (Leq)	Ambient + Project Leq	Increase (Leq)
R1	62.9	35.9	62.9	0.0	58.5	49.7	59.0	0.5
R2	66.3	35.6	66.3	0.0	64.5	49.4	64.6	0.1
R3	57.1	44.6	57.3	0.2	57.0	58.4	60.8	3.8
R4	60.4	19.8	60.4	0.0	59.2	33.4	59.2	0.0
R5	59.2	26.3	59.2	0.0	58.4	40.1	58.5	0.1
R6	58.4	27.4	58.4	0.0	56.7	41.2	56.8	0.1
R7	56.9	21.7	56.9	0.0	52.1	35.4	52.2	0.1

Off-Site Traffic (Delivery Trucks) Noise Calculations

Project: UCLA Research Park

Hours of Operations					
Estimated Noise Levels, Leq from SOUNDPLAN			Ld (7am to 7pm)	Le (7pm to 10pm)	Ln (10pm to 7am)
Receptor	Leq	CNEL			
R1	45.8	46.5	44.0	0.0	39.3
R2	52.8	53.5	51.0	0.0	46.3
R3	34.2	34.9	32.4	0.0	27.7
R4	39.6	40.3	37.8	0.0	33.1
R5	41.8	42.5	40.0	0.0	35.3
R6	41.6	42.3	39.8	0.0	35.1
R7	13.7	14.4	11.9	0.0	7.2

Receptor	Ambient CNEL	Project (CNEL)	Ambient + Project (CNEL)	Increase (CNEL)	Ambient (Leq)	Project (Leq)	Ambient + Project Leq	Increase (Leq)
R1	62.9	46.5	63.0	0.1	55.6	45.8	56.0	0.4
R2	66.3	53.5	66.5	0.2	60.6	52.8	61.3	0.7
R3	57.1	34.9	57.1	0.0	49.9	34.2	50.0	0.1
R4	60.4	40.3	60.4	0.0	54.3	39.6	54.4	0.1
R5	59.2	42.5	59.3	0.1	52.7	41.8	53.0	0.3
R6	58.4	42.3	58.5	0.1	52.5	41.6	52.8	0.3
R7	56.9	14.4	56.9	0.0	52.1	13.7	52.1	0.0

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Source Levels in dB(A) - 02a Mechanical

Name	Source type	Lw dB(A)	
AHSP-1	Point	98.0	
AHSP-2	Point	98.0	
AHSP-3	Point	98.0	
AHSP-4	Point	98.0	
AHSP-5	Point	98.0	
AHU-CIII	Point	90.0	
AHU-CIII	Point	90.0	
AHU-CIII	Point	90.0	
AHU-CIII	Point	90.0	
AHU-CIII	Point	90.0	
AHU-CIII	Point	90.0	
AHU-QIH	Point	92.0	
AHU-QIH	Point	92.0	
AHU-UCLA	Point	92.0	
AHU-UCLA	Point	92.0	
AHU-UCLA	Point	92.0	
AHU-UCLA	Point	92.0	
AHU-UCLA	Point	92.0	
AHU-UCLA	Point	92.0	
AHU-UCLA	Point	92.0	
CH-1	Point	109.0	
CH-2	Point	109.0	
CH-3	Point	109.0	
CT-1	Point	100.0	
CT-2	Point	100.0	
CT-3	Point	100.0	
EF-CIli	Point	90.0	
EF-CIII	Point	90.0	
EF-CIII	Point	90.0	
EF-CIII	Point	90.0	
EF-CIII	Point	90.0	
EF-CIII	Point	90.0	
EF-QIH	Point	92.0	
EF-QIH	Point	92.0	
EF-UCLA	Point	92.0	
EF-UCLA	Point	92.0	
EF-UCLA	Point	92.0	
EF-UCLA	Point	92.0	

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UCLA Research Park

Source Levels in dB(A) - 02a Mechanical

Name	Source type	Lw dB(A)	
EF-UCLA	Point	92.0	
EF-UCLA	Point	92.0	
EF-UCLA	Point	92.0	
HRC-1	Point	92.0	
HRC-2	Point	92.0	
HRC-3	Point	92.0	
HRC-4	Point	92.0	
HRC-5	Point	92.0	
HRC-6	Point	92.0	

