APPENDIX I

Noise and Ground Vibration Technical Report

Noise and Ground Vibration Technical Report
La Brea Tar Pits Master Plan

Los Angeles, California

NOVEMBER 2022

PREPARED FOR

Los Angeles County Museum of Natural History Foundation

LEAD AGENCY

County of Los Angeles

PREPARED BY

SWCA Environmental Consultants

NOISE AND GROUND VIBRATION TECHNICAL REPORT
LA BREA TAR PITS MASTER PLAN
LOS ANGELES, CALIFORNIA

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EXECUTIVE SUMMARY

The objective of this Noise and Ground Vibration Technical Report is to evaluate and describe the potential noise and vibration impacts of the proposed La Brea Tar Pits Master Plan in Los Angeles, California. The project site is located on the eastern and northwestern portions of Hancock Park and broadly encompasses what is known as the La Brea Tar Pits.

The analysis outlines the existing noise environment in the project area, estimates future noise and vibration levels at neighboring land uses as a result of the project's construction and operation, and evaluates the potential for significant impacts. Also provided is an assessment of the project's contribution to potential cumulative noise impacts. Based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines, this study has been prepared to be consistent with applicable City of Los Angeles and Los Angeles County standards and significance thresholds.

The appendices include the noise worksheets and technical data used for this study. The report presents the findings of whether a summary of the potential that the project would exceed applicable noise and vibration regulations, standards, and thresholds. The following are the results of the analyses:

- Due to on-site construction equipment and activities, surrounding noise-sensitive receptors may experience short-term and transient noise impacts during construction activities. Implementation of the below-described Mitigation Measure NOI-1, presented in Section 7.4 of this report, would minimize this impact to less than significant.
- Construction of the project would result in intermittent, transient ground-borne vibration in the vicinity of the project site; however, these impacts are not anticipated to exceed the significance thresholds. Consequently, construction vibration impacts would be less than significant.
- Operation of the project would produce noise from project-related traffic or on-site sources (parking structure, loading dock area, waste compactors, outdoor areas, and mechanical equipment) that would not exceed significance levels. Therefore, operational noise impacts would be less than significant.
- The project's operation would affect the traffic noise levels in the adjacent off-site areas. To estimate the off-site traffic noise increases on the surrounding off-site areas, the changes in traffic noise levels on 13 roadway segments were calculated based on the peak-hour traffic volume change. The assessment shows that the traffic noise level increases for land uses close to the study area roadway segments are not considered significant under any of the project traffic scenarios.
- Project operation would not result in excessive vibration levels at neighboring sensitive receptors. Therefore, the long-term vibration impacts would be less than significant.
- Noise resulting from cumulative construction activities would be reduced to the extent reasonably and technical feasible through mitigation measures proposed for each project and compliance with locally enforced noise ordinances. Construction activities of other cumulative projects in the vicinity would be required to comply with the City of Los Angeles's allowed construction hours and construction would be temporary. In addition, the La Brea Master Plan project is anticipated to implement Mitigation Measure NOI-1. With implementation of this mitigation measure and compliance with City requirements, construction-related noise would have a less-than-significant cumulative impact.

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CONTENTS

Tables

Appendices

Figures

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1 INTRODUCTION

The 13-acre La Brea Tar Pits site is located within the eastern and northeastern portions of Hancock Park in Los Angeles, California. The La Brea Tar Pits, the George C. Page Museum (Page Museum), and associated facilities are owned by the County of Los Angeles (County) but are managed by the non-profit Los Angeles County Museum of Natural History Foundation (Foundation). The Foundation's role is to carry out all County services including public access and programming, administration, and operation of the Natural History Museums of Los Angeles County, including the La Brea Tar Pits and Page Museum. The Foundation proposes a redevelopment, or "reimagining," of the La Brea Tar Pits site, including renovation of the Page Museum, constructing a new museum building, and developing new amenities in surrounding portions of Hancock Park.

The County is the Lead Agency under the California Environmental Quality Act (CEQA); the Museum of Natural History is a County departmental unit. The Foundation retained SWCA Environmental Consultants (SWCA) to prepare a Noise and Ground Vibration Technical Report in support of the proposed La Brea Tar Pits Master Plan (project). The purpose of this assessment is to evaluate the project's potential construction and operational noise and vibration levels and determine the potential level of impact the project would have on the environment.

2 PROJECT LOCATION AND DESCRIPTION

2.1 Project Location

The La Brea Tar Pits property (project site) is located at 5801 Wilshire Boulevard within the 23-acre Hancock Park (Assessor's Parcel Number 550-801-6902) (Figures 1 and 2). The project site includes 13 acres of the eastern and northwestern portions of Hancock Park and is directly adjacent to the Los Angeles County Museum of Art (LACMA). The project site is located approximately 5.5 miles west from downtown Los Angeles and approximately 8.6 miles east of the Pacific Ocean. It is bounded by West 6th Street to the north (an approximately 1,200-foot-long frontage), South Curson Avenue to the east (an approximately 830-foot-long frontage), Wilshire Boulevard to the south (an approximately 500-foot-long frontage), and the LACMA to the west (an approximately 250-foot-long frontage). The area is known as the Miracle Mile neighborhood of the city of Los Angeles. The project site can be found on the U.S. Geological Survey Hollywood, California 7.5-minute quadrangle in Section 20, Township 1 South, Range 14 West.

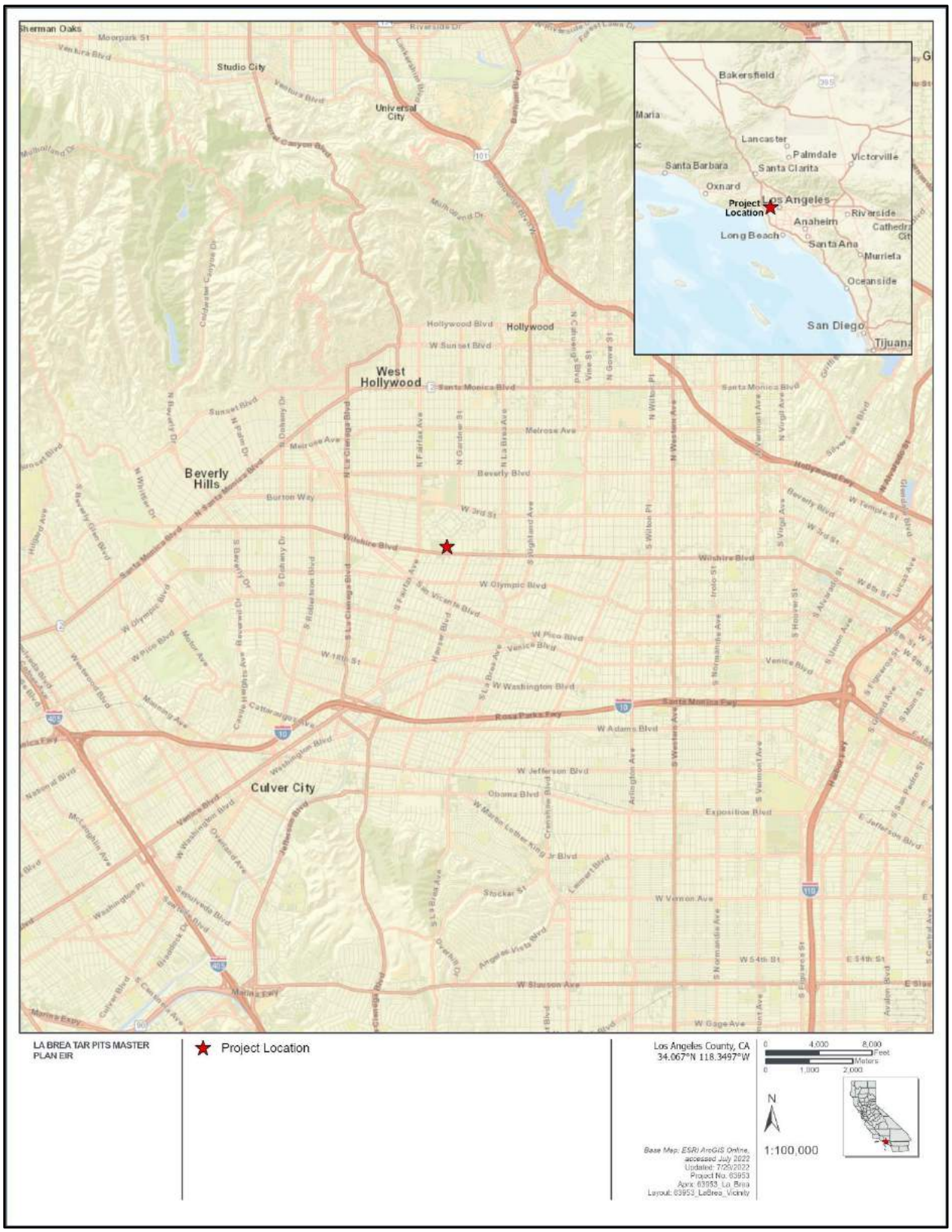


Figure 1. Project vicinity map.

Figure 2. Project location map.

1.1 Existing Conditions and Surrounding Land Uses

The project site includes 13 acres of the eastern and northwestern portions of Hancock Park and broadly encompasses what is known as the La Brea Tar Pits, which includes the Page Museum (see Figure 2). The entirety of Hancock Park is enclosed within an 8- to 10-foot-high metal fence, which serves to secure the site by providing full closure of Hancock Park when the La Brea Tar Pits, Page Museum, and LACMA are closed in the evenings.

The George C. Page Museum is approximately 63,200 square feet and is located on the eastern portion of the project site. The project site contains multiple active fossil quarries, commonly called "tar pits." The active tar pits (Pits 3, 4, 9, 13, 61, 67, and 91) are located within the northwestern portion of the project site, along with the Observation Pit on the western boundary of the project site. Project 23[1] and Pit 91 are active fossil recovery and excavation sites also located in the northwestern portion of the project site. The Lake Pit is largest paleontological excavation pit on the grounds of Hancock Park, located in the southeastern portion of the project site.

The project site includes an approximately 28,000-square-foot multipurpose grass lawn, known as the Central Green, is located to the west of the Page Museum. Parking for the La Brea Tar Pits is located in the northeast corner of the project site, at the corner of South Curson Avenue and West 6th Street (see Figure 2). Vehicles enter and depart the lot from both directions on South Curson Avenue.

The project site is surrounded by a variety of commercial uses, museums, residential buildings, and schools. The project site is bounded by the Park La Brea Pool and multi-family residential uses to the north across West 6th Street, commercial and residential uses to the east across South Curson Avenue, the Craft Contemporary Museum and other museum and commercial uses south across Wilshire Boulevard, and museum and commercial uses to the west (see Figure 2).

2.2 Project Description

The project would result in a reimagined site design, expansion, and upgrades for the La Brea Tar Pits complex and portions of Hancock Park, including renovations to the Page Museum (Figure 3). Table 1 provides a summary of the project components; more detail on the project components is provided following the table.

2.2.1 Page Museum Renovations

The project would renovate the existing Page Museum within the same footprint as the existing building (currently approximately 63,200 square feet) to allow for enlarged exhibition space, additional storage, a ground floor café, and retail space. The central atrium would be renovated to provide additional exhibitions and provide additional classroom and laboratory space. The second floor of the Page Museum would contain two classrooms and a multipurpose space. An outdoor café and bar would be located next to these spaces on the center terrace on the west side of the Page Museum. A sloped green roof would be installed to the north of the Page Museum and would curve to the west. The project would add several sustainability features to the Page Museum. The features include enhanced daylighting, rainwater collection leading to bioswales, a sloped green roof, and rooftop solar photovoltaic panels.

[1] During construction on the LACMA parking garage in 2006, 16 new paleontological deposits were discovered, including an almost-complete skeleton of an adult mammoth. Given the size of the discoveries, 23 large wooden boxes were built around the various deposits, allowing many of the discoveries to remain intact. "Project 23" has now become the short-hand descriptor for the location and activities related to the excavation of deposits within the 23 large wooden boxes that is now occurring in a portion of the La Brea site.

Table 1. Project Components Summary

Project Component	Description
Page Museum Renovations	Renovate existing building in same footprint (approximately 63,200 square feet). Demolish existing maintenance building and service facilities along the northern boundary, directly west of the parking lot. Construct new 2,000-gross-square-foot (gsf) satellite maintenance and support building.
New Museum Building	Construct a new two-story 40,000-gsf museum building northwest of the Page Museum including two new theaters.
Wilshire Gateway	Renovate the existing entrance to the La Brea Tar Pits at Wilshire Boulevard and South Curson Avenue with shaded canopy and new welcome pavilion.
The Lake Pit	Construct a pedestrian bridge and walking path over the Lake Pit. Install a new garden bioswale.
6th Street Gateway	Renovate the existing entrance at the northwest corner of West 6th Street and the entrance to the LACMA service drive with shaded canopy and new welcome pavilion.
Tar Pits (Pits 3, 4, 9, 13, 61, 67, and 91; Project 23)	Renovate the existing facilities at all the tar pits in the northwestern portion of the project site.
Pedestrian Path and Recreation Areas	Reconfigure the existing pedestrian pathways on-site into a continuous 1-kilometer-long paved pedestrian path linking existing features on the project site. Improvements to the Central Green (establish a drivable path for food truck access). Establish a children's play area, picnic areas, and a small dog park west of the 6th Street Gateway.
Circulation and Parking	Expand existing parking lot from 63,000 square feet to 65,000 square feet and relocate approximately 50 to 70 feet to the north. This would require removal and relocation of existing trees on-site. Increase vehicle parking spaces approximately 5 to 15 spaces for a total of 160 to 170 vehicle parking spaces. Addition of new landscaping and vehicle access lanes to the parking lot. Establish new school drop-off/loading area approximately 215 to 230 feet long on South Curson Avenue adjacent to the Wilshire Gateway picnic area.
Landscaping Concept Plan	Establish three distinct landscaping zones encircled by looping pedestrian path. Creation of biofiltration areas for stormwater management. Introduction or relocation of approximately 84 trees from existing locations on-site to new locations on-site.

Figure 3. Proposed site plan.

In addition, the project would demolish the existing maintenance building and service facilities along the northern boundary, directly west of the parking lot. A new 2,000-gross-square-foot (gsf) satellite maintenance and support building would be constructed for additional storage, administration, and research space directly west of the parking lot.

2.2.2 New Museum Building

A new two-story museum building would be located to the northwest of the Page Museum (see Figure 3). The building would be approximately 40,000 gsf and would increase the total museum square footage to 104,000 gsf. The new museum building would include an extended central lobby, exhibit spaces, two theaters, a mechanical equipment room, research and collections rooms, administration spaces, and a loading dock.

The Page Museum and new museum building would be continuously connected on the first floor. The first-floor central lobby would face southwest toward the Central Green and branch off into the Page Museum to the east and the new museum building to the west. An updated retail and café space would be located off the lobby and look out over the Central Green. The Page Museum and the new museum buildings would be disconnected on the second floor, which would rise above the earthen berm. The separated facilities would be accessible through sloped outdoor walkways from the Central Green or interior staircases in the museum. There would be pedestrian entrances leading into the central lobby from the Central Green and from the parking lot. The existing Page Museum entrance would be converted to an educational group and tour entrance, which would be connected to a new school drop-off area on South Curson Avenue.

2.2.3 Entrance Renovation and Other Internal Circulation Improvements

The project would renovate the existing entrance to the La Brea Tar Pits located at Wilshire Boulevard and South Curson Avenue. A large, shaded canopy would stretch down Wilshire Boulevard and curve around to South Curson Avenue to create a new welcome pavilion and shaded entry plaza; this would provide orientation, spaces for gathering and queuing, and restrooms (see Figure 3). A picnic area would also be located under the shaded canopy.

A pedestrian bridge and walking path would be constructed over the Lake Pit. Directly to the east of the Lake Pit, a new garden bioswale would be installed to manage stormwater and would include vegetation related to the relocated mammoths and mastodon sculptures.

A school drop-off area on South Curson Avenue would lead directly to the education museum entrance, enabling the choreography of student tour itineraries that are distinct from general museum visitors and other tour groups.

The project would renovate the existing entrance at the northwest corner of West 6th Street and the entrance to the LACMA parking garage. Similar to the Wilshire Gateway, a shaded canopy and welcome pavilion would provide orientation, legibility, and amenities. As a visible point of arrival from the residential communities to the north, this new entry would welcome visitors to a shaded park space where community park and recreational needs are balanced with the research activities of La Brea. Under the canopy of shade trees, visitors would find diverse destinations, including play areas, picnic areas, seating and interpretation zones at the protected tar seeps, the gentle topography and bioswales along Oil Creek, and the revitalized destinations of the Dorothy Brown Amphitheater, Observation Pit, and Pit 91. Along the south edge of the loop path, connections would allow access to other Hancock Park programs and transportation connections.

3 CONSTRUCTION TIME FRAME AND PHASING

Construction of the project, from mobilization to the site to final completion, is expected to occur between 2024 and 2027, and would last for approximately 4 years. The project would be constructed in five phases: 1) demolition and project site preparation; 2) installation of infrastructure improvements; 3) development of the proposed new museum building and parking lot; 4) landscaping and hydroseeding; and 5) roadway improvements. Blasting is not anticipated for the construction of this project. The estimated construction scheduling for the project is presented in Table 2.

Table 2. Construction Schedule

Phase	Start Date	End Date	Days/Week	Workdays per Phase
Demolition	1/1/2024	10/31/2024	6	262
Site preparation	1/1/2024	10/31/2024	6	262
Grading	11/1/2024	12/31/2024	6	52
Building construction	1/1/2025	5/31/2027	6	755
Paving	6/1/2027	12/31/2027	6	184
Architectural coating	7/1/2026	9/30/2026	6	79

For this analysis, project construction has been divided into six phases based on the types of equipment required and workload: 1) demolition; 2) site preparation; 3) grading; 4) building construction; 5) paving; and 6) architectural coating (see Table 2).

4 ENVIRONMENTAL SETTING

4.1 Noise Fundamentals

This section provides a brief overview of noise fundamentals, noise assessment components, and examples of sound levels from a variety of sources.

4.1.1 Definition of Acoustical Terms

Noise is commonly defined as sound that is undesirable because it interferes with speech communication and hearing, causes sleep disturbance, or is otherwise annoying. The following acoustical terms are used throughout this analysis:

- Ambient sound level is defined as the composite of noise from all sources near and far, i.e., the normal or existing level of environmental noise at a given location.
- Decibel (dB) is the physical unit commonly used to measure sound levels. Technically, a dB is a unit of measurement that describes the amplitude of sound equal to 20 times the base 10 logarithm of the ratio of the reference pressure to the sound of pressure, which is 20 micropascals (μPa).
- Sound measurement is further refined by using a decibel "A-weighted" sound level (dBA) scale that more closely measures how a person perceives different frequencies of sound; the A-weighting reflects the sensitivity of the ear to low or moderate sound levels.
- Equivalent noise level (L_{eq}) is the energy average A-weighted noise level during the measurement period.

- The root-mean-squared maximum noise level (L_{max}) characterizes the maximum noise level as defined by the loudest single noise event over the measurement period.
- Day-Night Sound Level (L_{dn}) is the A-weighted equivalent sound level for a 24-hour period with an additional 10 dB weighting imposed on the equivalent sound levels occurring during nighttime hours (10:00 p.m. to 7:00 a.m.).
- Community Noise Equivalent Level (CNEL) is a measure of the 24-hour average noise level that penalizes noise that occurs during the evening and nighttime hours, when noise is considered more disturbing. To account for this increase in disturbance, 5 A-weighted decibels (dBA) is added to the hourly L_{eq} during the evening hours (7:00 p.m. to 10:00 p.m.) and 10 dBA is added during the nighttime hours (10:00 p.m. to 7:00 a.m.).
- Percentile-Exceeded Sound Level (L_{xx}) describes the sound level exceeded for a given percentage of a specific period.
- Noise-sensitive land use is defined as a location most likely to be adversely affected by excessive noise levels, or as a place where quiet is an essential element of their intended purpose.

4.1.2 Sound Levels of Representative Sounds and Noises

The U.S. Environmental Protection Agency (EPA) has developed an index to assess noise impacts from a variety of sources using residential receptors. Noise levels in a quiet rural area at night are typically between 32 and 35 dBA. Quiet urban nighttime noise levels range from 40 to 50 dBA. Noise levels during the day in a noisy urban area are frequently as high as 70 to 80 dBA. Noise levels above 110 dBA become intolerable; levels higher than 80 dBA over continuous periods can result in hearing loss. Levels above 70 dBA tend to be associated with task interference. Levels between 50 and 55 dBA are associated with raised voices in a normal conversation (EPA 1974).

Table 3 provides criteria that have been used to estimate an individual's perception to increases in sound. In general, an average person perceives an increase of 3 dBA or less as barely perceptible. An increase of 10 dBA is perceived as a doubling of the sound.

Table 3. Average Human Ability to Perceive Changes in Sound Levels

Increase in Sound Level (dBA)	Human Perception of Sound
2–3	Barely perceptible
5	Readily noticeable
10	Doubling of the sound
20	Dramatic change

Source: Bolt, Beranek and Newman, Inc. (1973)

Table 4 presents sound levels for some common noise sources and the human response to those decibel levels.

Table 4. Sound Levels of Representative Sounds and Noises

Common Outdoor Activities	Noise Level (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, 100 feet	**— 70 —**	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	**— 60 —**	
		Large business office
Quiet urban daytime	**— 50 —**	Dishwasher next room
Quiet urban nighttime	**— 40 —**	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	**— 0 —**	Lowest threshold of human hearing

Source: California Department of Transportation (2022:112)

4.1.3 Noise Assessment Components

A noise assessment is based on the following components: a sound-generating source, a medium through which the source transmits and the pathways taken by these sounds, and an evaluation of the proximity to noise receptors. Soundscapes are affected by the following factors:

- Source. The sources of sound are any generators of small back-and-forth motions (i.e., motions that transfer their motional energy to the transmission path where it is propagated). The acoustic characteristics of the sources are very important. Sources must generate sound of sufficient strength, approximate pitch, and duration so that the sound may be perceived and can cause adverse effects, compared with the natural ambient sounds.
- "Transmission path" or medium. The "transmission path" or medium for sound or noise is most often the atmosphere (i.e., air). For the noise to be transmitted, the transmission path must support the free propagation of the small vibratory motions that make up the sound. Atmospheric conditions (e.g., wind speed and direction, temperature, humidity, precipitation) influence the attenuation of sound. Barriers and/or discontinuities (e.g., existing structures, topography, foliage, ground cover, etc.) that attenuate the flow of sound may compromise the path. For example, sound will travel very well across reflective surfaces such as water and pavement but can attenuate across rough surfaces (e.g., grass, loose soil).
- Proximity to receptors. A receptor is usually defined as a location where a state of quietness is a basis for use or where excessive noise interferes with the normal use of the location. Typical receptors include residential areas, monuments, schools, hospitals, churches, and libraries.

4.2 Ground-borne Vibration Fundamentals

This chapter describes basic concepts related to ground-borne vibration. Ground-borne vibration is a small, rapidly fluctuating motion transmitted through the ground. When seismic waves are perceptible,

when they can be felt, they are called "ground vibrations." Seismic waves are divided into two classes: body waves and surface waves.

1. Body waves travel across the mass of the rock, penetrating down into the interior of the rock mass. There are two forms of body waves: compressional waves and shear waves.
   The compressional wave (P-wave) is a push-pull type wave that produces alternating compression and dilatation in the direction of wave travel. The shear wave (S-wave) is produced when the medium particles oscillate perpendicular to the propagation direction.
2. Surface waves (L-waves) travel over the surface of rock mass but do not travel through it. Surface waves are generated by body waves that are constrained by physical and geometrical conditions from traveling into the rock mass. Surface waves are the large energy carriers and account for the largest ground motions. There are two fundamental types of surface waves: the Raleigh, and the Love waves (Q-wave). Raleigh and Love waves represent the energy measured by a seismograph and are the main component of vibration when examining ground vibration from blasting activities.

The ground vibration from surface waves is measured as the velocity of motion, or how many inches per second (in/sec) the ground is moving. The motion of the ground particles (vibration) happens in three dimensions: radial, transverse, and vertical. During vibration, each particle has a velocity, and the maximum velocity is referred to as the peak particle velocity (PPV). The resulting vector of all three components (i.e., radial, transverse, and vertical) combined is referred to as peak vector sum (PVS).

The industry standard is to use the readings of the PPV as the metric to measure the intensity of the ground vibration. In reporting, the maximum measurement of any of the three components is used rather than the resulting PVS.

4.2.1 Ground Vibration Terms

Ground vibration is described using the following terms:

- Acceleration—The rate at which particle velocity changes.
- Crest factor—The ratio of peak particle velocity to maximum root mean square amplitude in an oscillating signal.
- Displacement—The farthest distance that the ground moves before returning to its original position.
- Frequency—The number of oscillations per second that a particle makes when under the influence of seismic waves.
- Hertz (Hz)—The unit of acoustic or vibration frequency representing cycles per second.
- Peak particle velocity (PPV)—The greatest particle velocity associated with an event.
- Peak vector sum (PVS)—The square root of the sum of the squares of the individual PPV values in all three vector directions.
- Particle velocity—The velocity at which the ground moves.
- Propagation velocity—The speed at which a seismic wave travels away from the blast.
- Root Mean Square (RMS)—The square root of the mean-square value of an oscillating waveform, where the mean-square value is obtained by squaring the value of amplitudes at each instant of time and then averaging these values over the sample time.

- Vibration Velocity Level (LV)—Ten times the common logarithm of the ratio of the square of the amplitude of the RMS vibration velocity to the square of the amplitude of the reference RMS vibration velocity.

4.2.2 Ground Vibration and Structure Damage

Ground vibrations can produce permanent changes in the relative positions of "particles" that constitute structures. Because these permanent changes are unwanted, they are colloquially referred to as "damage". The larger the vibration (i.e., the higher the ground movement speed), the greater is the potential for these permanent shifts in particle positions in structures.

Table 5 summarizes the effects of peak particle velocities on structures and materials that have been documented by various researchers and organizations.

Table 5. Effect of Vibration on Materials and Structures

PPV (in/sec)	Application	Effect	Reference
0.03	Residential structure	Equivalent to walking on floor	Stagg et al. (1980)
0.3	Residential structure	Equivalent to jumping on floor	Stagg et al. (1980)
0.1–0.5	Residential structure	Equates to normal daily family activity	Stagg et al. (1980)
0.5	Mercury switch	Trips switch	Bauer and Calder (1977)
0.5	Residential structure	Equivalent to door slam	Stagg et al. (1980)
0.9	Residential structure	Equivalent to nail driving	Stagg et al. (1980)
<2.0	Residential structure	No damage	Edwards and Northwood (1960)
<2.0	Residential structure	No damage	Nichols et al. (1971)
2	Plaster	Safe level of vibration	E. I. du Pont de Nemours & Co. (1977)
2	Residential structure	Plaster can start to crack	Bauer and Calder (1977)
2.8	Residential structure	No damage	Langefors et al. (1958)
1.2–3.0	Residential structure	Equates to daily environmental changes	Stagg et al. (1980)
3	Plaster	Threshold of cosmetic cracking	Northwood et al. (1963)
2.8–3.3	Plaster	Threshold of damage (from close-in blasts)	E. I. du Pont de Nemours & Co. (1977)
2.0–4.0	Residential structure	Caution range	Edwards and Northwood (1960)
2.0–4.0	Residential structure	Plaster cracking (cosmetic)	Nichols et al. (1971)
>4.0	Residential structure	Probable damage	Edwards and Northwood (1960)
4.3	Residential structure	Fine cracks in plaster	Langefors et al. (1948)
4.5	Plaster	Minor cracking	Northwood et al. (1963)
5.4	Plaster	50% probability of minor damage	E. I. du Pont de Nemours & Co. (1977)
5.44	Water wells	No change in well performance	Robertson et al. (1980)
6.3	Residential structure	Plaster and masonry walls crack	Langefors et al. (1948)
<6.9	Residential structure	No damage observed	Wiss and Nichols (1974)

PPV (in/sec)	Application	Effect	Reference
4.0–7.0	Residential structure	Minor damage possible	Nichols et al. (1971)
>7.0	Residential structure	Major damage possible	Nichols et al. (1971)
7.0–8.0	Cased water wells	No adverse effect on well	Rose et al. (1991)
7.6	Plaster	50% probability of major damage	E. I. du Pont de Nemours & Co. (1977)
8	Concrete blocks	Cracking in blocks	Bauer and Calder (1977)
8	Plaster	Major cracking	Northwood et al. (1963)
9.1	Residential structure	Serious cracking	Langefors et al. (1958)
<10	Rock	No fracturing of intact rock	Bauer and Calder (1978)
>12	Rock	Rock falls in underground tunnels	Langefors et al. (1958)
12	Rock	Rock falls in unlined tunnels	E. I. du Pont de Nemours & Co. (1977)
15	Cased drill holes	Horizontal offset	Bauer and Calder (1977)
24	Rock	Rock fracturing	Langefors et al. (1958)
10–25	Rock	Minor tensile slabbing	Bauer and Calder (1978)
25	Rock	Damage can occur in rock masses	Oriard (1970)
25	Explosive near buried pipe	No damage	Siskind and Stagg (1993)
40	Mechanical equipment	Shafts misaligned	Bauer and Calder (1977)
100	Explosives near concrete	No damage	Oriard and Coulson (1980)
25–100	Rock	Tensile and some radial cracking	Bauer and Calder (1978)
100	Explosives inside concrete	Spalling of fresh grout	Tart et al. (1980)
>100	Rock	Complete breakup of rock masses	Bauer and Calder (1978)
50–150	Explosive near buried pipe	No damage	Oriard (1994)
200	Explosives inside concrete	Spalling of loose/weathered concrete skin	Tart et al. (1980)
375	Explosives inside concrete	Radial cracks develop in concrete	Tart et al. (1980)
600	Explosives inside concrete	Mass blowout of concrete	Tart et al. (1980)

Source: Modified from California Department of Transportation (2020:Table 22),

While structural damage associated with ground vibration can occur, noticeable vibration damage is often seen as cracks in drywall or plaster and exterior surfaces such as grout and stucco. This may, or may not, be a sign of structural damage. Since such cosmetic damage can also be caused by settling, temperature changes, and normal aging; overall, a few hairline cracks found in a house does not necessarily indicate a vibrational cause.

4.2.3 Ground Vibration and Human Perception

In addition to concerns about structural damage, under specific conditions, humans can be startled or annoyed by ground vibration. Human response to vibration is hard to evaluate due to differences in individual perception. Humans can detect lower levels of ground vibration than those levels discussed in Section 4.2.2 that could adversely impact structures. The human body can distinctively perceive ground vibration as low as 0.1 inch per second, with some people being able to perceive even lower levels.

The reason the public may perceive ground vibration as annoying is because it is an A-Cultural Vibration—that is, something that occurs that people are not used to experiencing. For example, vibration produced by a blast is unique and one does not expect it; therefore, an individual may report on the vibration to a much larger extent (Konya 2019). Additionally, the rattling of objects in the immediate surroundings influences the occupants to look for cracks in their residences. Dowding (1996) sees this as human sensitivity being triggered by vibrations that give rise to their inquiring minds.

Table 6 indicates the average human response to vibration that may be anticipated when the person is at rest, situated in a quiet surrounding.

Table 6. Human Response to Ground Vibration

Average Human Response	PPV (in/sec)
Barely to distinctly perceptible	0.020–0.10
Distinctly to strongly perceptible	0.10–0.50
Strongly perceptible to mildly unpleasant	0.50–1.00
Mildly to distinctly unpleasant	1.00–2.00
Distinctly unpleasant to intolerable	2.00–10.00

Source: California Department of Transportation (2020)

Section 12.08.350 of the Los Angeles County Noise Control Ordinance defines "vibration" as the minimum ground or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observations of moving objects, and assumes a human perception threshold of 0.01 in/sec over the range of 1 to 100 hertz.

4.2.4 Vibration Assessment Components

Vibration energy extends out as it travels through the ground, causing the vibration level to reduce with respect to the distance from the source. High-frequency vibration decreases much more rapidly than low frequencies, so that low frequencies tend to dominate the spectrum at large distances from the source. The propagation of ground-borne vibration is not simple to model due to geological differences in the medium (ground). Geological factors that may influence the propagation of ground-borne vibration include the following:

- Soil conditions. The type of soil has a strong influence on the propagation of ground-borne vibration. Hard, dense, and compacted soil, stiff clay soil, and hard rock transfer vibration more efficiently than loose, soft soils, sand, or gravel.
- Depth to bedrock. Shallow depth to bedrock provides more efficient propagation of ground-borne vibration. Shallow bedrock concentrates the vibration energy near the surface, reflecting vibration waves back toward the surface that would otherwise continue to propagate farther down into the earth.
- Soil strata. Discontinuities in the soil layering can produce diffractions or channeling effects that impact the propagation of vibration over long distances.
- Frost conditions. Seismic waves typically propagate more efficiently in frozen soils than in unfrozen soils.
- Water conditions. The amount of moisture in the soil has an impact on vibration propagation. The depth of the water table in the path of the propagation also has substantial effects on ground-borne vibration levels.

Specific conditions at the source and receptor locations can also affect the vibration levels. For instance, how the source is connected to the ground (e.g., direct contact or via a structure) or when the source is underground versus on the surface will impact the amount of energy transmitted into the ground. At the receptor, vibration levels can be affected by variables such as the building construction and the foundation type.

4.3 Existing Conditions

4.4 Existing Land Use and Site Conditions

The project site is in an urbanized area surrounded by a variety of commercial uses, museums, and residential buildings. The project site is bounded by the Park La Brea Pool and multi-family residential uses to the north across West 6th Street, commercial and residential uses to the east across South Curson Avenue, the Craft Contemporary Museum and other museum and commercial uses south across Wilshire Boulevard, and museum and commercial uses to the west. The predominant noise sources in the vicinity of the project site are vehicular traffic, commercial activities, park visitors, landscaping equipment, parking lot activities, and construction noise from projects that are being developed in the area.

Noise-sensitive land uses are commonly defined as locations most likely to be adversely affected by excessive noise levels. As defined in the *Noise Element of the City of Los Angeles General Plan* (City of Los Angeles 1999), noise-sensitive land uses include single- and multi-family dwellings, long-term care facilities, motels, hotels, transient lodgings, and other residential uses; places of worship; hospitals; libraries; schools; nature and wildlife preserves; parks; auditoriums; concert halls; and outdoor theaters (City of Los Angeles 2006).

As presented in Section 4.2, the potential ground-borne vibration can be divided into building damage and potential human annoyance. Because building damage would be considered a permanent negative effect at any building, regardless of land use, all buildings are considered sensitive to this type of impact. Human annoyance from ground-borne vibration is only considered inside occupied buildings and not at outside areas such as parks or playgrounds. Therefore, buildings that would be considered sensitive to human annoyance caused by vibration are generally the same as those that would be sensitive to noise.

Based on the review of the land uses in the project area, four off-site residential receptors (referenced hereafter as monitoring locations ST2, ST3, ST5, and ST6) were selected to represent noise-sensitive uses in the project area. Additionally, four commercial receptors (referenced hereafter as monitoring locations ST7, ST8, ST9, and ST10) were selected to evaluate potential noise and vibration impacts adjacent to the project site (Figure 4).

4.5 Existing Sound Conditions

4.5.1 Measurement Locations

To determine the baseline or ambient sound levels experienced near the project area and at the closest noise-sensitive uses, long-term and short-term sound monitoring was conducted from April 7 to April 9, 2022, to document the acoustic environment in the area surrounding the proposed project. Figure 4 shows the noise measurement locations and Table 7 describes the selected noise monitoring sites.

Figure 4. Noise measurement locations.

Table 7. Noise Monitoring Locations

Monitoring Location	Description	Approximate Distance from Measuring Location to Nearest Project Site Boundary*	Nearest Noise Land Use(s)
LT1	Northeast corner of the Lake Pit.	–	–
LT2	Northeast corner of Pit 13.	–	–
ST2	Multi-family residence on the north side of West 6th Street, northwest of the project site.	160 feet	Multi-Family Residential
ST3	Multi-family residence on the north side of West 6th Street, northwest of the project site.	72 feet	Multi-Family Residential
ST5	Multi-family residence on the north side of West 6th Street, northeast of the project site.	90 feet	Multi-Family Residential
ST6	Multi-family residence on the east side of Curson Avenue, east of the project site.	59 feet	Multi-Family Residential
ST7	Mixed-use commercial building on the east side of Curson Avenue, east of the project site.	61 feet	Commercial
ST8	Office building on the south side of Wilshire Boulevard, southeast of the project site.	124 feet	Commercial
ST9	Commercial building on the south side of Wilshire Boulevard, south of the project site.	114 feet	Commercial
ST10	Commercial building on the south side of Wilshire Boulevard, southwest of the project site.	669 feet	Commercial

* Distances are estimated using 2021 map data from Google Earth (2022)

Two long-term and eight short-term noise monitoring locations were selected to provide the existing ambient noise levels near and at the project's site. The specific placement of the sound level meters was mainly determined by environmental and logistical constraints, and the location of the closest noise-sensitive land uses. The long-term noise monitors were placed at the southeast and northwest corners of the proposed project site. Short-term monitors were placed at the neighboring noise-sensitive land uses and commercial locations to provide good coverage of the area surrounding the project site.

4.5.2 Instrument Description

Noise measurements were collected using three Larson Davis Precision Integrating Sound Level Meter Model 831C units, meeting the requirements of the American National Standards Institute (ANSI) (ANSI 2013), three PCB PRM831 preamplifiers, and three PCB 377B02 free-field microphones (Table 8).

Microphones were fitted with an environmental windscreen and bird spikes and set on a tripod at a height of 5 feet above ground, and located as far from the influence of vertical reflective sources as possible. All cables were secured to prevent any sounds due to wiring hitting other objects. All clocks associated with the sound measurement were synchronized using the Larson Davis G4 LD Utility software.

Table 8. Instrumentation Used

Monitoring Location	Sound Level Meter	Preamplifier	1/2-inch Free-Field Microphone
LT1	Larson Davis 831C (S/N 0011655)	PRM831 (S/N 76995)	377B02 (S/N 173681)
LT2	Larson Davis 831C (S/N 0011585)	PRM831 (S/N 46400)	377B02 (S/N 108355)

ST2, ST3, ST5, ST6, ST7, ST8, ST9, ST10	Larson Davis 831C (S/N 0011655)	PRM831 (S/N 76995)	377B02 (S/N 173681)

4.5.3 Calibration Checks

The sound level meters was calibrated at the beginning and end of each measurement period using a Larson Davis Model CAL200 Precision Acoustic Calibrator. The Larson Davis CAL200 emits a 1 kilohertz (kHz) tone at 114 dB against which the response can be checked. The calibrator has been designed for both field and laboratory use and the accuracy has been calibrated to a reference traceable to the National Institute of Standards and Technology.

The LD 831C sound level meters showed a response of less than the normal error of 0.50 dB. The results of the calibrations are shown in Table 9.

Table 9. Pre- and Post-Instrument Response Checks

Monitoring Location	Pre-Test	Post-Test	Deviation (dBA)*
LT1	4/7/22 8:52 a.m.	4/9/22 8:09 a.m.	−0.01
LT2	4/7/22 9:20 a.m.	4/9/22 8:36 a.m.	−0.07
ST2	4/9/22 9:28 a.m.	4/9/22 9:44 a.m.	0.04
ST3	4/9/22 9:50 a.m.	4/9/22 10:07 a.m.	0.01
ST5	4/7/22 10:24 a.m.	4/7/22 10:42 a.m.	0.05
ST6	4/7/22 10:47 a.m.	4/7/22 11:04 a.m.	0.03
ST7	4/7/22 11:09 a.m.	4/7/22 11:25 a.m.	−0.03
ST8	4/7/22 11:31 a.m.	4/7/22 11:48 a.m.	−0.04
ST9	4/7/22 11:56 a.m.	4/7/22 12:16 p.m.	0.17
ST10	4/7/22 12:30 p.m.	4/7/22 1:02 p.m.	−0.34

* Calibration deviation indicates the difference between the values measured by the instrument and the tone emitted by the acoustic calibrator.

4.5.4 Meteorological Data

Meteorological data were not measured at the monitoring sites during the measurement period. Instead, noise data collected during the survey were validated against weather data from the Enrique Noguera Educational Garden Station (KCALOSAN1004), located approximately 2.3 miles northeast of the project site. Hourly weather information is presented in Appendix A. A summary of the survey weather conditions is provided in Table 10.

Table 10. Weather Conditions for April 7 through April 9, 2022

Weather Station	Start	End	Wind Speed (mph)		Temperature (°F)		Humidity (% relative humidity)	
			Range	Average	Range	Average	Range	Average
Enrique Noguera Educational Garden (KCALOSAN1004)	4/7/2022 00:00	4/9/2022 23:59	0.0–5.1	0.7	61.0–96.5	77.5	8–77	32

Source: Weather Underground (2022)

The American Society for Testing and Materials (ASTM) *Standard Guide for Measurement of Outdoor A-Weighted Noise Levels* (ASTM E1014-12; 2012) specifies that data should not be used when steady wind speeds exceed 20 kilometers per hour (12.4 miles per hour [mph]). Because wind speeds above 12.4 mph were not identified, no hourly data points were removed from any of the noise data sets.