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UCLA Research Park Contribution level - 02a Mechanical

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 56.7 dB(A)			
EF-CIIi	Point	26.6	
EF-CIII	Point	21.2	
EF-QIH	Point	27.8	
AHSP-1	Point	37.8	
AHSP-2	Point	37.8	
AHU-CIII	Point	29.7	
CH-1	Point	45.5	
CT-3	Point	44.8	
CT-2	Point	44.8	
HRC-3	Point	33.7	
CT-1	Point	44.8	
EF-CIII	Point	23.0	
EF-CIII	Point	25.0	
AHU-CIII	Point	22.2	
AHU-CIII	Point	24.4	
AHU-QIH	Point	30.4	
EF-UCLA	Point	29.1	
EF-UCLA	Point	30.1	
EF-UCLA	Point	24.1	
AHU-UCLA	Point	31.2	
AHU-UCLA	Point	31.1	
AHU-UCLA	Point	30.9	
AHU-UCLA	Point	33.1	
AHSP-3	Point	31.2	
AHSP-4	Point	31.1	
AHSP-5	Point	31.0	
HRC-4	Point	24.7	
HRC-5	Point	24.6	
EF-CIII	Point	21.7	
AHU-CIII	Point	25.1	
EF-QIH	Point	24.3	
AHU-CIII	Point	22.5	
AHU-CIII	Point	21.6	
AHU-QIH	Point	23.7	
HRC-2	Point	34.4	
HRC-1	Point	35.2	
EF-CIII	Point	27.4	
CH-2	Point	45.5	
CH-3	Point	54.2	
HRC-6	Point	24.6	
EF-UCLA	Point	24.1	
EF-UCLA	Point	22.6	

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UCLA Research Park Contribution level - 02a Mechanical

Source	Source type	Leq,d dB(A)	
AHU-UCLA	Point	22.3	
AHU-UCLA	Point	22.1	
EF-UCLA	Point	20.8	
EF-UCLA	Point	18.5	
AHU-UCLA	Point	17.6	
AHU-UCLA	Point	17.8	
Receiver R2 Leq,d 52.5 dB(A)			
EF-CIIi	Point	23.9	
EF-CIII	Point	26.9	
EF-QIH	Point	28.2	
AHSP-1	Point	26.3	
AHSP-2	Point	29.7	
AHU-CIII	Point	22.9	
CH-1	Point	39.5	
CT-3	Point	33.2	
CT-2	Point	32.0	
HRC-3	Point	23.0	
CT-1	Point	31.4	
EF-CIII	Point	23.4	
EF-CIII	Point	23.5	
AHU-CIII	Point	23.2	
AHU-CIII	Point	24.7	
AHU-QIH	Point	30.4	
EF-UCLA	Point	24.9	
EF-UCLA	Point	22.5	
EF-UCLA	Point	21.3	
AHU-UCLA	Point	25.3	
AHU-UCLA	Point	27.3	
AHU-UCLA	Point	27.8	
AHU-UCLA	Point	30.4	
AHSP-3	Point	27.7	
AHSP-4	Point	27.9	
AHSP-5	Point	27.9	
HRC-4	Point	21.7	
HRC-5	Point	22.5	
EF-CIII	Point	23.1	
AHU-CIII	Point	23.4	
EF-QIH	Point	23.2	
AHU-CIII	Point	23.7	
AHU-CIII	Point	26.6	
AHU-QIH	Point	24.2	
HRC-2	Point	23.0	
HRC-1	Point	23.3	

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UCLA Research Park Contribution level - 02a Mechanical

Source	Source type	Leq,d dB(A)	
EF-CIII	Point	17.4	
CH-2	Point	44.3	
CH-3	Point	50.9	
HRC-6	Point	22.5	
EF-UCLA	Point	21.2	
EF-UCLA	Point	20.2	
AHU-UCLA	Point	18.5	
AHU-UCLA	Point	18.4	
EF-UCLA	Point	21.4	
EF-UCLA	Point	20.9	
AHU-UCLA	Point	17.1	
AHU-UCLA	Point	17.5	
Receiver R3 Leq,d 41.5 dB(A)			
EF-CIII	Point	16.1	
EF-CIII	Point	16.0	
EF-QIH	Point	21.4	
AHSP-1	Point	20.0	
AHSP-2	Point	20.9	
AHU-CIII	Point	13.0	
CH-1	Point	33.6	
CT-3	Point	25.7	
CT-2	Point	25.4	
HRC-3	Point	16.5	
CT-1	Point	25.3	
EF-CIII	Point	12.9	
EF-CIII	Point	12.7	
AHU-CIII	Point	12.1	
AHU-CIII	Point	14.4	
AHU-QIH	Point	19.8	
EF-UCLA	Point	20.1	
EF-UCLA	Point	20.1	
EF-UCLA	Point	16.6	
AHU-UCLA	Point	15.6	
AHU-UCLA	Point	17.8	
AHU-UCLA	Point	18.4	
AHU-UCLA	Point	21.2	
AHSP-3	Point	22.9	
AHSP-4	Point	22.9	
AHSP-5	Point	22.9	
HRC-4	Point	16.8	
HRC-5	Point	16.8	
EF-CIII	Point	15.3	
AHU-CIII	Point	12.9	

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UCLA Research Park Contribution level - 02a Mechanical

Source	Source type	Leq,d dB(A)	
EF-QIH	Point	17.0	
AHU-CIII	Point	16.3	
AHU-CIII	Point	15.9	
AHU-QIH	Point	17.4	
HRC-2	Point	16.6	
HRC-1	Point	17.0	
EF-CIII	Point	11.3	
CH-2	Point	36.1	
CH-3	Point	36.1	
HRC-6	Point	16.7	
EF-UCLA	Point	16.9	
EF-UCLA	Point	16.1	
AHU-UCLA	Point	16.0	
AHU-UCLA	Point	16.7	
EF-UCLA	Point	12.7	
EF-UCLA	Point	13.2	
AHU-UCLA	Point	14.0	
AHU-UCLA	Point	14.2	
Receiver R4 Leq,d 47.0 dB(A)			
EF-CIIi	Point	21.4	
EF-CIII	Point	26.4	
EF-QIH	Point	23.6	
AHSP-1	Point	24.7	
AHSP-2	Point	27.4	
AHU-CIII	Point	18.7	
CH-1	Point	37.9	
CT-3	Point	36.0	
CT-2	Point	35.7	
HRC-3	Point	19.3	
CT-1	Point	35.7	
EF-CIII	Point	17.4	
EF-CIII	Point	17.7	
AHU-CIII	Point	18.0	
AHU-CIII	Point	20.7	
AHU-QIH	Point	21.9	
EF-UCLA	Point	21.4	
EF-UCLA	Point	19.7	
EF-UCLA	Point	16.1	
AHU-UCLA	Point	14.8	
AHU-UCLA	Point	16.6	
AHU-UCLA	Point	17.3	
AHU-UCLA	Point	19.9	
AHSP-3	Point	23.0	

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UCLA Research Park Contribution level - 02a Mechanical

Source	Source type	Leq,d dB(A)	
AHSP-4	Point	23.1	
AHSP-5	Point	23.2	
HRC-4	Point	17.2	
HRC-5	Point	17.2	
EF-CIII	Point	21.9	
AHU-CIII	Point	18.4	
EF-QIH	Point	27.8	
AHU-CIII	Point	26.4	
AHU-CIII	Point	26.0	
AHU-QIH	Point	27.4	
HRC-2	Point	22.8	
HRC-1	Point	27.8	
EF-CIII	Point	13.9	
CH-2	Point	40.9	
CH-3	Point	41.0	
HRC-6	Point	17.2	
EF-UCLA	Point	17.1	
EF-UCLA	Point	16.2	
AHU-UCLA	Point	18.0	
AHU-UCLA	Point	18.7	
EF-UCLA	Point	18.2	
EF-UCLA	Point	19.9	
AHU-UCLA	Point	19.7	
AHU-UCLA	Point	19.4	
Receiver R5 Leq,d 55.5 dB(A)			
EF-CIII	Point	23.2	
EF-CIII	Point	23.9	
EF-QIH	Point	23.5	
AHSP-1	Point	36.8	
AHSP-2	Point	36.7	
AHU-CIII	Point	30.2	
CH-1	Point	49.1	
CT-3	Point	38.7	
CT-2	Point	38.3	
HRC-3	Point	28.9	
CT-1	Point	38.3	
EF-CIII	Point	26.5	
EF-CIII	Point	26.9	
AHU-CIII	Point	26.6	
AHU-CIII	Point	29.2	
AHU-QIH	Point	23.5	
EF-UCLA	Point	21.3	
EF-UCLA	Point	20.8	