4.5.5 Readings

Long-term monitoring was conducted from April 7 to April 9, 2022. Sound meter LD 831C – 0011655 was placed at the monitoring location LT1 from 8:58 a.m. (Pacific Daylight Time [PDT]) on April 7 to 8:09 a.m. (PDT) on April 9. Data were collected for approximately 47 hours; sound levels were recorded over each 1-minute and 1-hour interval. Sound meter LD 831C – 0011585 was placed at the monitoring location LT2 from 9:22 a.m. (PDT) on April 7 to 8:35 a.m. (PDT) on April 9. Data were collected for approximately 47 hours; sound levels were recorded over each 1-minute and 1-hour intervals.

Short-term monitoring was conducted at eight monitoring locations. Start and stop times for the eight short-term monitoring sites are presented in Table 11. Short-term sound levels were recorded for a single 15-minute interval.

The sound level meters were programmed to sample and store A-weighted sound level data including L_{eq}, percentile levels, and community sound parameters. The following gives a brief description of the methodology used for the sound data collection.

- A-weighted sound level was selected.
- Sound meter was set on "slow" response.
- During noise measurements any dominant background noise source was noted.
- Weather conditions were observed and documented.

Field data sheets were completed during each visit and are provided in Appendix A of this report.

Observed sources of background noise that contributed to the existing sound level at the monitoring locations included vehicular traffic, commercial activities, park visitors, landscaping equipment, parking lot activities, and construction noise. No data points were excluded from the results interference as all the major noise-contributing sources were determined to be representative of the ambient soundscape.

Ambient noise levels for the long-term monitoring sites are represented by the equivalent noise level (L_{eq}) due to the duration of the monitoring period, as it provides a measure of the aggregate sound at a location. L_{eq} is represents the level of continuous sound over a given period that would deliver the same amount of energy as the actual, varying sound exposure, therefore making noise from sporadic anthropogenic noises, wildlife, and wind gusts part of the overall ambient noise level.

Evening noise levels at the short-term monitoring sites were assumed to be equal to the measured daytime noise levels. Nighttime noise levels were assumed to be 10 dBA lower than the measured daytime noise.

4.5.6 Results

Data collection began on April 7, 2022, and continued through April 9, 2022. Table 11 summarizes the measured A-weighted L_{eq}, L_{dn}, and CNEL (calculated from the measured L_{eq}) for each of the monitoring locations.

Table 11. Measured Existing Ambient Noise Levels

Monitoring Location	Start	Stop	Measured Noise Levels (dBA)				Estimated Noise Levels (dBA)	
			Daytime Hours (7:00 a.m.–7:00 p.m.)	Evening Hours (7:00 p.m.–10:00 p.m.)	Nighttime Hours (10:00 p.m.–7:00 a.m.)	L_{90} (24-hour)	L_{dn}* (24-hour)	CNEL* (24-hour)
LT1	2022-04-07 08:58:16	2022-04-09 08:09:16	58.9	54.2	53.0	46.6	60.6	60.9
LT2	2022-04-07 09:22:07	2022-04-09 08:35:39	56.6	54.2	51.7	46.0	59.1	59.5
ST2	2022-04-09 09:28:56	2022-04-09 09:43:57	67.5	-	-	52.1	66.7	68.1
ST3	2022-04-09 09:51:40	2022-04-09 10:06:42	65.5	-	-	51.8	65.3	66.4
ST5	2022-04-07 10:26:12	2022-04-07 10:41:13	74.9	-	-	56.1	73.1	75.1
ST6	2022-04-07 10:48:38	2022-04-07 11:03:41	62.8	-	-	51.5	63.8	64.4
ST7	2022-04-07 11:09:19	2022-04-07 11:24:22	64.8	-	-	54.6	64.9	65.9
ST8	2022-04-07 11:32:22	2022-04-07 11:47:27	69.8	-	-	57.1	68.5	70.2
ST9	2022-04-07 11:58:31	2022-04-07 12:13:33	74.6	-	-	63.7	72.8	74.8
ST10	2022-04-07 12:31:39	2022-04-07 12:46:47	67.1	-	-	54.7	66.4	67.8

Note: L_{90} is the sound level exceeded 90% of the time of the measurement period. Ldn is the A-weighted equivalent sound level for a 24-hour period with an additional 10 dB weighting imposed on the equivalent sound levels occurring during nighttime hours (10:00 p.m. to 7:00 a.m.).

* Estimated from measured daytime noise levels and estimated nighttime levels based on the presented nighttime hours in the Presumed Ambient Noise Levels, City of Los Angeles Municipal Code, Section 111.03.

As shown in Table 11, the daytime noise levels in project vicinity ranged between 62.8 and 74.9 dBA L_{eq}. The two long-term noise measurements (LT1 and LT2) indicate that the average hourly noise levels during daytime hours ranged between 56.6 and 58.9 dBA L_{eq} and between 59.5 and 60.9 dBA CNEL at the project site.

4.5.7 Existing Traffic Noise

In addition to the noise measurements, the existing traffic noise on local roadways in the surrounding areas was calculated to quantify the 24-hour CNEL noise levels using data provided by the draft transportation assessment prepared for the project (Traffic Study; Kittelson & Associates, Inc. 2022). Thirteen roadway segments were selected to represent the existing noise conditions for the analysis. Traffic noise levels were calculated using a proprietary noise model (i.e., SoundPlan Essential v5.1) based on the Federal Highway Administration (FHWA) Traffic Noise Model Version 2.5 (FHWA 2004). The inputs used in the traffic noise modeling included hourly traffic volumes, assumed traffic mix and daily distribution (the percentage of automobiles versus medium trucks and heavy trucks during each hour of the day), and traffic speeds based on the posted speed limits.

The Traffic Study did not directly analyze Average Daily Traffic (ADT) on the road segments in the project site vicinity. The Traffic Study provides an estimate of ADT volumes based on the weekday morning (7:00 a.m.–9:00 a.m.), midday (12:00 p.m.–2:00 p.m.), and afternoon (4:00 p.m.–6:00 p.m.) peak

periods' peak hourly intersection volumes for existing traffic. The Traffic Noise Model prediction model calculated an hourly L_{eq} level for each road segment based on the peak morning, midday, and afternoon intersection volumes presented in the Traffic Study for existing traffic and the lateral distance between the road segments and the receptors. Receptors were placed at the closest building façade along the road segment. The 24-hour CNEL levels were then estimated from the estimated L_{eq} values assuming 80% of the total daily traffic occurs during daytime hours (7:00 a.m.–7:00 p.m.), 10% during evening hours (7:00 p.m.–10:00 p.m.), and 10% during nighttime hours (10:00 p.m.–7:00 a.m.). Vehicle mix/distribution information used in the noise calculations is shown in Table 12. Detailed calculation worksheets are included in Appendix B.

Table 12. Vehicle Mix for Traffic Noise Model

Vehicle Type	Daytime Hours (7:00 a.m.–7:00 p.m.)	Evening Hours (7:00 p.m.–10:00 p.m.)	Nighttime Hours (10:00 p.m.–7:00 a.m.)	Total Percentage of ADT per Vehicle Type
Automobile	78.4%	9.8%	9.8%	98%
Medium truck	0.0%	0.0%	0.0%	0%
Heavy truck	1.6%	0.2%	0.2%	2%
Total	**80.0%**	**10.0%**	**10.0%**	**100%**

Table 13 presents the estimated traffic noise levels for the analyzed roadway segments based on existing traffic volumes for both a weekday and weekend. The estimated existing CNEL due to roadway traffic ranges from 62.6 dBA to 71.7 dBA for weekdays, and between 60.8 dBA and 69.8 dBA during weekends (see Table 13).

Table 13. Existing Roadway Traffic Noise Levels

Roadway Segment		Adjacent Land Use	Calculated Traffic Noise Levels, CNEL*		Noise-Sensitive Land Uses?	Existing Noise Exposure Compatibility Category†
			Weekday (dBA)	Weekend (dBA)		
6th Street	Between Fairfax Avenue and Ogden Drive	Residential	71.3	69.8	Yes	Normally unacceptable
	Between Ogden Drive and Curson Avenue	Residential	71.7	67.7	Yes	Normally unacceptable
	East of Curson Avenue	Residential	71.0	67.7	Yes	Normally unacceptable
Ogden Drive	North of 6th Street	Residential	62.6	60.8	Yes	Conditionally acceptable
	South of Wilshire Boulevard	Commercial	62.9	60.8	No	Normally acceptable
Spaulding Avenue	South of Wilshire Boulevard	Commercial	64.9	63.2	No	Normally acceptable
Curson Avenue	North of 6th Street	Residential	67.3	64.8	Yes	Conditionally acceptable
	Between 6th Street and Wilshire Boulevard	Residential	68.1	67.6	Yes	Conditionally acceptable
	South of Wilshire Boulevard	Residential	71.0	69.1	Yes	Normally unacceptable

Roadway Segment		Adjacent Land Use	Calculated Traffic Noise Levels, CNEL*		Noise-Sensitive Land Uses?	Existing Noise Exposure Compatibility Category†
			Weekday (dBA)	Weekend (dBA)		
Wilshire Boulevard	Between Fairfax Avenue and Ogden Drive	Museum	68.3	66	No	Normally acceptable
	Between Ogden Drive and Spaulding Avenue	Commercial	67.2	65.1	No	Normally acceptable
	Between Spaulding Avenue and Curson Avenue	Museum	69.4	67.0	No	Normally acceptable
	East of Curson Avenue	Commercial	67.8	65.8	No	Normally acceptable

* Detailed calculation worksheets are included in Appendix B.

† Noise compatibility is based on the most stringent land use and the higher of the calculated CNEL during weekday and weekend days.

4.6 Existing Ground-Borne Vibration Conditions

The primary ground-borne vibration source at urban settings is vehicular traffic. It is unusual for vibration from traffic sources to be perceptible, as trucks and buses typically generate vibration velocity levels of approximately 63 vibration velocity decibels (VdB) at 50 feet (Federal Transit Administration [FTA] 2018). Normally, 75 VdB is defined as the dividing line between barely perceptible and distinctly perceptible (FTA 2018). Therefore, it is expected that the existing ground-borne vibration levels at the project vicinity would be below the perceptible level.

5 REGULATORY SETTING

Federal, state, and local agencies have set noise and ground-borne vibration regulations and policies to protect the health and welfare of the public, as described below.

5.1 Federal

There are no federal noise or ground-borne vibration standards or regulations that directly regulate environmental noise related to the construction or operation of the proposed project.

5.2 State

The State of California has not adopted statewide regulations or standards for noise. However, the *State of California General Plan Guidelines*, published and updated by the Governor's Office of Planning and Research (OPR), provides standards and the acceptable noise categories for different land uses (OPR 2017). Figure 5 provides the exterior noise standards associated with the different land uses evaluated by the State.

California also requires each local government entity to perform noise studies and implement a noise element as part of its general plan. The purpose of the noise element is to limit the exposure of the community to excessive noise levels; the noise element must be used to guide decisions concerning land use.

There are no state ground-borne vibration standards that directly apply to the project.

5.3 County of Los Angeles

5.3.1 County of Los Angeles Noise Control Ordinance

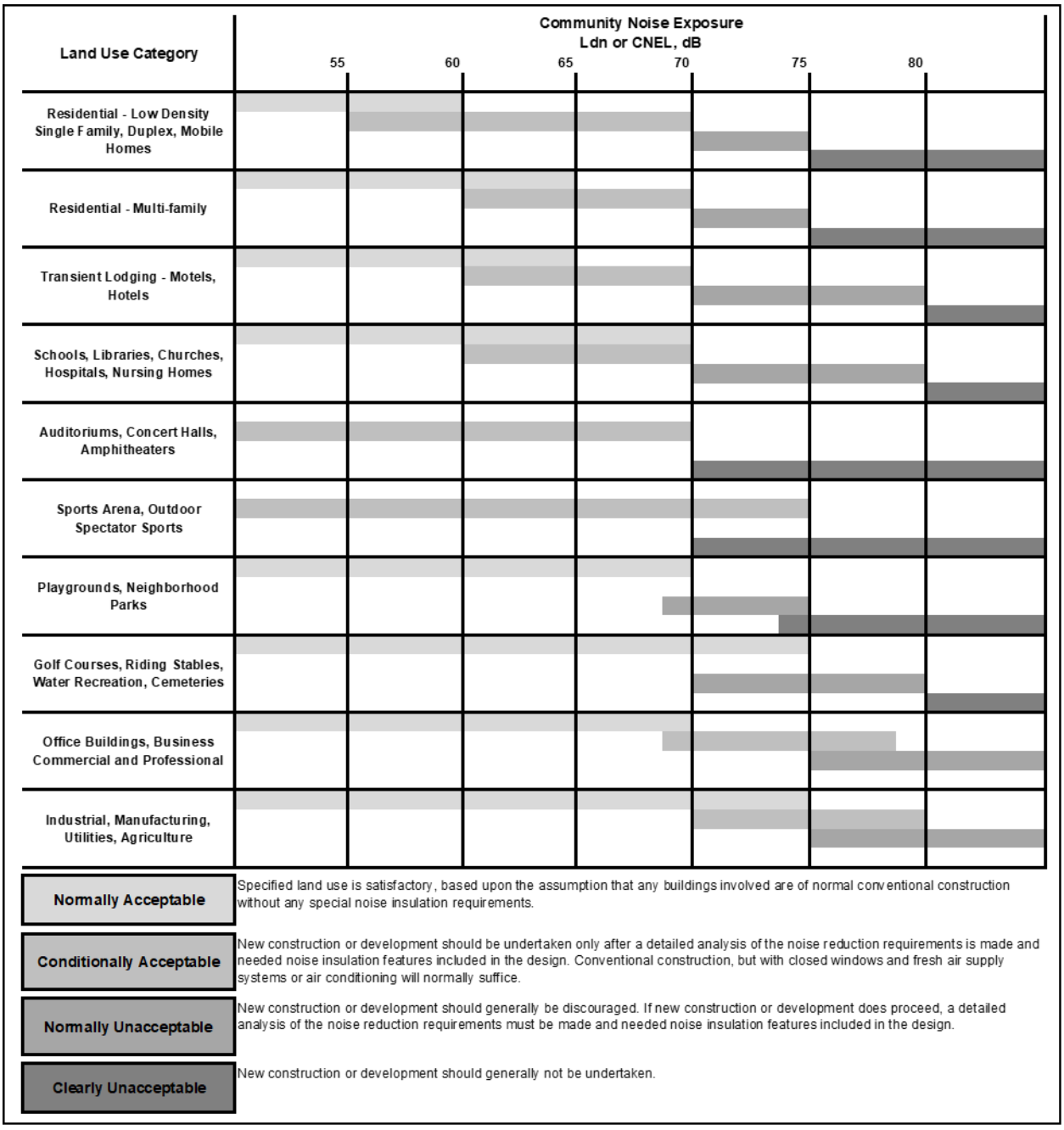
NOISE

The County of Los Angeles Noise Control Ordinance (Section 12.08 of the Los Angeles County Code [County Code]) identifies noise standards for exterior noise sources (Table 14). Regarding maximum exterior noise levels, County Code Section 12.08.390 states that exterior operational noise levels caused by fixed noise sources shall not exceed the levels listed in Table 14, or the existing ambient noise level, whichever is greater (measured in dB).

Table 14. County of Los Angeles Exterior Operational Noise Standards

Noise Zone	Designated Noise Zone Land Use (Receptor Property)	Time Interval	Exterior Noise Level (dB)
I	Noise-sensitive area	Anytime	45
II	Residential properties	10:00 p.m. to 7:00 a.m. (nighttime)	45
		7:00 a.m. to 10:00 p.m. (daytime)	50
III	Commercial properties	10:00 p.m. to 7:00 a.m. (nighttime)	55
		7:00 a.m. to 10:00 p.m. (daytime)	60
IV	Industrial properties	Anytime	70

Source: Los Angeles County Code 12.08.390 - Exterior noise standards.



Source: OPR (2017:Appendix D, Figure 2)

Figure 5. Land use compatibility for exterior community noise exposure.

Section 12.08.390 of the County Code also states that no person shall operate or cause to be operated, any source of sound at any location within the unincorporated county, or allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person which causes the noise level, when measured on any other property either incorporated or unincorporated, to exceed any of the following exterior noise standards:

> **Standard No. 1** shall be the exterior noise level which may not be exceeded for a cumulative period of more than 30 minutes in any hour. Standard No. 1 shall be the applicable noise level; or, if the ambient noise level exceeded for 50% of the time of the measurement duration (L_{50}) exceeds the foregoing level, then the ambient L_{50} becomes the exterior noise level for Standard No. 1.
>
> **Standard No. 2** shall be the exterior noise level which may not be exceeded for a cumulative period of more than 15 minutes in any hour. Standard No. 2 shall be the applicable noise level plus 5 dB; or, if the ambient noise level exceeded for 25% of the time of the measurement duration (L_{25}) exceeds the foregoing level, then the ambient L_{25} becomes the exterior noise level for Standard No. 2.
>
> **Standard No. 3** shall be the exterior noise level which may not be exceeded for a cumulative period of more than 5 minutes in any hour. Standard No. 3 shall be the applicable noise level plus 20 dB; or, if the ambient noise level exceeded for 8.3% of the time of the measurement duration ($L_{8.3}$) exceeds the foregoing level, then the ambient $L_{8.3}$ becomes the exterior noise level for Standard No. 3.
>
> **Standard No. 4** shall be the exterior noise level which may not be exceeded for a cumulative period of more than 1 minute in any hour. Standard No. 4 shall be the applicable noise level plus 15 dB; or, if the ambient noise level exceeded for 1.7% of the time of the measurement duration ($L_{1.7}$) exceeds the foregoing level, then the ambient $L_{1.7}$ becomes the exterior noise level for Standard No. 4.
>
> **Standard No. 5** shall be the exterior noise level which may not be exceeded for any period of time. Standard No. 5 shall be the applicable noise level plus 20 dB; or, if the highest ambient noise level that occurred at the site (L_0) exceeds the foregoing level, then the ambient L_0 becomes the exterior noise level for Standard No. 5.

The County Noise Control Ordinance also identifies specific restrictions regarding construction noise. Construction noise limits are included in Chapter 12.08.440, Noise Control, of the Los Angeles County Code of Ordinances. Pursuant to the County Noise Control Ordinance, the operation of equipment used in construction, repair, alteration, drilling, or demolition work is prohibited between the hours of 7:00 p.m. and 7:00 a.m., Monday through Friday; before 8:00 a.m. or after 6:00 p.m. on Saturday; and anytime on Sundays or legal holidays if such noise would create a noise disturbance across a residential or commercial real-property line. Table 15 presents the maximum noise levels at the affected buildings allowed by the County Noise Control Ordinance.

Table 15. County of Los Angeles Construction Noise Limits

Time	Single-Family Residential	Multi-Family Residential	Semi-Residential/ Commercial
At Residential Structures			
Mobile Equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation (less than 10 days) of mobile equipment:			
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, 8:00 p.m. to 7:00 a.m., and all day Sunday and legal holidays	60 dBA	64 dBA	70 dBA
Stationary Equipment. Maximum noise level for repetitively scheduled and relatively long-term operation (periods of 10 days or more) of stationary equipment:			
Daily, except Sundays and legal holidays, 7:00 a.m. to 8:00 p.m.	60 dBA	65 dBA	70 dBA
Daily, 8:00 p.m. to 7:00 a.m. and all day Sunday and legal holidays	50 dBA	55 dBA	60 dBA
At Business Structures			
Mobile Equipment. Maximum noise levels for nonscheduled, intermittent, short-term operation of mobile equipment:			
Daily, including Sundays and legal holidays, all hours		85 dBA (All structures)	

Source: Los Angeles County Code 12.08.440 - Construction noise.

dBA = A-weighted decibel(s)

5.3.1.2 VIBRATION

Section 12.08.560 of the County Noise Control Ordinance provides a ground-borne vibration limit as to not exceed the vibration human perception threshold of 0.01 inch per second (80 VdB).

As noted above, no standards or limits applicable to potential building damage from ground-borne vibration have been adopted by a local, state, or federal agency. Therefore, FTA available guidelines are used to assess potential impacts on buildings and structures due to ground-borne vibration. The FTA's *Transit Noise and Vibration Impacts Assessment Manual* provides impact criteria concerning building damage during construction activities (FTA 2018). Table 16 includes the FTA vibration criteria applicable to construction activities.