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UCLA Research Park Contribution level - 02a Mechanical

Source	Source type	Leq,d dB(A)	
EF-UCLA	Point	21.4	
AHU-UCLA	Point	23.6	
AHU-UCLA	Point	24.1	
AHU-UCLA	Point	23.2	
AHU-UCLA	Point	21.7	
AHSP-3	Point	26.1	
AHSP-4	Point	26.0	
AHSP-5	Point	26.0	
HRC-4	Point	19.9	
HRC-5	Point	19.5	
EF-CIII	Point	29.5	
AHU-CIII	Point	27.6	
EF-QIH	Point	30.9	
AHU-CIII	Point	23.4	
AHU-CIII	Point	23.9	
AHU-QIH	Point	30.4	
HRC-2	Point	30.9	
HRC-1	Point	30.9	
EF-CIII	Point	25.3	
CH-2	Point	49.1	
CH-3	Point	51.6	
HRC-6	Point	19.4	
EF-UCLA	Point	22.4	
EF-UCLA	Point	20.2	
AHU-UCLA	Point	21.7	
AHU-UCLA	Point	22.2	
EF-UCLA	Point	26.6	
EF-UCLA	Point	28.0	
AHU-UCLA	Point	30.1	
AHU-UCLA	Point	30.3	
Receiver R6 Leq,d 46.0 dB(A)			
EF-CIII	Point	25.1	
EF-CIII	Point	24.8	
EF-QIH	Point	18.8	
AHSP-1	Point	34.8	
AHSP-2	Point	32.3	
AHU-CIII	Point	23.3	
CH-1	Point	39.5	
CT-3	Point	26.8	
CT-2	Point	28.5	
HRC-3	Point	22.7	
CT-1	Point	29.4	
EF-CIII	Point	19.1	

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UCLA Research Park Contribution level - 02a Mechanical

Source	Source type	Leq,d dB(A)	
EF-CIII	Point	18.9	
AHU-CIII	Point	20.5	
AHU-CIII	Point	16.1	
AHU-QIH	Point	20.4	
EF-UCLA	Point	19.8	
EF-UCLA	Point	19.3	
EF-UCLA	Point	21.6	
AHU-UCLA	Point	20.9	
AHU-UCLA	Point	18.7	
AHU-UCLA	Point	18.8	
AHU-UCLA	Point	18.1	
AHSP-3	Point	28.0	
AHSP-4	Point	28.4	
AHSP-5	Point	28.6	
HRC-4	Point	25.6	
HRC-5	Point	26.7	
EF-CIII	Point	17.4	
AHU-CIII	Point	23.5	
EF-QIH	Point	26.3	
AHU-CIII	Point	23.7	
AHU-CIII	Point	23.8	
AHU-QIH	Point	25.4	
HRC-2	Point	22.9	
HRC-1	Point	21.5	
EF-CIII	Point	27.9	
CH-2	Point	36.3	
CH-3	Point	34.5	
HRC-6	Point	32.2	
EF-UCLA	Point	20.7	
EF-UCLA	Point	20.7	
AHU-UCLA	Point	23.2	
AHU-UCLA	Point	23.1	
EF-UCLA	Point	28.7	
EF-UCLA	Point	29.8	
AHU-UCLA	Point	36.4	
AHU-UCLA	Point	31.6	
Receiver R7 Leq,d 39.4 dB(A)			
EF-CIII	Point	8.4	
EF-CIII	Point	8.6	
EF-QIH	Point	10.4	
AHSP-1	Point	20.9	
AHSP-2	Point	18.7	
AHU-CIII	Point	13.5	

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UCLA Research Park Contribution level - 02a Mechanical

Source	Source type	Leq,d dB(A)	
CH-1	Point	30.2	
CT-3	Point	20.4	
CT-2	Point	20.2	
HRC-3	Point	12.4	
CT-1	Point	20.1	
EF-CIII	Point	15.5	
EF-CIII	Point	14.8	
AHU-CIII	Point	16.5	
AHU-CIII	Point	14.4	
AHU-QIH	Point	10.5	
EF-UCLA	Point	18.9	
EF-UCLA	Point	19.1	
EF-UCLA	Point	18.3	
AHU-UCLA	Point	18.8	
AHU-UCLA	Point	16.8	
AHU-UCLA	Point	17.2	
AHU-UCLA	Point	17.6	
AHSP-3	Point	28.0	
AHSP-4	Point	28.5	
AHSP-5	Point	29.1	
HRC-4	Point	23.7	
HRC-5	Point	24.4	
EF-CIII	Point	14.9	
AHU-CIII	Point	14.1	
EF-QIH	Point	11.2	
AHU-CIII	Point	8.0	
AHU-CIII	Point	8.5	
AHU-QIH	Point	10.9	
HRC-2	Point	12.0	
HRC-1	Point	12.1	
EF-CIII	Point	13.1	
CH-2	Point	30.3	
CH-3	Point	30.5	
HRC-6	Point	25.0	
EF-UCLA	Point	23.6	
EF-UCLA	Point	20.0	
AHU-UCLA	Point	20.4	
AHU-UCLA	Point	21.1	
EF-UCLA	Point	22.5	
EF-UCLA	Point	20.8	
AHU-UCLA	Point	21.7	
AHU-UCLA	Point	20.8	

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Source Levels in dB(A) - 02b Loading Docks & Trash Compactor

Name	Source type	Lw dB(A)	
Block 1 Trash Compactor	Point	87.7	
Loading - RP East Block 1	Point	91.9	
Loading - RP East Central	Point	91.9	
Loading - RP West	Point	91.9	

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Contribution level - 02b Loading Docks & Trash Compactor

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 47.1 dB(A)			
Loading - RP West	Point	34.2	
Loading - RP East Central	Point	45.0	
Loading - RP East Block 1	Point	41.1	
Block 1 Trash Compactor	Point	36.2	
Receiver R2 Leq,d 47.4 dB(A)			
Loading - RP West	Point	39.7	
Loading - RP East Central	Point	34.5	
Loading - RP East Block 1	Point	44.9	
Block 1 Trash Compactor	Point	40.9	
Receiver R3 Leq,d 46.6 dB(A)			
Loading - RP West	Point	46.4	
Loading - RP East Central	Point	23.2	
Loading - RP East Block 1	Point	31.3	
Block 1 Trash Compactor	Point	27.1	
Receiver R4 Leq,d 19.4 dB(A)			
Loading - RP West	Point	16.8	
Loading - RP East Central	Point	10.0	
Loading - RP East Block 1	Point	13.2	
Block 1 Trash Compactor	Point	9.5	
Receiver R5 Leq,d 19.1 dB(A)			
Loading - RP West	Point	11.5	
Loading - RP East Central	Point	13.1	
Loading - RP East Block 1	Point	15.2	
Block 1 Trash Compactor	Point	11.2	
Receiver R6 Leq,d 13.9 dB(A)			
Loading - RP West	Point	7.3	
Loading - RP East Central	Point	10.1	
Loading - RP East Block 1	Point	8.0	
Block 1 Trash Compactor	Point	4.5	
Receiver R7 Leq,d 17.7 dB(A)			
Loading - RP West	Point	6.5	
Loading - RP East Central	Point	16.0	
Loading - RP East Block 1	Point	10.2	
Block 1 Trash Compactor	Point	6.1	

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UCLA Research Park
Source Levels in dB(A) - 02c Outdoor Spaces

Name	Source type	Lw dB(A)	
Outdoor RPE Level 1	Area	93.9	
Outdoor RPE Level 2	Area	97.2	
Outdoor RPE Level 3	Area	97.2	
Outdoor RPE Level Roof 1	Area	94.8	
Outdoor RPE Level Roof 2	Area	95.5	
Outdoor RPW Level 1	Area	91.8	
Outdoor RPW Level 2	Area	82.6	
Outdoor RPW Level Roof	Area	97.8	
Outdoor Westwood Bridge	Area	95.2	