Table 16. Construction Vibration Impact Criteria for Building Damage

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

Source: FTA (2018)

PPV = peak particle velocity; in/sec = inch(es) per second

5.4 City of Los Angeles

While the project site is located within the city of Los Angeles, it is owned by the County and is proposed for uses that benefit the public. Accordingly, the project is subject to the regulatory controls of the County of Los Angeles and not the City of Los Angeles. Nonetheless, the policy and regulatory documents of the City of Los Angeles that are most relevant to the project are provided herein for informational purposes.

5.4.1 Noise Element of the City of Los Angeles General Plan

The *Noise Element of the City of Los Angeles General Plan* (City of Los Angeles 1999) addresses noise sources and noise mitigation strategies and regulations and provides objectives and policies that ensure that noise from various sources does not create an unacceptable noise environment. The goal, objectives, and policies of the Noise Element that are relevant to the project are provided below for informational purposes and are used to inform the criteria by which the noise impacts of the proposed La Brea Tar Pits Master Plan is considered.

Goal – A city where noise does not reduce the quality of urban life.

Objectives and Policies –

> ***Objective 2 (Non-airport) -*** Reduce or eliminate non-airport-related intrusive noise, especially relative to noise sensitive uses.
>
> > ***Policy 2.2.*** Enforce and/or implement applicable city, state, and federal regulations intended to mitigate proposed noise-producing activities, reduce intrusive noise, and alleviate noise that is deemed a public nuisance.
>
> ***Objective 3 (Land Use Development) -*** Reduce or eliminate noise impacts associated with proposed development of land and changes in land use.
>
> > ***Policy 3.1.*** *Develop land use policies and programs that will reduce or eliminate potential and existing noise impacts.*

The City of Los Angeles's (City's) noise compatibility guidelines are based on the State's *General Plan Guidelines* (OPR 2017; see Figure 5).

5.4.2 City of Los Angeles Municipal Code

Section 41.40(a) of the Los Angeles Municipal Code (LAMC) prohibits the use, operation, repair, or servicing of construction equipment, as well as job-site delivery of construction materials, between the hours of 9:00 p.m. and 7:00 a.m., where such activities would disturb "persons occupying sleeping quarters in any dwelling hotel or apartment or other place of residence." In addition, Section 41.40(c) prohibits construction, grading, and related job-site deliveries on or within 500 feet of land developed with residential structures before 8:00 a.m. or after 6:00 p.m. on any Saturday or national holiday or at any time on Sunday.

Furthermore, Section 112.05 of the LAMC places a noise level limit of 75 dBA at 50 feet for powered equipment or tools, which includes construction equipment in, or within 500 feet of, any residential zone between the hours of 7:00 a.m. and 10:00 p.m. Under the code, such limits shall not apply where compliance is technically infeasible. Technical infeasibility means that the noise limit cannot be achieved

despite the use of mufflers, shields, sound barriers, and/or other noise reduction devices or techniques during operation of the equipment.

Chapter XI of the LAMC (Noise Regulation) regulates noise from non-transportation noise sources such as commercial or industrial operations, mechanical equipment, or residential activities. These regulations do not apply to vehicles operating on public rights-of-way but do apply to noise generated by vehicles on private property, such as in parking lots or parking structures. The allowable noise levels are determined relative to the existing ambient noise levels at the affected location. Section 111.01(a) of the LAMC defines ambient noise as "the composite of noise from all sources near and far in a given environment, exclusive of occasional and transient intrusive noise sources and the particular noise source or sources to be measured. Ambient noise shall be averaged over a period of at least 15 minutes."

The Noise Regulation indicates that in cases where the actual ambient conditions are not measured, the City's presumed daytime and nighttime ambient noise levels, as defined in the LAMC Section 111.03 and provided in Table 17, should be used.

Table 17. City of Los Angeles Presumed Ambient Noise Levels

Zone	Daytime (7:00 a.m. to 10:00 p.m.), L_{eq}	Nighttime (10:00 p.m. to 7:00 a.m.), L_{eq}
	dBA	dBA
Residential, school, hospitals, hotels	50	40
Commercial	60	55
Manufacturing (M1, MR1, MR2)	60	55
Heavy manufacturing (M2, M3)	65	65

Source: City of Los Angeles Municipal Code, Section 111.03

L_{eq} = equivalent noise level

Section 111.02 states that under conditions where noise alleged to be offending occurs for more than 5 minutes but less than 15 minutes in any 1-hour period between the hours of 7:00 a.m. and 10:00 p.m. of any day, a 5-dBA allowance should be provided to the noise source. Additionally, under conditions where the offending noise occurs for 5 minutes or less in any 1-hour period between the hours of 7:00 a.m. and 10:00 p.m. of any day, an additional 5-dBA allowance can be provided to the noise source. Section 114.02 of the LAMC also provides noise regulations with respect to vehicle-related noise and prohibits the operation of any motor-driven vehicles upon any property within the city in a manner that would exceed the ambient noise level by more than 5 dBA.

5.4.3 City of Los Angeles CEQA Thresholds Guide

The *L.A. CEQA Thresholds Guide: Your Resource for Preparing CEQA Analyses in Los Angeles* (City of L.A. Thresholds Guide; City of Los Angeles 2006) is a guidance document that draws together practical information useful to City staff, project proponents, and the public involved in the environmental review of projects in the city of Los Angeles subject to CEQA.

The City of L.A. Thresholds Guide defines "noise sensitive" as residences, transient lodgings, schools, libraries, churches, hospitals, nursing homes, auditoriums, concert halls, amphitheaters, playgrounds, and parks. The City of L.A. Thresholds Guide includes a set of criteria to evaluate project impacts. The significance thresholds assist in determining whether a project's impacts would be presumed significant under normal circumstances and, therefore, require mitigation to be identified.

A project under CEQA would normally have a significance impact on noise levels from construction if:

- Construction activities lasting more than 1 day would exceed existing ambient exterior noise levels by 10 dBA or more at a noise sensitive use;
- Construction activities lasting more than 10 days in a 3-month period would exceed existing ambient exterior noise levels by 5 dBA or more at a noise sensitive use; or
- Construction activities would exceed the ambient noise level by 5 dBA at a noise sensitive use between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday.

A project would normally have a significant impact on noise levels from project operations if the project causes the ambient noise level measured at the property line of affected uses to increase by 3 dBA CNEL to or within the "normally unacceptable" or "clearly unacceptable" category, or any 5-dBA or greater noise increase (see Figure 5).

6 THRESHOLDS OF SIGNIFICANCE AND METHODOLOGY

The following sections provide the framework for the noise impacts analysis. In general, Appendix G of the State CEQA Guidelines was first consulted to guide the impact analysis. Further, the regulations of the City and the County were compared to determine the most appropriate guidance document for consideration of significant impacts. While the project site is located within the City of Los Angeles, it is owned by the County of Los Angeles and is proposed for uses that benefit the public. Accordingly, the project is not subject to the regulatory controls of the City of Los Angeles. However, the areas surrounding the project site are entirely within the jurisdiction of the City of Los Angeles. As such, the noise analysis was prepared in consideration of both City and County criteria and regulations, with the more restrictive provisions applied.

6.1 Thresholds of Significance

Consistent with the State CEQA Guidelines, Appendix G, the project would have a significant noise impact if it would result in any of the following conditions:

- 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; or
- Generation of excessive ground-borne vibration or ground-borne noise levels; or
- 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 2 miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels.

Because the project site is not located within an airport land use plan, within 2 miles of a public airport or public use airport, or within the vicinity of a private airstrip, the project would not expose project occupants to excessive airport-related noise. Therefore, impacts related to airport-related noise would not occur and are not evaluated any further in this report.

6.1.1 Short-term Construction Noise Criteria

The County Noise Control Ordinance (Section 12.08.440 of the County Code) identifies noise standards for construction activities. The County's construction noise limit is 65 dBA for multi-family residential uses and 85 dBA for business structures. Similarly, the LAMC limit for construction noise lasting more than 10 days is 5 dBA above ambient levels. The following significance criteria are applied to the project, as set forth in the LAMC, the City of L.A. Thresholds Guide, and the County of Los Angeles Ordinance, with the more restrictive provisions applied:

- Construction activities would exceed the ambient noise level by 5 dBA (L_{eq}) or more at a noise-sensitive use.

6.1.2 Short-term Construction Vibration Criteria

Because there are currently no local regulatory standards for ground-borne vibration that are applicable to the project, then, based on FTA impacts with respect to building damage (see Table 5), ground-borne vibration would be considered significant if

- ground-borne vibration levels from construction activities exceed 0.5 PPV at the nearest off-site reinforced-concrete, steel, or timber building; or
- ground-borne vibration levels from construction activities exceed 0.3 PPV at the nearest off-site engineered concrete building; or
- ground-borne vibration levels from construction activities exceed 0.2 PPV at the nearest off-site non-engineered timber and masonry building; or
- ground-borne vibration levels from construction activities exceed 0.12 PPV at buildings extremely susceptible to vibration damage (e.g., historic buildings).

With respect to human annoyance, Section 12.08.560 of the Los Angeles County Noise Control Ordinance presents a threshold of 0.01 inch per second (80 VdB). Therefore, construction vibration impacts associated with human perception would be significant if:

- ground-borne vibration levels from construction activities exceed 80 VdB at the off-site receptor.

6.1.3 Long-Term Operational Noise Criteria

Per Chapter XI of the LAMC, a noise level increase of 5 dBA over the ambient noise level at an adjacent property line is considered a noise violation for most operational noise sources. The Los Angeles County Noise Control Ordinance states that the exterior operational noise level caused by project-related on-site fixed sources shall not exceed the levels presented in Table 14 or the ambient noise level, whichever is greater. Therefore, project-related operational on-site (i.e., non-roadway) noise sources, such as outdoor building mechanical/electrical equipment, outdoor activities, or parking facilities, would be significant if

- operational on-site activities would exceed the ambient noise level by 5 dBA (L_{eq}) or more at a noise-sensitive use.

6.1.4 Traffic Noise Criteria

Relating to roadway noise, a 24-hour average noise level metric (i.e., dBA CNEL) was used to assess noise impacts associated with the project based on the City's land use/noise compatibility guidelines and the City of L.A. Thresholds Guide (City of Los Angeles 2006). An increase of 3 dBA CNEL at noise-sensitive uses with ambient noise levels within the "normally unacceptable" or "clearly unacceptable"

category (see Figure 5), or any 5-dBA or greater noise increase if the ambient noise level at the affected sensitive land use is within the "normally acceptable" or "conditionally acceptable" category, would be considered significant.

6.2 Methodology

This analysis focuses on the potential change in the existing noise levels due to implementation of the project. Noise and ground-borne vibration would result from both construction and operation of the project.

A combination of existing literature and application of accepted noise and ground-borne vibration prediction and propagation methodologies were used for estimating short-term construction, operation, and long-term non-transportation and transportation source noise levels, as well as for evaluating ground-borne vibration impacts.

Using the construction and operation assumptions provided for the project, potential noise and vibration levels were estimated using the methods described below.

6.2.1 Construction Noise

6.2.1.1 ON-SITE CONSTRUCTION NOISE

Construction-related noise was analyzed using data and modeling methodologies from the FHWA's Roadway Construction Noise Model (FHWA 2011). The Roadway Construction Noise Model is FHWA's national model for the prediction of construction noise. This software is based on actual sound level measurements from various equipment types taken during the Central Artery/Tunnel Project conducted in Boston, Massachusetts, during the early 1990s (FWHA 2011).

Estimates of noise from the construction of the project are based on a roster of the maximum amount of construction equipment used on a given day. Table 18 presents standard construction equipment and the associated noise level at 50 feet. The Roadway Construction Noise Model has noise levels for various types of equipment preprogrammed into the software; that is, the noise level associated with the equipment is typical for the equipment type and not based on any specific make or model.

The approximate noise generated by construction equipment to be used at the project site has been conservatively calculated based on an estimated project construction equipment roster anticipated to be used at the construction site, and not considering further attenuation due to atmospheric interference or intervening structures.

The equipment and activities on-site would vary throughout the project, depending on various stages of construction. The predicted noise from construction activity is presented as a worst-case (highest noise level) scenario, where it is assumed that all equipment is present and operating simultaneously on-site for each stage of construction.

To analyze the project's potential noise impacts, the average 1-hour L_{eq} construction noise level generated during each phase of construction was estimated at each analyzed receptor based on its distance to the construction phase activity.

Table 18. Noise Levels for Common Construction Equipment

Equipment Description	Typical Maximum Noise Levels at 50 Feet (dBA)
Auger drill rig	85
Backhoe	80
Chain saw	85
Compressor (air)	80
Concrete saw	90
Crane	85
Dozer	85
Drill rig truck	84
Drum mixer	80
Dump truck	84
Excavator	85
Flat-bed truck	84
Front-end loader	80
Generator	82
Grader	85
Impact pile driver	95
Jackhammer	85
Man lift	85
Paver	85
Pickup truck	55
Pneumatic tools	85
Pumps	77
Rock drill	85
Roller	85
Scraper	85
Tractor	84
Trencher	82
Vibratory concrete mixer	80
Vibratory pile driver	95
Welder/torch	73

Source: Roadway Construction Noise Model Software, Version 1.1 (FHWA 2011)

6.2.1.2 OFF-SITE CONSTRUCTION NOISE

Noise levels would be generated from construction-related traffic associated with worker trips and haul-truck trips on roadways. The analysis of roadway noise levels from the project's construction traffic was conducted using a proprietary traffic noise model (SoundPlan Essential v5.1), with calculations based on data and methodology from the FHWA Traffic Noise Model, Version 2.5 (FHWA 2004).

This model allows for calculating noise levels at specific distances from the roadway based on traffic volumes, average speeds, and site environmental conditions. This analysis assessed the highest daily worker and haul-truck trips during project construction based on the construction assumptions that were developed based on information provided by the Foundation.

SoundPlan Essential, using methodologies from the FHWA Traffic Noise Model, calculates the hourly Leq noise levels generated by construction-related traffic. Potential noise impacts were then determined by comparing the predicted noise levels along the project's haul routes.

6.2.2 Operational Noise

6.2.2.1 ON-SITE OPERATIONAL NOISE

On-site noise levels would be generated by stationary noise sources such as mechanical equipment (heating, ventilation, and air conditioning [HVAC] equipment, dry coolers, and emergency generators), the on-site parking lot, the two loading areas, waste compactors, and the outdoor areas.

Using noise level data from published sources, impacts from these on-site stationary noise sources are evaluated by estimating the noise levels that each noise source would generate at the nearest noise-sensitive receptors. The estimated noise level from each noise source considers the distance from source to receptor.

Regarding mechanical equipment, noise level data for the project's dry coolers, which would be located on each building's rooftop, and three emergency generators, which would be in the mechanical rooms on the ground-floor level of the Page Museum, the new museum building, and the support building, were obtained from the project's mechanical, electrical, and plumbing engineer. It was assumed that the HVAC equipment would be located in mechanical rooms within the project buildings and equipped with silencers to reduce noise levels. Therefore, the analysis of mechanical equipment noise for the project was only conducted for the rooftop dry coolers and emergency generators.

The project's on-site parking lot noise level was estimated using FTA's recommended methodology for stationary source general assessment, which uses the following equation to estimate noise levels for parking garages:

$$L_{eq(h)} = SEL_{ref} + 10\log(N_{autos}/1000) - 25\log(D/50) - 35.6$$

where $L_{eq(h)}$ is the hourly L_{eq} noise level at 50 feet, SEL_{ref} is the reference noise level for a stationary noise source represented in sound exposure level at 50 feet from the noise source, N_{autos} is the number of automobiles per hour, and D is the distance from the parking garage to the sensitive receptor. The FTA cites an SEL_{ref} of 92 dBA for a parking garage with 1,000 cars during the peak activity hour (FTA 2018).

For the project's loading area, which would be used by delivery vehicles serving the project, sound levels from similar projects were used to estimate the noise levels at the nearest off-site sensitive receptors (County of Los Angeles 2017).Similarly, waste compactor noise ratings were taken from Table C8 of the British Standard BS 5228-1:2009 (British Standards Institution 2014).

Use of outdoor areas (i.e., outdoor café and bar located on the center terrace on the west side of the Page Museum; Pit 91; and a shaded outdoor classroom) would consist primarily of people congregating and conversing in those areas. Published data on human speech noise levels was obtained for the estimation of noise levels based on assumptions of the number of people who are expected to gather in each of the project's outdoor amenity areas. The speech noise levels for people in various noise environments used for analysis in this report are shown in Table 19.

Table 19. Noise Levels for Human Speech

Voice Effort	Sound Levels (dBA L_{eq}) at 1 meter (3 feet)		
	Male	Female	Children
Casual	53	50	50
Normal	58	55	55
Raised	65	62	62
Loud	75	71	71
Shout	88	82	82

Sources: EPA (1977); Harris (1998)

Additionally, the outdoor café and bar would be equipped with an outdoor speaker system to provide ambient background music. For this analysis, the noise level generated from the outdoor speaker system is assumed to be equivalent to 75 dBA at a distance of 15 feet (4.5 meters).

6.2.2.2 OFF-SITE OPERATIONAL NOISE

Off-site roadway noise was analyzed using the FHWA Traffic Noise Model methodology and traffic data from the Traffic Study. To quantify the effects of the project, traffic noise was analyzed using four different scenarios: 1) Existing, 2) Existing Plus Project, 3) Future (2032) Without Project, and 4) Future (2032) With Project. The first two scenarios were used to analyze the direct traffic noise impacts of the project; scenarios 3 and 4 were used to analyze the future/cumulative impacts.

6.2.3 Ground-Borne Vibration

6.2.3.1 CONSTRUCTION GROUND-BORNE VIBRATION

Construction-related vibration resulting from the project was analyzed using data and modeling methodologies provided by the FTA analytical vibration prediction model (FTA 2018). This guidance manual provides typical vibration source levels for various types of construction equipment, as well as methods for estimating the propagation of ground-borne vibration over distance.

The following equation was used to estimate the change in PPV levels over distance:

$$PPV_{equipment} = PPV_{ref} \times (100/D_{rec})^{n}$$

Where: $PPV_{equipment}$ is the PPV at a receptor; PPV_{ref} is the reference PPV at 100 feet from the equipment; D_{rec} is the distance from the equipment to the receptor, in feet; and n is the attenuation rate through ground (the default suggested value for n is 1.1). The equation was used to estimate the PPV at each of the closest vibration-sensitive receptors based on the worst-case (closest) distance between each source and receptor.

Vibration emission levels (PPV_{ref}) used are from measurements from several projects, including the Central Artery/Tunnel Project in Boston and from several published sources, including the FTA manual (2018) and Dowding (1996).

6.2.3.2 OPERATIONAL GROUND-BORNE VIBRATION

The primary source of ground-borne vibration related to the proposed project's operation includes traffic and parking operations. Humans are not likely to perceive vehicular-induced ground vibration. Therefore, the proposed project's operation would not increase the current vibration levels in the vicinity of the project.

7 IMPACTS EVALUATION AND RECOMMENDED MITIGATION MEASURES

Consistent with the State CEQA Guidelines, Appendix G, the evaluation contained in this section considered whether the project would generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project that exceed the criteria established in the previous section and, similarly, whether the project would generate excessive ground-borne vibration or ground-borne noise levels. Mitigation measures are identified in the analysis where impacts of the project could exceed significance criteria.

7.1 Increases in Ambient Noise Levels

The following analysis considers whether the project would generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies.

7.1.1 Construction Noise

Project construction would consist of different activities undertaken in phases through to the operation of the project. For this analysis, project construction has divided into six phases based on the types of equipment required and workload: 1) demolition; 2) site preparation; 3) grading; 4) building construction; 5) paving; and 6) architectural coating (see Table 2).

7.1.1.1 ON-SITE CONSTRUCTION NOISE

Construction activities associated with the project are anticipated to last approximately 4 years, with completion anticipated in 2027. During this time, temporary increases in noise levels in the project area are expected to occur due to the operation of various large construction equipment within the project site.

Table 20 shows the project's anticipated construction schedule and presents an estimate of the maximum number of pieces of equipment for each construction phase, and conservatively assumes equipment would be operating 8 hours per day, 6 days per week for each construction phase duration.