UCLA Research Park

Contribution level - 02c Outdoor Spaces

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 51.3 dB(A)			
Outdoor RPW Level 1	Area	37.1	
Outdoor RPE Level 1	Area	44.4	
Outdoor RPW Level 2	Area	26.6	
Outdoor RPE Level 2	Area	41.2	
Outdoor RPE Level 3	Area	44.8	
Outdoor RPE Level Roof 2	Area	45.4	
Outdoor Westwood Bridge	Area	37.6	
Outdoor RPE Level Roof 1	Area	42.2	
Outdoor RPW Level Roof	Area	34.4	
Receiver R2 Leq,d 51.3 dB(A)			
Outdoor RPW Level 1	Area	45.8	
Outdoor RPE Level 1	Area	44.6	
Outdoor RPW Level 2	Area	33.5	
Outdoor RPE Level 2	Area	38.4	
Outdoor RPE Level 3	Area	40.7	
Outdoor RPE Level Roof 2	Area	38.5	
Outdoor Westwood Bridge	Area	41.3	
Outdoor RPE Level Roof 1	Area	42.9	
Outdoor RPW Level Roof	Area	37.6	
Receiver R3 Leq,d 43.7 dB(A)			
Outdoor RPW Level 1	Area	29.6	
Outdoor RPE Level 1	Area	24.8	
Outdoor RPW Level 2	Area	29.1	
Outdoor RPE Level 2	Area	22.3	
Outdoor RPE Level 3	Area	28.7	
Outdoor RPE Level Roof 2	Area	29.3	
Outdoor Westwood Bridge	Area	27.0	
Outdoor RPE Level Roof 1	Area	30.4	
Outdoor RPW Level Roof	Area	42.6	
Receiver R4 Leq,d 36.7 dB(A)			
Outdoor RPW Level 1	Area	14.7	
Outdoor RPE Level 1	Area	14.1	
Outdoor RPW Level 2	Area	6.7	
Outdoor RPE Level 2	Area	17.4	
Outdoor RPE Level 3	Area	22.0	
Outdoor RPE Level Roof 2	Area	27.6	
Outdoor Westwood Bridge	Area	30.6	
Outdoor RPE Level Roof 1	Area	31.0	
Outdoor RPW Level Roof	Area	31.5	
Receiver R5 Leq,d 37.1 dB(A)			
Outdoor RPW Level 1	Area	17.8	

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Contribution level - 02c Outdoor Spaces

Source	Source type	Leq,d dB(A)	
Outdoor RPE Level 1	Area	27.0	
Outdoor RPW Level 2	Area	7.9	
Outdoor RPE Level 2	Area	24.2	
Outdoor RPE Level 3	Area	25.8	
Outdoor RPE Level Roof 2	Area	27.9	
Outdoor Westwood Bridge	Area	31.9	
Outdoor RPE Level Roof 1	Area	24.9	
Outdoor RPW Level Roof	Area	31.7	
Receiver R6 Leq,d 33.1 dB(A)			
Outdoor RPW Level 1	Area	9.8	
Outdoor RPE Level 1	Area	11.4	
Outdoor RPW Level 2	Area	0.6	
Outdoor RPE Level 2	Area	19.3	
Outdoor RPE Level 3	Area	22.0	
Outdoor RPE Level Roof 2	Area	23.5	
Outdoor Westwood Bridge	Area	26.6	
Outdoor RPE Level Roof 1	Area	21.2	
Outdoor RPW Level Roof	Area	29.8	
Receiver R7 Leq,d 27.1 dB(A)			
Outdoor RPW Level 1	Area	9.8	
Outdoor RPE Level 1	Area	13.4	
Outdoor RPW Level 2	Area	-1.5	
Outdoor RPE Level 2	Area	22.9	
Outdoor RPE Level 3	Area	21.8	
Outdoor RPE Level Roof 2	Area	18.9	
Outdoor Westwood Bridge	Area	12.1	
Outdoor RPE Level Roof 1	Area	13.7	
Outdoor RPW Level Roof	Area	11.9	