The highest construction noise levels at each of the analyzed monitoring locations were estimated based on the reference noise levels shown in Table 21 and the distance of each analyzed monitor from the project's construction activities. To more accurately characterize the noise associated with each construction phase, a usage factor for each type of equipment was used to represent those periods when equipment is not operating under full-power conditions. Additionally, the noise levels were estimated to present a conservative impact analysis, assuming all pieces of equipment operate simultaneously. Furthermore, the model assumes that construction noise is constant when, in reality, construction activities are periodic and change throughout the day.

Table 20. Construction Anticipated Schedule, Trips, and Equipment

Phase (Duration)	Equipment Used			Daily Vehicle Trips
	Type	Number	Hours/day	
Demolition (262 working days) 1/1/2024 – 10/31/2024 Approx.102,000 square feet demolished	Rubber-tired dozer	2	8	50 worker one-way trips 8 vendor one-way trips 4 haul one-way trip
	Excavators or Jackhammer	3	8	
	Concrete/industrial saw	1	8	
Site Preparation (262 working days) 1/1/2024 – 10/31/2024	Rubber-tired dozers	3	8	20 worker one-way trips
	Tractors/loaders/backhoe	4	8	
Grading (52 working days) 11/1/2024 – 12/31/2024	Graders	1	8	75 worker one-way trips 10 vendor one-way trips 107 haul one-way trips
	Excavators or Jackhammer	2	8	
	Tractors/loaders/backhoe	2	8	
	Scrapers	2	8	
	Rubber-tired dozers	1	8	
Building Construction (755 working days) 1/1/2025 – 5/31/2027	Forklifts	3	8	200 worker one-way trips 17 vendor one-way trips 7 haul one-way trips
	Generator sets	1	8	
	Cranes	1	8	
	Welders	1	8	
	Tractors/loaders/backhoe	3	8	
Paving (184 working days) 6/1/2027 – 12/31/2027	Pavers	2	8	15 worker one-way trips 4 vendor one-way trips
	Paving equipment	2	8	
	Rollers	2	8	
Architectural Coating (79 working days) 7/1/2026 – 9/30/2026	Air compressor	1	6	20 worker one-way trips

Table 21. Estimated Construction Noise Levels at Nearby Sensitive Receptors

Receptor	Measured Daytime Ambient Noise Levels, L_{eq}	Estimated Construction Noise Levels by Construction Phases (Ambient plus Construction), L_{eq}						Significance Threshold, L_{eq}*
		Demolition	Site Preparation	Grading	Building Const.	Paving	Arch. Coating	
	dBA	dBA	dBA	dBA	dBA	dBA	dBA	dBA
ST2	67.5	68.8	69.2	70.5	67.8	67.5	67.6	72.5
ST3	65.5	67.2	**70.8**	**73.2**	66.6	65.7	65.8	70.5
ST5	74.9	75.2	75.4	75.8	75.0	75.0	74.9	79.9
ST6	62.8	**68.8**	**70.0**	**72.4**	65.9	64	63.4	67.8
ST7	64.8	68.3	**71.2**	**73.7**	65.9	65.1	65	69.8
ST8	69.8	70.9	71.4	72.5	70.0	69.8	69.8	74.8
ST9	74.6	75.1	75.4	76.0	74.7	74.6	74.6	79.6
ST10	67.1	67.7	67.6	68.0	67.3	67.1	67.1	72.1

Note: Values in **bold** exceed the significance threshold for that receptor.

* Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

As discussed in Section 6.1.1, the corresponding significance criterion used in this construction noise analysis is an increase in the ambient noise level (L_{eq}) of 5 dBA at the noise-sensitive use. The estimated construction noise levels that would be experienced by the nearby sensitive receptors are shown in Table 21. Detailed calculations are provided in Appendix B.

As shown in Table 21, the highest estimated construction-related noise levels that could result at nearby sensitive receptors throughout the project's construction period would range from 68.0 dBA L_{eq} at sensitive receptor ST10 to 76.0 dBA L_{eq} at sensitive receptor ST9. All analyzed sensitive receptors near the project site would not be exposed to construction only noise levels exceeding 75 dBA L_{eq}. The exceedance of the significance thresholds would occur during the demolition, site preparation, and grading phases. As indicated in Table 21, the estimated construction noise levels at off-site receptors ST2, ST5, ST8, ST9, and ST10 would be below the significance threshold. At receptors ST3, ST6, and ST7, the estimated noise levels would exceed the significance threshold by 2.7 dBA at ST3, 4.6 at ST6, and 3.9 dBA at ST7. Therefore, without employing mitigation, noise impacts associated with the construction activities for the project would be significant.

The project would have a significant short-term and temporary impact on residential uses located to the north and east of the project site (see Table 21). Therefore, mitigation measures are proposed to minimize the impact of construction noise on these sensitive noise receptors. Mitigation measures would require construction of temporary and impermeable 12-foot-high temporary barriers designed to reduce noise by 10 dBA, or more, along the north and the east boundary between the project site and off-site receptor locations north and east of the project site. The noise reduction provided by the noise barrier would reduce construction-related noise to less than the significance threshold at the off-site sensitive uses. Consequently, construction noise impacts would be mitigated to less than significant.

Potential impacts would be reduced below the applicable threshold(s) with implementation of Mitigation Measure NOI-1 (Table 22). Therefore, potential impacts related to on-site construction noise would be less than significant with mitigation.

Table 22. Estimated Construction Noise Levels at Nearby Sensitive Receptors after Mitigation

Receptor	Measured Daytime Ambient Noise Levels, L_{eq}	Estimated Construction Noise Levels by Construction Phases (Ambient plus Construction), L_{eq} †						Significance Threshold, L_{eq}*
		Demolition	Site Preparation	Grading	Building Const.	Paving	Arch. Coating	
	dBA	dBA	dBA	dBA	dBA	dBA	dBA	dBA
ST2	67.5	67.6	67.7	67.9	67.5	67.5	67.5	72.5
ST3	65.5	65.7	66.4	67.2	65.6	65.5	65.5	70.5
ST5	74.9	74.9	75.0	75.0	74.9	74.9	74.9	79.9
ST6	62.8	63.9	64.3	65.4	63.2	62.9	62.9	67.8
ST7	64.8	65.7	66.1	67.0	64.9	64.8	64.8	69.8
ST8	69.8	70.9	71.4	72.5	70.0	69.9	69.8	74.8
ST9	74.6	75.1	75.4	76.0	74.7	74.6	74.6	79.6
ST10	67.1	67.7	67.6	68.0	67.3	67.1	67.1	72.1

* Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

† Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

7.1.1.2 OFF-SITE CONSTRUCTION NOISE

Worker vehicles and haul trucks transporting equipment and materials to and from the project site during construction would increase noise levels on the local roads in the project area. It is expected that construction trucks would typically access the project site from the nearby Interstate (I-) 10, taking the La Brea Avenue exit from the westbound I-10. Trucks would travel northbound to Wilshire Boulevard, continue westbound on Wilshire Boulevard, then northbound on Curson Avenue to the project site. The construction worker vehicles would not be restricted to travel exclusively on this haul route and instead are allowed to access the project site via other routes. However, to perform a conservative traffic noise analysis, all traffic for the project (i.e., worker and truck trips) is assumed to travel on this haul route.

The grading phase would be the peak period of construction with the highest number of construction trucks. There would be a maximum of 127 construction trucks (e.g., vendor, hauling), totaling 254 trips per day. The hourly truck trips were estimated based on 8-hour workdays and assuming a uniform distribution of trips. The hourly worker trips were also estimated, assuming half of the workers would arrive in 1 hour, resulting in 38 worker trips per hour.

The estimated roadway noise levels resulting from the addition of the project's construction-related traffic on these roadway segments are shown in Table 23. Detailed calculations are provided in Appendix B.

Table 23. Off-Site Construction Traffic Noise Levels

Construction Phase	Estimated Number of Trips per Hour					Estimated Off-Site Construction Noise Levels along the Project Haul Routes, L_{eq}
						Wilshire Boulevard, La Brea Avenue, Curson Avenue
	Worker*	Vendor†	Hauling†	On-Site Trucks†	Total	dBA
Demolition	25.0	2.0	2.0	1.0	**30.0**	57.1
Site preparation	10.0	0.0	0.0	1.0	**11.0**	51.4
Grading	38.0	3.0	27.0	1.0	**69.0**	64.5
Building construction	100.0	5.0	0.0	1.0	**106.0**	59.6
Paving	8.0	1.0	0.0	1.0	**10.0**	52.8
Architectural coating	10.0	0.0	0.0	1.0	**11.0**	55.9
Existing ambient noise levels along the project haul routes, L_{eq}‡						72.4 / 73.3 / 68.6
Significance threshold, L_{eq}§						68.6

* Worker trips are based on half the total trips per day.

† The number of hourly trips is based on an hourly average, assuming a uniform distribution of trips over an 8-hour workday.

‡ La Brea Avenue noise levels were taken from County of Los Angeles (2017:Table IV.I-14).

§ Significance thresholds are equivalent to the existing daytime noise levels.

As shown in Table 23, the estimated noise levels generated by construction off-site traffic would be below the existing daytime ambient noise level at the noise sensitive receptors along the haul routes. Therefore, potential noise impacts from off-site construction traffic would be less than significant.

7.1.2 Operational Noise

Once operational, the project would establish stationary on-site noise sources at the project site as well as contribute to off-site roadway traffic noise. New stationary noise sources would include the parking facilities, mechanical equipment (i.e., dry coolers and emergency generators), loading and waste compacting activities, and activities associated with the use of outdoor spaces (e.g., outdoor café and bar located on the center terrace on the west side of the Page Museum; and Pit 91 outdoor classroom), and roadway traffic noise sources.

7.1.2.1 ON-SITE STATIONARY NOISE SOURCES

7.1.2.1.1 Mechanical Equipment

As part of the project, noise-generating mechanical equipment at the project site would include numerous HVAC equipment located in mechanical rooms throughout the Page Museum building, the new museum building, and the support building, rooftop dry coolers, and emergency generators. All mechanical rooms within the project buildings would be outfitted with sound attenuation measures to reduce noise levels at neighboring properties. The mechanical equipment that may be audible at nearby sensitive receptors would be the dry coolers (located on the rooftops of the buildings) and three emergency generators (located on the ground floor of each building).

Noise from the rooftop dry coolers would be generated when the equipment is operating throughout the day. A reference noise level of 73 dBA at 3 feet was assumed for a 5-ton dry cooler unit.[2] Detailed calculations along the number and rating of the mechanical noise sources are provided in Appendix C.

The three generators on the ground floor of the project buildings would be operated periodically for testing and maintenance in addition to times of electrical power failure at the project site. It was assumed that only one of the generators would be operating at a given hour. A rating of 86 dBA at 50 feet was assumed for the generators.

Table 24 presents the estimated noise levels at the evaluated off-site receptors from the operation of the proposed mechanical noise sources.

As shown in Table 24, the estimated noise levels from the operation of the mechanical equipment would range between 47.3 dBA L_{eq} at receptor ST10 to 59.2 dBA L_{eq} at receptor ST3. Additionally, all the estimated noise levels from mechanical equipment plus existing ambient would be below the existing daytime ambient noise levels plus 5 dBA. Thus, the operation of the project's mechanical noise sources would not generate substantial noise level increases at nearby off-site sensitive uses. Therefore, this impact would be less than significant.

[2] Lennox ML14XC1 Air conditioner MERIT Series.

Table 24. Estimated Noise Levels from Mechanical Equipment

Off-Site Receptor	Existing Daytime Ambient Noise Levels, L_{eq}	Estimated Noise Levels from Mechanical Equipment, L_{eq}	Ambient plus Project Noise Levels, L_{eq}	Significance Threshold*
	dBA	dBA	dBA	dBA
ST2	67.5	50.1	67.6	72.5
ST3	65.5	59.2	66.4	70.5
ST5	74.9	53.1	74.9	79.9
ST6	62.8	57.2	63.9	67.8
ST7	64.8	56.4	65.4	69.8
ST8	69.8	52.1	69.9	74.8
ST9	74.6	52.0	74.6	79.6
ST10	67.1	47.3	67.1	72.1

* Significance thresholds are assumed to be equal to the measured daytime noise levels plus 5 dBA.

7.1.2.1.2 Parking Noise

The existing parking lot would be expanded from 63,000 square feet to 65,000 square feet and shifted to the northeast corner of the site. The parking lot would hold approximately 170 vehicle parking spaces, an increase of approximately 15 spaces. Sources of noise within the parking lot would primarily include car movements, doors opening and closing, people talking, and car alarms.

Based on the peak-hour traffic volumes presented in the Traffic Study prepared for the project, vehicles traveling into and out of the project site would result in approximately 85 morning peak hour, 122 midday peak hour, and 34 afternoon peak hour trips at the project's driveways on Curson Avenue and 6th Street. For the purposes of this analysis, the midday peak-hour traffic volumes were used to estimate noise levels generated at the parking lot, as they are higher than the traffic volumes for the morning and afternoon. peak hours. Therefore, approximately 0.72 movements per hour per parking space were assumed to estimate noise levels at the analyzed receptors.

Table 25 presents the estimated noise levels from parking activities at the off-site sensitive receptors. As shown in Table 25, the estimated noise levels from the parking lot operation would range between 24.5 dBA L_{eq} at receptor ST10 and 43.8 dBA L_{eq} at receptor ST6. Additionally, the estimated noise levels at all off-site locations would be below the project significance threshold (i.e., an increase of 5 dBA Leq over existing ambient noise levels). Thus, the project's parking lot operation would not generate substantial noise level increases at nearby off-site sensitive uses. Therefore, this impact would be less than significant.

Table 25. Estimated Noise Levels from Parking Activities

Off-Site Receptor	Existing Daytime Ambient Noise Levels, L_{eq}	Estimated Noise Levels from Parking Activities, L_{eq}	Ambient plus Project Noise Levels, L_{eq}	Significance Threshold*
	dBA	dBA	dBA	dBA
ST2	67.5	29.0	67.5	72.5
ST3	65.5	37.1	65.5	70.5
ST5	74.9	42.2	74.9	79.9
ST6	62.8	43.8	62.9	67.8
ST7	64.8	33.4	64.8	69.8
ST8	69.8	26.2	69.8	74.8
ST9	74.6	28.2	74.6	79.6
ST10	67.1	24.5	67.1	72.1

* Significance thresholds are assumed to be equal to the measured daytime noise levels plus 5 dBA.

7.1.2.1.3 Loading and Trash Compactor Activities

Two loading and service areas would accommodate deliveries for labs, exhibition material, food service, events, and staff offices. One of the loading areas would be located at the new museum building on the north side, and the second loading area would be located at the Page Museum, also on the north side. The project would include one waste compactor at each of the proposed loading areas.

For the project's loading area, which would be used by delivery vehicles serving the project, sound levels from similar projects were used to estimate the noise levels at the nearest off-site sensitive receptors. A noise level of 71 dBA L_{eq} at a distance of 50 feet was assumed to represent typical noise levels from loading dock facilities (County of Los Angeles 2017). In addition, a noise rating of 66 dBA L_{eq} at a distance of 50 feet was assumed to represent the waste compactor operations (British Standards Institution 2014:Table C8, Waste Compactor).

The estimated noise levels from the operation of the loading docks and the trash compactors would be below the existing ambient noise levels (Table 26). Therefore, potential noise impacts from loading and waste compactor operations would be less than significant. Detailed calculations are provided in Appendix C.

Table 26. Estimated Noise Levels from Loading and Trash Compactor Operations

Off-Site Receptor	Existing Daytime Ambient Noise Levels, L_{eq}	Estimated Noise Levels from Loading and Trash Compactor Operations, L_{eq}	Ambient plus Project Noise Levels, L_{eq}	Significance Threshold*
	dBA	dBA	dBA	dBA
ST2	67.5	48.8	67.6	72.5
ST3	65.5	54.4	65.8	70.5
ST5	74.9	57.2	75.0	79.9
ST6	62.8	59.2	64.4	67.8

Off-Site Receptor	Existing Daytime Ambient Noise Levels, L_{eq}	Estimated Noise Levels from Loading and Trash Compactor Operations, L_{eq}	Ambient plus Project Noise Levels, L_{eq}	Significance Threshold*
	dBA	dBA	dBA	dBA
ST7	64.8	55.1	65.2	69.8
ST8	69.8	51.9	69.9	74.8
ST9	74.6	52.3	74.6	79.6
ST10	67.1	48.1	67.2	72.1

* Significance thresholds are assumed to be equal to the measured daytime noise levels plus 5 dBA.

7.1.2.1.4 Outdoor Areas

Outdoor areas (e.g., outdoor café and bar located on the center terrace on the west side of the Page Museum; and Pit 91 outdoor classroom) would consist primarily of people congregating and conversing in those areas. Pit 91 would continue to be a key research and interpretation destination in the park. The project would demolish the current viewing station overlooking Pit 91 and construct a shaded outdoor classroom with canopy (2,880 square feet). The second floor of the Page Museum would contain two classrooms and a multipurpose space. An outdoor café and bar would be located next to these spaces on the center terrace on the west side of the Page Museum (8,234 square feet).

To analyze the noise impacts from the use of outdoor spaces, the estimated total number of people is conservatively based on 15 square feet per person, based on the California Building Code's occupant load factor for assembly areas. For the noise analysis, it was estimated that up to 549 people could occupy the second floor of the Page Museum, and up to 192 people could occupy the Pit 91 outdoor classroom. A reference noise level of 65 dBA and 62 dBA L_{eq} at a distance of 3 feet (1 meter) was used to represent males and females speaking in a raised voice, respectively (Harris 1991). Additionally, it was assumed that up to 50 percent of the people would be talking at the same time.

An additional potential noise source associated with the use of the second floor of the Page Museum would be the use of an outdoor sound system. A reference value of 75 dBA L_{eq} at a distance of 15 feet (4.5 meters) was assumed for the operation of the outdoor sound system. In addition, the hours of operation for the use of the outdoor areas were assumed to be from 7:00 a.m. to 7:00 p.m., following the museum's hours of operation.

Table 27 presents the estimated noise levels resulting from the use of outdoor areas at the off-site sensitive receptors. Detailed calculations are provided in Appendix C. As shown in Table 27, the estimated noise levels at all analyzed receptors would not exceed the ambient noise levels plus 5 dBA L_{eq} threshold. Therefore, potential noise impacts from outdoor areas would be less than significant.

Table 27. Estimated Noise Levels from Outdoor Uses

Off-Site Receptor	Existing Daytime Ambient Noise Levels, L_{eq}	Estimated Noise Levels from Outdoor Uses, L_{eq}	Ambient plus Project Noise Levels, L_{eq}	Significance Threshold*
	dBA	dBA	dBA	dBA
ST2	67.5	42.7	67.5	72.5
ST3	65.5	46.9	65.6	70.5
ST5	74.9	47.9	74.9	79.9
ST6	62.8	51.8	63.1	67.8
ST7	64.8	50.7	65.0	69.8
ST8	69.8	46.4	69.8	74.8
ST9	74.6	46.7	74.6	79.6
ST10	67.1	42.0	67.1	72.1

* Significance thresholds are assumed to be equal to the measured daytime noise levels plus 5 dBA.

7.1.2.2 OFF-SITE TRAFFIC

7.1.2.2.1 Existing Plus Project

The project would generate new vehicle trips that would incrementally add to the existing traffic levels on surrounding streets and could result in an increase in the associated traffic noise levels. Based on the Traffic Study prepared for the project, it is estimated that the project would generate 12 morning peak hour trips, 306 midday peak hour trips, and 85 afternoon peak hour trips during the weekdays. Additionally, the Traffic Study estimates that the project would generate 284 midday peak hour trips during the weekend (Saturday). Overall, the project would generate an estimated 1,293 new trips during the weekdays and 1,679 net new trips during the weekend.

As discussed previously, while the Traffic Study did not directly analyze ADT on the roadway segments in the project site vicinity, the ADT volumes on these nearby roadway segments were estimated, based on the maximum daily peak hour trips on each roadway intersection presented in the Traffic Study. Detailed calculations are provided in Appendix C.

Table 28 presents the estimated off-site traffic noise impacts associated with Existing Plus Project conditions. As shown therein, the project would result in a maximum CNEL increase of 0.3 dBA during a weekday, and an estimated increase of 0.4 dBA during the weekend, between 6th Street and Wilshire Boulevard. Therefore, the estimated off-site traffic noise level increase would be below the 3-dBA CNEL significance threshold based on the City's land use/noise compatibility guidelines and the City of L.A. Thresholds Guide, and the potential current off-site traffic noise impacts associated with the project would be less than significant.

7.1.2.2.2 Future Plus Project

The analysis of operational off-site traffic noise impacts above evaluated the increase in traffic noise levels attributable to the project based on existing conditions. Further analysis was prepared to determine the potential noise impacts associated with the project operation compared to the future noise conditions. Table 29 summarizes the estimated off-site traffic noise impacts associated with Future Plus Project conditions. Detailed calculations are provided in Appendix C. As shown therein, the project would result

in a maximum CNEL increase of 0.4 dBA during weekdays along the road segment between Fairfax Avenue and Ogden Drive, and an estimated increase of 0.4 dBA during the weekend between 6th Street and Wilshire Boulevard. Therefore, the estimated off-site traffic noise level increase would be below the City of L.A. Thresholds Guide, and the potential future off-site traffic noise impacts associated with the project would be less than significant.

Table 28. Traffic Noise Impacts – Existing Plus Project

Roadway Segment		Adjacent Land Use	Calculated Traffic Noise Levels, CNEL					
			Existing Without Project		Existing Plus Project		Increase Due to Project	
			Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
			dBA	dBA	dBA	dBA	dBA	dBA
6th Street	Between Fairfax Avenue and Ogden Drive	Residential	71.3	69.8	71.5	70.1	0.2	0.3
	Between Ogden Drive and Curson Avenue	Residential	71.7	67.7	71.7	67.7	0.0	0.0
	East of Curson Avenue	Residential	71.0	67.7	71.0	67.8	0.0	0.1
Ogden Drive	North of 6th Street	Residential	62.6	60.8	62.7	60.9	0.1	0.1
	South of Wilshire Boulevard	Commercial	62.9	60.8	63.0	61.0	0.1	0.2
Spaulding Avenue	South of Wilshire Boulevard	Commercial	64.9	63.2	65.0	63.4	0.1	0.2
Curson Avenue	North of 6th Street	Residential	67.3	64.8	67.4	64.9	0.1	0.1
	Between 6th Street and Wilshire Boulevard	Residential	68.1	67.6	68.4	68.0	0.3	0.4
	South of Wilshire Boulevard	Residential	71.0	69.1	71.1	69.3	0.1	0.2
Wilshire Boulevard	Between Fairfax Avenue and Ogden Drive	Museum	68.3	66.0	68.4	66.2	0.1	0.2
	Between Ogden Drive and Spaulding Avenue	Commercial	67.2	65.1	67.3	65.3	0.1	0.2
	Between Spaulding Avenue and Curson Avenue	Museum	69.4	67.0	69.5	67.2	0.1	0.2
	East of Curson Avenue	Commercial	67.8	65.8	67.9	65.9	0.1	0.1

Table 29. Traffic Noise Impacts – Future Plus Project

Roadway Segment		Adjacent Land Use	Calculated Traffic Noise Levels, CNEL					
			Future Without Project		Future Plus Project		Increase Due to Project	
			Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
			dBA	dBA	dBA	dBA	dBA	dBA
6th Street	Between Fairfax Avenue and Ogden Drive	Residential	71.5	70.3	71.5	70.5	0.0	0.2
	Between Ogden Drive and Curson Avenue	Residential	71.9	70.3	72.0	70.4	0.1	0.1
	East of Curson Avenue	Residential	71.2	68.4	71.2	68.4	0.0	0.0
Ogden Drive	North of 6th Street	Residential	63.0	61.8	63.3	61.9	0.3	0.1
	South of Wilshire Boulevard	Commercial	63.0	61.2	63.0	61.4	0.0	0.2
Spaulding Avenue	South of Wilshire Boulevard	Commercial	65.3	63.5	65.3	63.8	0.0	0.2
Curson Avenue	North of 6th Street	Residential	67.7	66.3	67.7	66.4	0.0	0.1
	Between 6th Street and Wilshire Boulevard	Residential	67.8	68.1	67.8	68.5	0.0	0.4
	South of Wilshire Boulevard	Residential	71.4	69.5	71.4	69.6	0.0	0.1
Wilshire Boulevard	Between Fairfax Avenue and Ogden Drive	Museum	62.8	66.3	63.2	66.5	0.4	0.2
	Between Ogden Drive and Spaulding Avenue	Commercial	67.6	65.5	67.6	65.8	0.0	0.2
	Between Spaulding Avenue and Curson Avenue	Museum	69.6	67.4	69.6	67.7	0.0	0.2
	East of Curson Avenue	Commercial	67.5	66.2	67.6	66.4	0.1	0.1

7.1.2.3 COMPOSITE NOISE LEVEL IMPACTS

In addition to considering the project's operational off-site and on-site noise generation, the composite noise levels (i.e., noise levels from all on-site and off-site noise sources combined) experienced by surrounding sensitive receptors due to the project's operational noise sources occurring concurrently with existing noise sources are also evaluated to assess the potential overall increase in ambient noise levels at the analyzed monitoring locations. These off-site monitoring locations would experience noise levels generated by the project's mechanical equipment, outdoor areas, parking facilities, off-site traffic, and loading operations in addition to ambient noise levels generated by surrounding land uses and roadways. The analysis of the composite operational noise levels in the project vicinity was evaluated using the CNEL noise metric and is conducted using the following assumptions for each noise source:

- Mechanical Noise: Noise levels generated by the noise-generating mechanical equipment at the project site would occur continuously between 6:00 a.m. and 10:00 p.m.
- Parking Facility: Noise levels that would be generated at the project parking lot by peak-hour vehicle trips are assumed to occur continuously throughout the hours of 6:00 a.m. to 10:00 p.m.
- Outdoor Activities: Noise levels that would be generated at the outdoor areas are assumed to occur continuously throughout the hours of 7:00 a.m. to 7:00 p.m.
- Off-Site Traffic: Noise levels generated by off-site traffic are assumed to occur continuously for 24 hours per day.
- Loading Area/Waste Compactor: Noise levels generated by the project's loading areas and the waste compactors are assumed to occur for 3 hours between 7:00 a.m. to 10:00 p.m.

Table 30 presents the estimated composite noise levels in terms of CNEL at the off-site receptors.

Table 30. Composite Operational Noise Impacts

Off-Site Monitoring Location	Estimated Noise Levels								
	Existing Ambient	Off-Site Traffic	Mechanical	Parking	Trash Compactor and Loading	Outdoor Activities	Project Composite	Ambient plus Project	Increase
	CNEL	CNEL	CNEL	CNEL	CNEL	CNEL	CNEL	CNEL	CNEL
	dBA	dBA	dBA	dBA	dBA	dBA	dBA	dBA	dBA
ST2	68.1	52.9	51.3	30.2	46.0	39.7	55.8	68.3	0.2
ST3	66.4	43.9	60.4	38.3	51.6	43.9	61.1	67.5	1.1
ST5	75.1	50.8	54.3	43.4	54.4	44.9	58.5	75.2	0.1
ST6	64.4	54.1	58.4	45.0	56.4	48.8	61.7	66.3	1.9
ST7	65.9	54.7	57.6	34.6	52.3	47.7	60.4	67.0	1.1
ST8	70.2	54.7	53.3	27.4	49.1	43.4	57.8	70.4	0.2
ST9	74.8	53.9	53.2	29.4	49.5	43.7	57.5	74.9	0.1
ST10	67.8	52.3	48.5	25.7	45.3	39.0	54.5	68.0	0.2

As shown in Table 30, the project would have a maximum increase of 1.9 dBA CNEL (at receptor ST6) during project operation. Therefore, the composite noise levels due to the project operations would remain below the 3-dBA CNEL significance threshold set forth in the City of L.A. Thresholds Guide and the City's Noise Regulations for noise-sensitive uses within the "normally unacceptable" or "clearly unacceptable" category and the potential noise impacts due to project operations would be less than significant.

7.2 Ground-borne Vibration and Noise

The operation of heavy construction equipment at the project site would generate ground-borne vibration that could affect structures immediately adjacent to the project site or could also cause an annoyance to people at those locations.

Ground-borne vibration levels resulting from construction activities occurring within the project site were estimated using data published by the FTA (FTA 2018). Construction activities that would have the potential to generate levels of ground-borne vibration within the project site include mobile equipment activities, among others. Project vibration impacts were estimated using the vibration source level of construction equipment and the construction vibration assessment methodology published by the FTA.

Based on the reference vibration levels for the different pieces of equipment and the distances from the primary project construction activities, construction vibration velocity levels were estimated at the different receptors. The estimated vibration velocities were then compared against the building damage criteria in the FTA's *Transit Noise and Vibration Impacts Assessment Manual* (2018). Table 31 shows the estimated PPVs at the off-site receptors and the estimated vibration impacts on buildings.

Table 31. Construction Vibration Impacts – Building Damage

Off-Site Receptor	Building Category	Estimated Vibration Velocity Levels at the Off-Site Receptors (PPV)						Significance Threshold,
		Demolition	Site Preparation	Grading	Building Const.	Paving	Arch. Coating	
		in/sec	in/sec	in/sec	in/sec	in/sec	in/sec	in/sec
ST2	Non-engineered timber and masonry buildings	0.0051	0.0051	0.0051	0.0009	0.0016	0.0000	0.2
ST3	Non-engineered timber and masonry buildings	0.0021	0.0119	0.0119	0.0025	0.0038	0.0000	0.2
ST5	Non-engineered timber and masonry buildings	0.0029	0.0062	0.0062	0.0013	0.0095	0.0000	0.2
ST6	Engineered concrete and masonry buildings	0.0069	0.0107	0.0107	0.0025	0.0092	0.0000	0.3
ST7	Engineered concrete and masonry buildings	0.0070	0.0140	0.0140	0.0013	0.0043	0.0000	0.3
ST8	Engineered concrete and masonry buildings	0.0072	0.0072	0.0072	0.0006	0.0024	0.0000	0.3
ST9	Engineered concrete and masonry buildings	0.0088	0.0088	0.0088	0.0006	0.0025	0.0000	0.3

Off-Site Receptor	Building Category	Estimated Vibration Velocity Levels at the Off-Site Receptors (PPV)						Significance Threshold,
		Demolition	Site Preparation	Grading	Building Const.	Paving	Arch. Coating	
		in/sec	in/sec	in/sec	in/sec	in/sec	in/sec	in/sec
ST10	Engineered concrete and masonry buildings	0.0013	0.0013	0.0013	0.0006	0.0013	0.0000	0.3

* FTA construction vibration impact criteria for building damage (FTA 2018).

Table 32 shows the comparison between the estimated ground-vibration levels and the human annoyance threshold. Detailed calculation worksheets are included in Appendix D.

Table 32. Construction Vibration Impacts – Human Annoyance

Off-Site Receptor	Building Category	Estimated Vibration Velocity Levels at the Off-Site Receptors						Significance Threshold,
		Demolition	Site Preparation	Grading	Building Const.	Paving	Arch. Coating	
		VdB	VdB	VdB	VdB	VdB	VdB	VdB
ST2	Non-engineered timber and masonry buildings	62	62	62	47	52	0	80
ST3	Non-engineered timber and masonry buildings	54	69	69	56	60	0	80
ST5	Non-engineered timber and masonry buildings	57	64	64	50	68	0	80
ST6	Engineered concrete and masonry buildings	65	69	69	56	67	0	80
ST7	Engineered concrete and masonry buildings	65	71	71	51	61	0	80
ST8	Engineered concrete and masonry buildings	65	65	65	44	56	0	80
ST9	Engineered concrete and masonry buildings	67	67	67	44	56	0	80
ST10	Engineered concrete and masonry buildings	50	50	50	44	50	0	80

* FTA ground-borne vibration impact criteria for residences and buildings where people normally sleep for infrequent vibration events (FTA 2018).

As shown in Table 31 and Table 32, vibration levels generated by the construction equipment at the project site during project construction would not exceed the applicable vibration criteria for building damage or human annoyance at the surrounding structures. Therefore, impacts would be less than significant.

Groundborne noise refers to the rumbling noise resulting from the motion of building room surfaces as a result of the vibration of floors and walls; and it is only audible inside buildings. The link between groundborne vibration and groundborne noise depends on the vibration's frequency and the acoustical

absorption characteristics of the receiving room. The groundborne noise decibel level is lower for typical buildings than the groundborne vibration velocity level at low frequencies.

7.3 Cumulative Impacts

Cumulative noise or vibration impacts can occur when more than one project is under construction simultaneously or is expected to generate operational noise or vibration at the same time. The potential for cumulative noise impacts to occur is specific to the distance between the related projects and their stationary sources.

7.3.1 On-Site Construction Noise

Related projects in the vicinity of the proposed project considered in this analysis include construction activities that could occur simultaneously with the construction of the project consistent with the analysis performed in the Traffic Study. The following related projects were identified in the Traffic Study and are included in this analysis:

- LACMA renovation: This project is located at 5906 W. Wilshire Boulevard and shares the western half of the block with the proposed project. It proposes replacing four buildings within LACMA East collectively compromising 392,871 gsf. Overall, the project would result in a net decrease in the square footage of museum operations by approximately 5,371 square feet and a reduction in the maximum theater size from over 600 seats to 300 seats.
- Mixed-use project: This project is located at 5891 Olympic Boulevard and will consist of 46 apartments.
- Wilshire Curson project: This project is located at 5700–5780 Wilshire Boulevard / 712–752 S. Curson Avenue / 5721–5773 W. 8th Street / 715–761 S. Masselin Avenue. It is currently developed with two, six-story primarily office buildings comprising 1,002,990 square feet of floor area. The project would retain and renovate the southern portion of the existing buildings and would demolish the northern portion of the two existing office buildings for the addition of approximately 1,923,837 square feet of new floor area, consisting of 1,806,237 square feet of office uses and 117,600 square feet of ground floor commercial space. Upon completion, the project would result in a net lot area of 390,092 square feet (8.9 acres) within the project site, with a total floor area of approximately 2,340,552 square feet composed of 2,222,952 square feet of office floor area and 117,600 square feet of commercial floor area with a floor area ratio of 6:1.
- Mixed-use residential project: This project is located at 800 S. Fairfax Avenue. The site currently contains 40 apartments and an existing 3,829-square-foot restaurant/lounge. The restaurant/ lounge will remain, but the existing residential buildings will be replaced with 181 apartments, 28 affordable apartments, and 2,653 square feet of restaurant.
- Mixed-use residential and commercial development: This project is located at 5411 Wilshire Boulevard. It consists of the construction of a new 42-story mixed-use tower including up to 348 dwelling units and approximately 10,176 square feet of ground-floor commercial uses. Thirty-eight of the dwelling units would be restricted affordable. The project would demolish approximately 38,545 square feet of existing commercial uses.
- Olympic + Fairfax mixed-use project: This project is located at 6052–6066 W. Olympic Boulevard. It includes construction of a six-story, mixed-use building containing approximately 5,135 square feet of commercial retail space, 108 apartments, and 12 affordable apartments. It would replace 11,440 square feet of commercial retail uses.

- Mixed-use project: This project is located at 6300 W. 3rd Street. It includes demolition of over 150,000 square feet of commercial uses and construction of an eight-story, mixed-use building consisting of 83,994 square feet of commercial space and 331 dwelling units.
- San Vicente medical/commercial project: This project is located at 650–676 S. San Vicente Boulevard. The project proposes 140,305 square feet of medical office space, 4,000 square feet of restaurant/retail space, and 1,000 square feet for other commercial uses, such as a pharmacy. This will include the demolition of an existing 5,738 square-foot, vacant educational building and an 8,225-square-foot Big 5 Sporting Goods store.
- Olympic Boulevard mixed-use project: This project is located at 6001–6011 W. Olympic Boulevard. The proposed project includes the construction of a mixed-use building with 1,596 square feet of ground-floor retail, 51 apartments, and six affordable apartments. It includes the demolition of 8,488 square feet of retail and six apartments.

The construction-related noise levels from the related projects can be considered transient and intermittent. Further, it is assumed that the projects within the incorporated area of the City of Los Angeles would be required to comply with the City's Noise Ordinance No. 144,331 and No. 161,574. In addition, each of the related projects would be subject to Section 41.40 of the LAMC, which limits the hours of allowable construction activities, and Section 112.05 of the LAMC, which prohibits any powered equipment or powered hand tool from producing noise levels that exceed 75 dBA at a distance of 50 feet from the noise source within 500 feet of a residential zone. Noise resulting from cumulative construction activities would be reduced to the extent reasonably and technically feasible through mitigation measures proposed for each project and compliance with locally enforced noise ordinances.

As previously discussed in Section 7.1.1, construction noise levels for the project could exceed existing ambient noise levels by more than 5 dBA. However, as shown in Table 22, on-site construction noise levels for the project would be reduced to less-than-significant levels after mitigation. Therefore, with the related projects also complying with City requirements regarding construction noise impacts, the proposed project construction-related noise would have a less-than-significant cumulative impact.

7.3.2 Off-Site Construction Noise

In addition to the cumulative impacts of on-site construction activities, off-site construction trucks and worker trucks for the project would potentially result in cumulative impacts if the trucks for the related projects use the same haul route. As discussed above, the primary haul routes include Wilshire Boulevard and La Brea Avenue. A basic review of the related projects indicates that the same route would be used during construction. The analysis of the estimated off-site noise levels from project construction (see Section 7.1.1.2) indicated that noise levels along the haul route would be below the estimated ambient levels by a minimum of 4.1 dBA. To exceed the ambient noise levels, the total truck trips would need to increase by an approximate factor of 2.6 (i.e., increase from 69 trips per hour to 179 trips per hour). Based on the proposed project's limited contribution of construction traffic trips and the limited number of anticipated future development projects that would use the same or a similar haul route, traffic associated with the construction of the project and other related projects would not cumulatively add up to 179 or more hourly trips along Wilshire Boulevard and La Brea Avenue. Therefore, cumulative noise impacts from off-site construction are expected to be less than cumulatively significant.

7.3.3 On-Site Construction Vibration

Ground-borne vibration impacts due to construction activities are generally limited to buildings located close to the construction site. The closest related project is the LACMA renovation project, which is located adjacent to the project site. The *LACMA Building for the Permanent Collection Draft Environmental Impact Report* (County of Los Angeles 2017) indicates that the estimated vibration velocity levels (from all construction equipment) would be below the significance thresholds at all off-site building structures. Therefore, due to the rapid attenuation of the ground-borne vibration, there is no potential for a cumulative construction impact concerning ground-borne vibration.

7.3.4 Off-Site Construction Vibration

Based on FTA data, the vibration generated by a typical truck would be approximately 63VdB (0.006 PPV) at 50 feet (FTA 2018). The shortest distance between the haul route and the receptor is approximately 25 feet. Ground-borne vibration generated by a haul truck at this distance would be approximately 0.016 PPV, which is well below the most stringent building damage threshold of 0.12 PPV. Additionally, the estimated vibration levels along the haul route would be approximately 72 VdB, below the human annoyance threshold of 80 VdB. Trucks from related projects are expected to produce similar vibration levels as the project. Thus, the ground-borne vibration levels from haul trucks would be below the 0.12 PPV threshold. Therefore, potential cumulative vibration impacts from off-site construction would be less than significant.

7.3.5 On-Site Stationary Noise Sources

The LAMC limits stationary source noise from mechanical equipment; therefore, potential noise levels from these sources are expected to be less than significant for each related project. Furthermore, based on the distance of the related projects from the project site, cumulative stationary source noise impacts associated with the operation of the project and neighboring related projects would be less than significant.

7.3.6 Off-Site Mobile Noise Sources

Traffic volumes would be generated by the project and other related projects and would produce roadway noise. Cumulative noise impacts due to mobile sources were analyzed by comparing the projected increase in traffic noise levels from the Existing Conditions to Future Cumulative Conditions. The Future Cumulative Conditions scenario includes traffic volumes from future projects, future growth, and the proposed project. Table 33 presents the calculated traffic noise levels from Existing Conditions and Future Cumulative Plus Project Conditions.

Cumulative traffic volumes would result in a maximum increase of 2.5 dBA during a typical weekday, and 2.5 dBA during a typical weekend. Therefore, the cumulative noise impacts due to mobile (off-site) noise sources associated with the project, future growth, and related projects would be less than significant.