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UCLA Research Park
Source Levels in dB(A) - 02d Generator

UCLA Research Park

Contribution level - 02d Generator

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 49.7 dB(A)			
GEN-RP East 8	Point	48.5	
GEN-RP East 3	Point	32.4	
GEN-West	Point	43.1	
Receiver R2 Leq,d 49.4 dB(A)			
GEN-RP East 8	Point	42.5	
GEN-RP East 3	Point	33.0	
GEN-West	Point	48.3	
Receiver R3 Leq,d 58.4 dB(A)			
GEN-RP East 8	Point	29.4	
GEN-RP East 3	Point	24.1	
GEN-West	Point	58.4	
Receiver R4 Leq,d 33.4 dB(A)			
GEN-RP East 8	Point	27.0	
GEN-RP East 3	Point	31.1	
GEN-West	Point	26.0	
Receiver R5 Leq,d 40.1 dB(A)			
GEN-RP East 8	Point	29.6	
GEN-RP East 3	Point	39.7	
GEN-West	Point	20.1	
Receiver R6 Leq,d 41.2 dB(A)			
GEN-RP East 8	Point	31.6	
GEN-RP East 3	Point	40.7	
GEN-West	Point	14.4	
Receiver R7 Leq,d 35.4 dB(A)			
GEN-RP East 8	Point	32.6	
GEN-RP East 3	Point	32.0	
GEN-West	Point	15.3	

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Emission calculation road - 02e Delivery Trucks

Road	Vehicle Volumes Day Veh/h	
East Driveway	9.80	
Pico East of Westwood	11.10	
West Driveway	1.30	
Pico West of Westwood	11.10	
Westwood South of Driveway	11.10	
Westwood North of Driveway	11.10	

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Contribution level - 02e Delivery Trucks

Source	Source type	Leq,d dB(A)	
Receiver R1 Leq,d 45.8 dB(A)			
East Driveway	Road	44.5	
Pico East of Westwood	Road	21.2	
West Driveway	Road	26.0	
Pico West of Westwood	Road	16.1	
Westwood South of Driveway	Road	39.0	
Westwood North of Driveway	Road	29.8	
Receiver R2 Leq,d 52.8 dB(A)			
East Driveway	Road	42.5	
Pico East of Westwood	Road	27.4	
West Driveway	Road	37.4	
Pico West of Westwood	Road	30.3	
Westwood South of Driveway	Road	51.7	
Westwood North of Driveway	Road	42.5	
Receiver R3 Leq,d 34.2 dB(A)			
East Driveway	Road	26.6	
Pico East of Westwood	Road	10.0	
West Driveway	Road	28.1	
Pico West of Westwood	Road	28.0	
Westwood South of Driveway	Road	29.3	
Westwood North of Driveway	Road	18.8	
Receiver R4 Leq,d 39.6 dB(A)			
East Driveway	Road	7.0	
Pico East of Westwood	Road	23.8	
West Driveway	Road	3.8	
Pico West of Westwood	Road	39.5	
Westwood South of Driveway	Road	7.6	
Westwood North of Driveway	Road	17.4	
Receiver R5 Leq,d 41.8 dB(A)			
East Driveway	Road	13.1	
Pico East of Westwood	Road	41.7	
West Driveway	Road	3.9	
Pico West of Westwood	Road	21.8	
Westwood South of Driveway	Road	8.1	
Westwood North of Driveway	Road	18.7	
Receiver R6 Leq,d 41.6 dB(A)			
East Driveway	Road	5.1	
Pico East of Westwood	Road	41.6	
West Driveway	Road	-6.0	
Pico West of Westwood	Road	12.9	
Westwood South of Driveway	Road	6.2	
Westwood North of Driveway	Road	8.4	

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Contribution level - 02e Delivery Trucks

Source	Source type	Leq,d dB(A)	
Receiver R7 Leq,d 13.7 dB(A)			
East Driveway	Road	6.1	
Pico East of Westwood	Road	12.2	
West Driveway	Road	-8.2	
Pico West of Westwood	Road	-5.5	
Westwood South of Driveway	Road	3.5	
Westwood North of Driveway	Road	-5.7	

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