Table 33. Traffic Noise Impacts – Future Cumulative Plus Project

Roadway Segment		Adjacent Land Use	Calculated Traffic Noise Levels, CNEL					
			Existing Conditions		Cumulative Plus Project		Increase	
			Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
			dBA	dBA	dBA	dBA	dBA	dBA
6th Street	Between Fairfax Avenue and Ogden Drive	Residential	71.3	69.8	72.3	71.1	1.0	1.3
	Between Ogden Drive and Curson Avenue	Residential	71.7	67.7	72.5	69.4	0.8	1.7
	East of Curson Avenue	Residential	71.0	67.7	71.6	68.9	0.6	1.2
Ogden Drive	North of 6th Street	Residential	62.6	60.8	63.4	62.2	0.8	1.4
	South of Wilshire Boulevard	Commercial	62.9	60.8	64.2	62.1	1.3	1.3
Spaulding Avenue	South of Wilshire Boulevard	Commercial	64.9	63.2	66.2	64.4	1.3	1.2
Curson Avenue	North of 6th Street	Residential	67.3	64.8	68.3	66.8	1.0	2.0
	Between 6th Street and Wilshire Boulevard	Residential	68.1	67.6	70.6	70.1	2.5	2.5
	South of Wilshire Boulevard	Residential	71.0	69.1	72.6	70.7	1.6	1.6
Wilshire Boulevard	Between Fairfax Avenue and Ogden Drive	Museum	68.3	66.0	69.4	67.2	1.1	1.2
	Between Ogden Drive and Spaulding Avenue	Commercial	67.2	65.1	68.5	66.4	1.3	1.3
	Between Spaulding Avenue and Curson Avenue	Museum	69.4	67.0	70.6	68.3	1.2	1.3
	East of Curson Avenue	Commercial	67.8	65.8	69.2	67.4	1.4	1.6

7.4 Mitigation Measures

As discussed in detail in Section 7.1.1, project construction would have the potential to result in significant noise impacts at off-site sensitive receptors from on-site construction activities.

Mitigation Measure NOI-1: The following measures shall be implemented to reduce construction-related noise impacts:

- Operation of equipment used in construction, alteration, drilling, or demolition work shall be prohibited between the hours of 7:00 p.m. and 7:00 a.m., Monday through Friday; before 8:00 a.m. or after 6:00 p.m. on Saturday; and any time on Sundays or legal holidays.
- A temporary and impermeable 12-foot-high temporary barrier designed to provide a 10-dBA noise reduction, shall be erected along the eastern and northern sides of the project site boundary. This barrier shall be constructed in one of the following ways:
  - from acoustical blankets hung over or from a supporting frame, or
  - from commercially available acoustical panels lined with sound-absorbing material, or
  - from common construction materials such as plywood, provided that the barrier is designed with overlapping material at the seams to ensure that no gaps exist between the panels.
- Noise levels from powered equipment or powered hand tools at a distance of 50 feet from the noise source or within 500 feet of a residential zone will be limited to 75 dBA, such limits shall not apply where compliance is technically infeasible. Technical infeasibility means that the noise limit cannot be achieved despite the use of mufflers, shields, sound barriers, and/or other noise reduction devices or techniques during operation of the equipment.
- All construction equipment shall be properly maintained per manufacturers' specifications and fitted with the best available noise-suppression devices.
- Pneumatic tools used at the site shall be equipped with an exhaust muffler on the compressed air exhaust to minimize noise levels.
- Stationary noise sources shall be located as far from adjacent sensitive receptors as possible and shall be muffled and enclosed within temporary sheds or insulated barriers when possible.
- Prior to commencement of construction, a designated project contact person will directly notify the management of any surrounding residential properties located within 100 feet of the project site about the construction schedule and activities and provide a contact number to address any noise-related complaints during construction.
- A designated point of contact shall be identified to address noise-related complaints during construction. The noise disturbance coordinator will be responsible for responding to any local complaints about construction noise.

Implementation of the above-described Mitigation Measure NOI-1 would minimize this impact to less than significant.

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APPENDIX A

Technician Field Sheets

La Brea Tar Pits Master Plan
Baseline Noise Survey

Location: LT1

Coordinates	Lat:	34.062993				
	Lon:	-118.355549				
	Elevation (ft):	176				
Sound Meter	Model :	LD 831	**Preamplifier**	Model :	PRM831	
	S/N:	0011655		S/N:	76995	
Microphone	Model :	377B02	**File Name**		LT_LB1.001.s	
	S/N:	173681				
Monitoring	Start Time:	4/7/22 8:58 AM	**Calibrations**	Pre-Test:	4/7/22 8:52 AM	Deviation: -0.01
	End Time:	4/9/22 8:09 AM		Post-Test:	4/9/22 8:09 AM	

Location Description
Northeast corner of the Lake Pit.

Parameter	LT_LB1.001.s										
	4/7/22 8:58 AM	4/9/22 8:09 AM									
Duration hh:mm		47:11:00									
LA_{eq}		56.9									
L_{dn}		60.6									
L_{d}		58.2									
L_{n}		53.0									
L_{den}		60.9									
L_{d}		58.9									
L_{eve}		54.2									
L_{n}		53.0									
$LA_{1.7}$		64.0									
$LA_{8.3}$		59.5									
LA_{10}		59.0									
LA_{25}		56.6									
LA_{50}		54.0									
LA_{90}		46.6									

Log:

Event	Day	Time	Comment (Dominant Background Noise Source)
1	7-Apr	8:58	Traffic
			Construction
			Park visitors
			Landscaping equipment

La Brea Tar Pits Master Plan
Baseline Noise Survey

Location: LT2

Coordinates	Lat:	34.06456			
	Lon:	-118.358345			
	Elevation (ft):	173			
Sound Meter	Model :	LD 831	**Preamplifier**	Model :	PRM831
	S/N:	0011585		S/N:	46400
Microphone	Model :	377B02	**File Name**		LT_LB2.003.s
	S/N:	108355			
Monitoring	Start Time:	4/7/22 9:22 AM	**Calibrations**	Pre-Test:	4/7/22 9:20 AM
	End Time:	4/9/22 8:35 AM		Post-Test:	4/9/22 8:36 AM

Deviation: -0.07

Location Description
Northeast corner of Pit 13

Parameter	LT_LB2.003.s										
	4/7/22 9:22 AM	4/9/22 8:35 AM									
Duration hh:mm		47:13:32									
LA_{eq}		55.0									
L_{dn}		59.1									
L_{d}		56.2									
L_{n}		51.7									
L_{den}		59.5									
L_{d}		56.6									
L_{eve}		54.2									
L_{n}		51.7									
$LA_{1.7}$		62.0									
$LA_{8.3}$		57.5									
LA_{10}		57.0									
LA_{25}		54.8									
LA_{50}		52.4									
LA_{90}		46.0									

Log:

Event	Day	Time	Comment (Dominant Background Noise Source)
1	7-Apr	9:20	Traffic
			Construction
			Park visitors
			Landscaping equipment

La Brea Tar Pits Master Plan
Baseline Noise Survey

Location: ST2

Coordinates Lat: 34.064964
Lon: -118.359104
Elevation (ft): 170

Sound Meter Model : LD 831
S/N: 0011655

Preamplifier Model : PRM831
S/N: 76995

Microphone Model : 377B02
S/N: 173681

File Name LT_LB1.002.s

Monitoring Start Time: 4/9/22 9:28 AM
End Time: 4/9/22 9:43 AM

Calibrations Pre-Test: 4/9/22 9:28 AM Deviation: 0.04
Post-Test: 4/9/22 9:44 AM

Location Description
Multi-familiy residence on the north side of West 6th Street, northwest of the Project site.

Parameter	LT_LB1.002.s										
	4/9/22 9:28 AM	4/9/22 9:43 AM									
Duration hh:mm		0:15:01									
LA_{eq}		67.5									
L_{dn}		-									
L_{d}		67.5									
L_{n}		-									
L_{den}		-									
L_{d}		67.5									
L_{eve}		-									
L_{n}		-									
$LA_{1.7}$		74.4									
$LA_{8.3}$		70.4									
LA_{10}		70.0									
LA_{25}		67.0									
LA_{50}		60.9									
LA_{90}		52.1									

Log:

Event	Day	Time	Comment (Dominant Background Noise Source)
1	9-Apr	9:28	Traffic
			Construction
			Park visitors

La Brea Tar Pits Master Plan
Baseline Noise Survey

Location: ST3

Coordinates	Lat:	34.064973				
	Lon:	-118.357479				
	Elevation (ft):	176				
Sound Meter	Model :	LD 831	**Preamplifier**	Model :	PRM831	
	S/N:	0011655		S/N:	76995	
Microphone	Model :	377B02	**File Name**		LT_LB1.003.s	
	S/N:	173681				
Monitoring	Start Time:	4/9/22 9:51 AM	**Calibrations**	Pre-Test:	4/9/22 9:50 AM	Deviation: 0.01
	End Time:	4/9/22 10:06 AM		Post-Test:	4/9/22 10:07 AM	

Location Description
Multi-familiy residence on the north side of West 6th Street, northwest of the Project site.

Parameter	LT_LB1.003.s										
	4/9/22 9:51 AM	4/9/22 10:06 AM									
Duration hh:mm		0:15:02									
LA_{eq}		65.5									
L_{dn}		-									
L_{d}		65.5									
L_{n}		-									
L_{den}		-									
L_{d}		65.5									
L_{eve}		-									
L_{n}		-									
$LA_{1.7}$		72.6									
$LA_{8.3}$		70.4									
LA_{10}		70.0									
LA_{25}		66.7									
LA_{50}		62.5									
LA_{90}		51.8									

Log:

Event	Day	Time	Comment (Dominant Background Noise Source)
1	9-Apr	9:50	Traffic
			Construction
			Park visitors

La Brea Tar Pits Master Plan
Baseline Noise Survey

Location: ST5

Coordinates	Lat:	34.064983				
	Lon:	-118.354607				
	Elevation (ft):	181				
Sound Meter	Model :	LD 831	**Preamplifier**	Model :	PRM831	
	S/N:	0011588		S/N:	58540	
Microphone	Model :	377B02	**File Name**		ST_LB.001.s	
	S/N:	308845				
Monitoring	Start Time:	4/7/22 10:26 AM	**Calibrations**	Pre-Test:	4/7/22 10:24 AM	Deviation: 0.05
	End Time:	4/7/22 10:41 AM		Post-Test:	4/7/22 10:42 AM	

Location Description
Multi-familiy residence on the north side of West 6th Street, northeast of the Project site.

Parameter	ST_LB.001.s										
	4/7/22 10:26 AM	4/7/22 10:41 AM									
Duration hh:mm		0:15:01									
LA_{eq}		74.9									
L_{dn}		-									
L_{d}		74.9									
L_{n}		-									
L_{den}		-									
L_{d}		74.9									
L_{eve}		-									
L_{n}		-									
$LA_{1.7}$		83.0									
$LA_{8.3}$		72.2									
LA_{10}		71.8									
LA_{25}		68.6									
LA_{50}		62.6									
LA_{90}		56.1									

Log:

Event	Day	Time	Comment (Dominant Background Noise Source)
1	7-Apr	10:26	Traffic

La Brea Tar Pits Master Plan
Baseline Noise Survey

Location: ST6

Coordinates	Lat:	34.064148				
	Lon:	-118.354543				
	Elevation (ft):	182				
Sound Meter	Model :	LD 831	**Preamplifier**	Model :	PRM831	
	S/N:	0011588		S/N:	58540	
Microphone	Model :	377B02	**File Name**		ST_LB.002.s	
	S/N:	308845				
Monitoring	Start Time:	4/7/22 10:48 AM	**Calibrations**	Pre-Test:	4/7/22 10:47 AM	Deviation: 0.03
	End Time:	4/7/22 11:03 AM		Post-Test:	4/7/22 11:04 AM	

Location Description
Multi-familiy residence on the east side of Curson Avenue, east of the Project site.

Parameter	ST_LB.002.s										
	4/7/22 10:48 AM	4/7/22 11:03 AM									
Duration hh:mm		0:15:03									
LA_{eq}		62.8									
L_{dn}		-									
L_{d}		62.8									
L_{n}		-									
L_{den}		-									
L_{d}		62.8									
L_{eve}		-									
L_{n}		-									
$LA_{1.7}$		70.7									
$LA_{8.3}$		67.4									
LA_{10}		66.8									
LA_{25}		63.2									
LA_{50}		59.1									
LA_{90}		51.5									

Log:

Event	Day	Time	Comment (Dominant Background Noise Source)
1	7-Apr	10:48	Traffic
			Parking Lots

La Brea Tar Pits Master Plan
Baseline Noise Survey

Location: ST7

Coordinates	Lat:	34.063134				
	Lon:	-118.354546				
	Elevation (ft):	185				
Sound Meter	Model :	LD 831	**Preamplifier**	Model :	PRM831	
	S/N:	0011588		S/N:	58540	
Microphone	Model :	377B02	**File Name**		ST_LB.003.s	
	S/N:	308845				
Monitoring	Start Time:	4/7/22 11:09 AM	**Calibrations**	Pre-Test:	4/7/22 11:09 AM	Deviation: -0.03
	End Time:	4/7/22 11:24 AM		Post-Test:	4/7/22 11:25 AM	

Location Description
Mixed-use commercial building on the east side of Curson Avenue, east of the Project site.

Parameter	ST_LB.003.s										
	4/7/22 11:09 AM	4/7/22 11:24 AM									
Duration hh:mm		0:15:03									
LA_{eq}		64.8									
L_{dn}		-									
L_d		64.8									
L_n		-									
L_{den}		-									
L_d		64.8									
L_{eve}		-									
L_n		-									
$LA_{1.7}$		74.0									
$LA_{8.3}$		66.5									
LA_{10}		66.0									
LA_{25}		63.6									
LA_{50}		60.0									
LA_{90}		54.6									

Log:

Event	Day	Time	Comment (Dominant Background Noise Source)
1	7-Apr	11:09	Traffic
			Parking Lots

La Brea Tar Pits Master Plan
Baseline Noise Survey

Location: ST8

Coordinates	Lat:	34.06227				
	Lon:	-118.354891				
	Elevation (ft):	186				
Sound Meter	Model :	LD 831	**Preamplifier**	Model :	PRM831	
	S/N:	0011588		S/N:	58540	
Microphone	Model :	377B02	**File Name**		ST_LB.004.s	
	S/N:	308845				
Monitoring	Start Time:	4/7/22 11:32 AM	**Calibrations**	Pre-Test:	4/7/22 11:31 AM	Deviation: -0.04
	End Time:	4/7/22 11:47 AM		Post-Test:	4/7/22 11:48 AM	

Location Description
Office building on the south side of Wilshire Blvd, southeast of the Project site.

Parameter	ST_LB.004.s										
	4/7/22 11:32 AM	4/7/22 11:47 AM									
Duration hh:mm		0:15:05									
LA_{eq}		69.8									
L_{dn}		-									
L_{d}		69.8									
L_{n}		-									
L_{den}		-									
L_{d}		69.8									
L_{eve}		-									
L_{n}		-									
$LA_{1.7}$		78.1									
$LA_{8.3}$		73.0									
LA_{10}		72.5									
LA_{25}		69.6									
LA_{50}		65.4									
LA_{90}		57.1									

Log:

Event	Day	Time	Comment (Dominant Background Noise Source)
1	7-Apr	11:32	Traffic

La Brea Tar Pits Master Plan
Baseline Noise Survey

Location: ST9

Coordinates	Lat:	34.062328				
	Lon:	-118.356069				
	Elevation (ft):	182				
Sound Meter	Model :	LD 831	**Preamplifier**	Model :	PRM831	
	S/N:	0011588		S/N:	58540	
Microphone	Model :	377B02	**File Name**		ST_LB.005.s	
	S/N:	308845				
Monitoring	Start Time:	4/7/22 11:58 AM	**Calibrations**	Pre-Test:	4/7/22 11:56 AM	Deviation: 0.17
	End Time:	4/7/22 12:13 PM		Post-Test:	4/7/22 12:16 PM	

Location Description
Commercial building on the south side of Wilshire Blvd, south of the Project site.

Parameter	ST_LB.005.s										
	4/7/22 11:58 AM	4/7/22 12:13 PM									
Duration hh:mm		0:15:02									
LA_{eq}		74.6									
L_{dn}		-									
L_d		74.6									
L_n		-									
L_{den}		-									
L_d		74.6									
L_{eve}		-									
L_n		-									
$LA_{1.7}$		81.3									
$LA_{8.3}$		79.0									
LA_{10}		78.7									
LA_{25}		76.0									
LA_{50}		71.7									
LA_{90}		63.7									

Log:

Event	Day	Time	Comment (Dominant Background Noise Source)
1	7-Apr	11:58	Traffic
			Construction

La Brea Tar Pits Master Plan
Baseline Noise Survey

Location: ST10

Coordinates	Lat:	34.062551				
	Lon:	-118.358913				
	Elevation (ft):	164				
Sound Meter	Model :	LD 831	**Preamplifier**	Model :	PRM831	
	S/N:	0011588		S/N:	58540	
Microphone	Model :	377B02	**File Name**		ST_LB.006.s	
	S/N:	308845				
Monitoring	Start Time:	4/7/22 12:31 PM	**Calibrations**	Pre-Test:	4/7/22 12:30 PM	Deviation: -0.34
	End Time:	4/7/22 12:46 PM		Post-Test:	4/7/22 1:02 PM	

Location Description
Commercial building on the south side of Wilshire Blvd, southwest of the Project site.

Parameter	ST_LB.006.s										
	4/7/22 12:31 PM	4/7/22 12:46 PM									
Duration hh:mm		0:15:08									
LA_{eq}		67.1									
L_{dn}		-									
L_d		67.1									
L_n		-									
L_{den}		-									
L_d		67.1									
L_{eve}		-									
L_n		-									
$LA_{1.7}$		75.4									
$LA_{8.3}$		70.5									
LA_{10}		69.9									
LA_{25}		67.5									
LA_{50}		63.4									
LA_{90}		54.7									

Log:

Event	Day	Time	Comment (Dominant Background Noise Source)
1	7-Apr	11:58	Traffic
			Construction

Baseline Noise Survey
Weather Data

34.094° N, 118.334° W

Station: Enrique Noguera Educational Gar
ID: KCALOSAN1004

Start date: 4/7/2022 **End date:** 4/9/2022

Day	Time	Temperature		Hourly Wind	Precipitation	Humidity	Daily max	Daily min
		F	C	mph	in	%	F	F
4/7/2022	0:00	65.15	18.4	0.0	0.00	66%	96.54	61.01
	1:00	65.11	18.4	0.0	0.00	65%		
	2:00	64.73	18.2	0.0	0.00	68%		
	3:00	61.80	16.6	0.0	0.00	76%		
	4:00	61.01	16.1	0.0	0.00	70%		
	5:00	61.07	16.1	0.0	0.00	54%		
	6:00	61.15	16.2	0.0	0.00	40%		
	7:00	66.61	19.2	0.0	0.00	33%		
	8:00	75.62	24.2	0.1	0.00	23%		
	9:00	84.80	29.3	0.1	0.00	19%		
	10:00	88.34	31.3	0.2	0.00	19%		
	11:00	91.49	33.1	0.3	0.00	17%		
	12:00	93.98	34.4	0.6	0.00	15%		
	13:00	96.54	35.9	1.3	0.00	14%		
	14:00	96.18	35.7	2.5	0.00	13%		
	15:00	96.22	35.7	2.6	0.00	12%		
	16:00	94.04	34.5	3.1	0.00	12%		
	17:00	92.37	33.5	2.3	0.00	12%		
	18:00	88.08	31.2	1.1	0.00	14%		
	19:00	82.34	28.0	0.0	0.00	20%		
	20:00	77.88	25.5	0.0	0.00	26%		
	21:00	75.58	24.2	0.0	0.00	27%		
	22:00	74.05	23.4	0.0	0.00	27%		
	23:00	71.79	22.1	0.0	0.00	27%		

Baseline Noise Survey
Weather Data

34.094° N, 118.334° W

Station: Enrique Noguera Educational Gar
ID: KCALOSAN1004

Start date: 4/7/2022 **End date:** 4/9/2022

Day	Time	Temperature		Hourly Wind	Precipitation	Humidity	Daily max	Daily min
		F	C	mph	in	%	F	F
4/8/2022	0:00	72.77	22.6	0.1	0.00	21%	96.01	66.26
	1:00	70.27	21.3	0.0	0.00	22%		
	2:00	70.65	21.5	0.3	0.00	21%		
	3:00	75.74	24.3	0.0	0.00	14%		
	4:00	69.48	20.8	0.0	0.00	24%		
	5:00	66.26	19.0	0.0	0.00	28%		
	6:00	69.10	20.6	0.0	0.00	21%		
	7:00	71.11	21.7	0.0	0.00	23%		
	8:00	75.83	24.4	0.0	0.00	27%		
	9:00	87.10	30.6	0.0	0.00	18%		
	10:00	92.05	33.4	0.0	0.00	14%		
	11:00	94.84	34.9	0.0	0.00	13%		
	12:00	95.78	35.4	1.7	0.00	12%		
	13:00	96.01	35.6	2.5	0.00	10%		
	14:00	94.91	34.9	3.7	0.00	10%		
	15:00	94.55	34.8	5.1	0.00	9%		
	16:00	94.81	34.9	4.2	0.00	8%		
	17:00	93.90	34.4	3.2	0.00	9%		
	18:00	90.57	32.5	1.2	0.00	13%		
	19:00	84.52	29.2	0.0	0.00	19%		
	20:00	79.82	26.6	0.0	0.00	24%		
	21:00	77.21	25.1	0.0	0.00	27%		
	22:00	74.87	23.8	0.0	0.00	30%		
	23:00	73.19	22.9	0.0	0.00	32%		

Baseline Noise Survey
Weather Data

34.094° N, 118.334° W

Station: Enrique Noguera Educational Gar
ID: KCALOSAN1004

Start date: 4/7/2022 **End date:** 4/9/2022

Day	Time	Temperature		Hourly Wind	Precipitation	Humidity	Daily max	Daily min
		F	C	mph	in	%	F	F
4/9/2022	0:00	70.84	21.58	0.0	0.00	0.41		
	1:00	69.09	20.61	0.0	0.00	0.37		
	2:00	67.86	19.92	0.0	0.00	0.39		
	3:00	66.57	19.21	0.0	0.00	0.38		
	4:00	64.96	18.31	0.0	0.00	0.42		
	5:00	63.92	17.73	0.0	0.00	0.42		
	6:00	63.19	17.33	0.0	0.00	0.42		
	7:00	65.20	18.44	0.0	0.00	0.45		
	8:00	71.13	21.74	0.0	0.00	0.42		
	9:00	77.75	25.42	0.0	0.00	0.37		
	10:00	81.92	27.73	0.0	0.00	0.35		
	11:00	83.12	28.40	0.0	0.00	0.37		
	12:00	82.31	27.95	1.30	0.00	0.40		
	13:00	81.50	27.50	2.6	0.00	0.44		
	14:00	81.53	27.51	1.6	0.00	0.44		
	15:00	81.99	27.77	2.1	0.00	0.41		
	16:00	80.57	26.98	2.9	0.00	0.42		
	17:00	78.09	25.61	1.3	0.00	0.45		
	18:00	72.03	22.24	1.9	0.00	0.50		
	19:00	67.08	19.49	0.8	0.00	0.58		
	20:00	65.41	18.56	0.5	0.00	0.61		
	21:00	64.28	17.93	0.3	0.00	0.67		
	22:00	63.46	17.48	0.0	0.00	0.74		
	23:00	63.20	17.33	0.3	0.00	0.77		

APPENDIX B

Construction Noise Calculations

Existing Roadway Traffic Noise Levels - Weekday

Station	Vehicles type	Traffic values				Control	Road surface
		AM	midday	PM	Speed		
		Veh/h	Veh/h	Veh/h	km/h		
Wilshire Boulevard - Ogden Dr EB T Traffic direction: In entry direction							
	Total	554	954	1594	-		
	Automobiles	543	935	1562	56		
	Medium trucks	-	-	-	-		
	Heavy trucks	11	19	32	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	-		
	Motorcycles	-	-	-	-		
	Auxiliary vehicle	-	-	-	-		
Wilshire Boulevard-Spaulding Avenue EB T Traffic direction: In entry direction							
	Total	561	961	1599	-		
	Automobiles	550	942	1567	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	11	19	32	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Wilshire Boulevard-Curson Avenue EB T Traffic direction: In entry direction							
	Total	629	905	1591	-		
	Automobiles	616	887	1559	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	13	18	32	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Wilshire Boulevard-Curson Avenue EB T2 Traffic direction: In entry direction							
	Total	742	942	1533	-		
	Automobiles	742	942	1533	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Wilshire Boulevard - Ogden Dr WB T Traffic direction: In entry direction							
	Total	1164	675	663	-		
	Automobiles	1163	673	661	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	1	2	2	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Wilshire Boulevard-Spaulding Avenue WB T Traffic direction: In entry direction							
	Total	1176	673	645	-		
	Automobiles	1152	660	632	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	24	13	13	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Wilshire Boulevard-Curson Avenue WB T Traffic direction: In entry direction							
	Total	1131	665	635	-		
	Automobiles	1108	652	622	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	23	13	13	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Wilshire Boulevard-Curson Avenue WB T1 Traffic direction: In entry direction							
	Total	1021	640	681	-		
	Automobiles	1021	640	681	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Ogden Drive-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	9	24	53	-		
	Automobiles	9	24	52	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	0	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Ogden Drive-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	9	12	48	-		
	Automobiles	9	12	47	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	0	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Spaulding Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	115	65	78	-		
	Automobiles	113	64	76	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	2	1	2	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Spaulding Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	77	75	63	-		
	Automobiles	75	74	62	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	2	2	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		

Existing Roadway Traffic Noise Levels - Weekday

Station	Vehicles type	Traffic values				Control	Road surface
		AM	midday	PM	Speed		
		Veh/h	Veh/h	Veh/h	km/h		
Curson Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	549	300	323	-		
	Automobiles	538	294	317	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	11	6	6	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Curson Avenue-Wilshire Boulevard NB W1 Traffic direction: In entry direction							
	Total	382	264	352	-		
	Automobiles	374	259	345	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	8	5	7	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Wilshire Boulevard-Curson Avenue WB T1 1 Traffic direction: In entry direction							
	Total	843	524	556	-		
	Automobiles	826	514	545	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	17	10	11	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Curson Avenue-Wilshire Boulevard NB W2 Traffic direction: In entry direction							
	Total	104	82	82	-		
	Automobiles	102	80	80	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	2	2	2	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Curson Avenue-Wilshire Boulevard SB Traffic direction: In entry direction							
	Total	352	260	258	-		
	Automobiles	345	255	253	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	7	5	5	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Curson Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	324	157	245	-		
	Automobiles	318	154	240	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	6	3	5	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
6th Street-Curson Avenue WB T Traffic direction: In entry direction							
	Total	1751	638	739	-		
	Automobiles	1716	625	724	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	35	13	15	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
6th Street-Curson Avenue WB T Traffic direction: In entry direction							
	Total	1942	675	687	-		
	Automobiles	1903	662	673	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	39	14	14	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
6th Street-Ogden Dr WB T Traffic direction: In entry direction							
	Total	1926	925	741	-		
	Automobiles	1887	907	726	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	39	19	15	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
6th Street-Ogden Dr EB T Traffic direction: In entry direction							
	Total	500	768	910	-		
	Automobiles	490	753	892	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	10	15	18	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
6th Street-Curson Avenue EB T Traffic direction: In entry direction							
	Total	541	573	943	-		
	Automobiles	530	562	924	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	11	11	19	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
6th Street-Curson Avenue EB T Traffic direction: In entry direction							
	Total	607	610	1167	-		
	Automobiles	595	598	1144	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	12	12	23	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		

Existing Roadway Traffic Noise Levels - Weekday

Station	Vehicles type	Traffic values AM Veh/h	midday Veh/h	PM Veh/h	Speed km/h	Control	Road surface
Curson Avenue-6th Street NB W Traffic direction: In entry direction							
	Total	166	129	213	-		
	Automobiles	163	126	209	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	3	3	4	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Curson Avenue-6th Street SB W Traffic direction: In entry direction							
	Total	269	122	171	-		
	Automobiles	264	120	168	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	5	2	3	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Ogden Dr-6th Street SB W Traffic direction: In entry direction							
	Total	90	24	37	-		
	Automobiles	88	24	36	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	2	0	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Ogden Dr-6th Street NB W Traffic direction: In entry direction							
	Total	26	19	45	-		
	Automobiles	25	19	44	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	1	0	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Curson Avenue-Wilshire Boulevard NB Traffic direction: In entry direction							
	Total	486	346	434	-		
	Automobiles	476	339	425	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	10	7	9	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-	none	Average (of DGAC and PCC)
Ogden Dr-6th Street EB S Traffic direction: In entry direction							
	Total	36	61	33	-		
	Automobiles	35	60	32	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	1	1	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Ogden Dr-6th Street NB E Traffic direction: In entry direction							
	Total	8	76	114	-		
	Automobiles	8	74	112	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	2	2	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		

Roadway Segment		Adjacent Land Use	Leq dBA	Daytime dBA	Evening dBA	Nightime dBA	CNEL dBA
6th Street	Between Fairfax Ave. and Ogden Dr.	Residential	71.8	70.0	67.0	62.3	71.3
	Between Ogden Dr. and Curson Ave.	Residential	72.2	70.4	67.4	62.7	71.7
	East of Curson Ave.	Residential	71.5	69.7	66.7	62.0	71.0
Ogden Drive	North of 6th St.	Residential	63.1	61.3	58.3	53.6	62.6
	South of Wilshire Blvd.	Commercial	63.4	61.6	58.6	53.9	62.9
Spaulding Avenue	South of Wilshire Blvd.	Commercial	65.4	63.6	60.6	55.9	64.9
Curson Avenue	North of 6th St.	Residential	67.8	66.0	63.0	58.3	67.3
	Between 6th St. and Wilshire Blvd.	Residential	68.6	66.8	63.8	59.1	68.1
	South of Wilshire Blvd.	Residential	71.5	69.7	66.7	62.0	71.0
Wilshire Boulevard	Between Fairfax Ave. and Ogden Dr.	Museum	68.8	67.0	64.0	59.3	68.3
	Between Ogden Dr. and Spaulding Ave.	Commercial	67.7	65.9	62.9	58.2	67.2
	Between Spaulding. and Curson Ave.	Museum	69.9	68.1	65.1	60.4	69.4
	East of Curson Ave.	Commercial	68.3	66.5	63.5	58.8	67.8

Existing Roadway Traffic Noise Levels - Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
Wilshire Boulevard - Ogden Dr EB T Traffic direction: In entry direction					
	Total	826	-		
	Automobiles	809	56		
	Medium trucks	-	-		
	Heavy trucks	17	56	none	Average (of DGAC and PCC)
	Buses	-	-		
	Motorcycles	-	-		
	Auxiliary vehicle	-	-		
Wilshire Boulevard-Spaulding Avenue EB T Traffic direction: In entry direction					
	Total	844	-		
	Automobiles	827	56		
	Medium trucks	-	56		
	Heavy trucks	17	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Wilshire Boulevard-Curson Avenue EB T Traffic direction: In entry direction					
	Total	809	-		
	Automobiles	793	56		
	Medium trucks	-	56		
	Heavy trucks	16	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Wilshire Boulevard-Curson Avenue EB T2 Traffic direction: In entry direction					
	Total	812	-		
	Automobiles	812	56		
	Medium trucks	-	56		
	Heavy trucks	-	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Wilshire Boulevard - Ogden Dr WB T Traffic direction: In entry direction					
	Total	629	-		
	Automobiles	628	56		
	Medium trucks	-	56		
	Heavy trucks	1	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Wilshire Boulevard-Spaulding Avenue WB T Traffic direction: In entry direction					
	Total	627	-		
	Automobiles	614	56		
	Medium trucks	-	56		
	Heavy trucks	13	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Wilshire Boulevard-Curson Avenue WB T Traffic direction: In entry direction					
	Total	619	-		
	Automobiles	607	56		
	Medium trucks	-	56		
	Heavy trucks	12	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Wilshire Boulevard-Curson Avenue WB T1 Traffic direction: In entry direction					
	Total	543	-		
	Automobiles	543	56		
	Medium trucks	-	56		
	Heavy trucks	-	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Ogden Drive-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	39	-		
	Automobiles	38	56		
	Medium trucks	-	56		
	Heavy trucks	1	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Ogden Drive-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	19	-		
	Automobiles	19	56		
	Medium trucks	-	56		
	Heavy trucks	0	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Spaulding Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	99	-		
	Automobiles	97	56		
	Medium trucks	-	56		
	Heavy trucks	-	56	none	Average (of DGAC and PCC)
	Buses	2	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Spaulding Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	130	-		
	Automobiles	127	56		
	Medium trucks	-	56		
	Heavy trucks	3	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		

Existing Roadway Traffic Noise Levels - Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
Curson Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	358	-		
	Automobiles	351	56		
	Medium trucks	-	56		
	Heavy trucks	7	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Curson Avenue-Wilshire Boulevard NB W1 Traffic direction: In entry direction					
	Total	354	-		
	Automobiles	347	56		
	Medium trucks	-	56		
	Heavy trucks	7	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Wilshire Boulevard-Curson Avenue WB T1 1 Traffic direction: In entry direction					
	Total	448	-		
	Automobiles	439	56		
	Medium trucks	-	56		
	Heavy trucks	9	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Curson Avenue-Wilshire Boulevard NB W2 Traffic direction: In entry direction					
	Total	64	-		
	Automobiles	63	56		
	Medium trucks	-	56		
	Heavy trucks	1	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Curson Avenue-Wilshire Boulevard SB Traffic direction: In entry direction					
	Total	361	-		
	Automobiles	354	56		
	Medium trucks	-	56		
	Heavy trucks	7	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Curson Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	233	-		
	Automobiles	228	56		
	Medium trucks	-	56		
	Heavy trucks	5	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
6th Street-Curson Avenue WB T Traffic direction: In entry direction					
	Total	642	-		
	Automobiles	629	56		
	Medium trucks	-	56		
	Heavy trucks	13	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
6th Street-Curson Avenue WB T Traffic direction: In entry direction					
	Total	617	-		
	Automobiles	605	56		
	Medium trucks	-	56		
	Heavy trucks	12	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
6th Street-Ogden Dr WB T Traffic direction: In entry direction					
	Total	1073	-		
	Automobiles	1052	56		
	Medium trucks	-	56		
	Heavy trucks	21	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
6th Street-Ogden Dr EB T Traffic direction: In entry direction					
	Total	956	-		
	Automobiles	937	56		
	Medium trucks	-	56		
	Heavy trucks	19	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
6th Street-Curson Avenue EB T Traffic direction: In entry direction					
	Total	534	-		
	Automobiles	523	56		
	Medium trucks	-	56		
	Heavy trucks	11	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
6th Street-Curson Avenue EB T Traffic direction: In entry direction					
	Total	553	-		
	Automobiles	542	56		
	Medium trucks	-	56		
	Heavy trucks	11	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		

Existing Roadway Traffic Noise Levels - Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
Curson Avenue-6th Street NB W Traffic direction: In entry direction					
	Total	138	-		
	Automobiles	135	56		
	Medium trucks	-	56		
	Heavy trucks	3	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Curson Avenue-6th Street SB W Traffic direction: In entry direction					
	Total	134	-		
	Automobiles	131	56		
	Medium trucks	-	56		
	Heavy trucks	3	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Ogden Dr-6th Street SB W Traffic direction: In entry direction					
	Total	51	-		
	Automobiles	50	56		
	Medium trucks	-	56		
	Heavy trucks	1	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Ogden Dr-6th Street NB W Traffic direction: In entry direction					
	Total	30	-		
	Automobiles	29	56		
	Medium trucks	-	56		
	Heavy trucks	1	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Curson Avenue-Wilshire Boulevard NB Traffic direction: In entry direction					
	Total	418	-		
	Automobiles	410	56		
	Medium trucks	-	56		
	Heavy trucks	8	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-	none	Average (of DGAC and PCC)
Ogden Dr-6th Street EB S Traffic direction: In entry direction					
	Total	199	-		
	Automobiles	195	56		
	Medium trucks	-	56		
	Heavy trucks	4	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Ogden Dr-6th Street NB E Traffic direction: In entry direction					
	Total	145	-		
	Automobiles	142	56		
	Medium trucks	-	56		
	Heavy trucks	3	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		

Roadway Segment		Adjacent Land Use	Leq	Daytime	Evening	Nightime	CNEL
			dBA	dBA	dBA	dBA	dBA
6th Street	Between Fairfax Ave. and Ogden Dr.	Residential	70.3	68.5	65.5	60.8	69.8
	Between Ogden Dr. and Curson Ave.	Residential	68.2	66.4	63.4	58.7	67.7
	East of Curson Ave.	Residential	68.2	66.4	63.4	58.7	67.7
Ogden Drive	North of 6th St.	Residential	61.3	59.5	56.5	51.8	60.8
	South of Wilshire Blvd.	Commercial	61.3	59.5	56.5	51.8	60.8
Spaulding Avenue	South of Wilshire Blvd.	Commercial	63.7	61.9	58.9	54.2	63.2
Curson Avenue	North of 6th St.	Residential	65.3	63.5	60.5	55.8	64.8
	Between 6th St. and Wilshire Blvd.	Residential	68.1	66.3	63.3	58.6	67.6
	South of Wilshire Blvd.	Residential	69.6	67.8	64.8	60.1	69.1
Wilshire Boulevard	Between Fairfax Ave. and Ogden Dr.	Museum	66.5	64.7	61.7	57.0	66.0
	Between Ogden Dr. and Spaulding Ave.	Commercial	65.6	63.8	60.8	56.1	65.1
	Between Spaulding. and Curson Ave.	Museum	67.5	65.7	62.7	58.0	67.0
	East of Curson Ave.	Commercial	66.3	64.5	61.5	56.8	65.8

La Brea Tar Pits Master Plan
Demolition - Construction
Noise Impact Assessment
NSA: ST2

NSA #:	ST2

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Dozer	168	Dozer	0	40	50	82
Excavator	168	Excavator	1	40	50	81
Concrete Saw	168	Concrete Saw	0	20	50	90
Dozer	1206	Dozer	1	40	50	82
Excavator	1206	Excavator	1	40	50	81
Concrete Saw	1206	Concrete Saw	1	20	50	90
Dozer	540	Dozer	1	40	50	82
Excavator	540	Excavator	1	40	50	81
Concrete Saw	540	Concrete Saw	0	20	50	90

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST2

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Dozer		
Excavator	61.5	65.5
Concrete Saw		
Dozer	45.4	49.4
Excavator	44.4	48.4
Concrete Saw	50.4	57.4
Dozer	52.4	56.3
Excavator	51.4	55.3
Concrete Saw		
Total [1]	**62.8**	**65.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST2	68.8	69.6	67.5	72.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Demolition - Construction
Noise Impact Assessment
NSA: ST3

NSA #:	ST3

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
65.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Dozer	370	Dozer	0	40	50	82
Excavator	370	Excavator	1	40	50	81
Concrete Saw	370	Concrete Saw	0	20	50	90
Dozer	735	Dozer	1	40	50	82
Excavator	735	Excavator	1	40	50	81
Concrete Saw	735	Concrete Saw	1	20	50	90
Dozer	330	Dozer	1	40	50	82
Excavator	300	Excavator	1	40	50	81
Concrete Saw	300	Concrete Saw	0	20	50	90

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST3

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Dozer		
Excavator	54.6	58.6
Concrete Saw		
Dozer	49.7	53.7
Excavator	48.7	52.7
Concrete Saw	54.7	61.7
Dozer	56.6	60.6
Excavator	56.5	60.4
Concrete Saw		
Total [1]	**62.2**	**61.7**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST3	67.2	67.0	65.5	70.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Demolition - Construction
Noise Impact Assessment
NSA: ST5

NSA #:	ST5

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.9

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Dozer	245	Dozer	0	40	50	82
Excavator	245	Excavator	1	40	50	81
Concrete Saw	245	Concrete Saw	0	20	50	90
Dozer	422	Dozer	1	40	50	82
Excavator	422	Excavator	1	40	50	81
Concrete Saw	422	Concrete Saw	1	20	50	90
Dozer	1010	Dozer	1	40	50	82
Excavator	1010	Excavator	1	40	50	81
Concrete Saw	1010	Concrete Saw	0	20	50	90

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST5

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Dozer		
Excavator	58.2	62.2
Concrete Saw		
Dozer	54.5	58.5
Excavator	53.5	57.5
Concrete Saw	59.5	66.5
Dozer	46.9	50.9
Excavator	45.9	49.9
Concrete Saw		
Total [1]	**63.3**	**66.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST5	75.2	75.5	74.9	79.9	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Demolition - Construction
Noise Impact Assessment
NSA: ST6

NSA #:	ST6

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
62.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Dozer	137	Dozer	0	40	50	82
Excavator	137	Excavator	1	40	50	81
Concrete Saw	137	Concrete Saw	0	20	50	90
Dozer	265	Dozer	1	40	50	82
Excavator	265	Excavator	1	40	50	81
Concrete Saw	265	Concrete Saw	1	20	50	90
Dozer	1002	Dozer	1	40	50	82
Excavator	1002	Excavator	1	40	50	81
Concrete Saw	1002	Concrete Saw	0	20	50	90

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST6

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Dozer		
Excavator	63.3	67.2
Concrete Saw		
Dozer	58.5	62.5
Excavator	57.5	61.5
Concrete Saw	63.5	70.5
Dozer	47.0	51.0
Excavator	46.0	50.0
Concrete Saw		
Total [1]	**67.6**	**70.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST6	68.8	71.2	62.8	67.8	Yes

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Demolition - Construction
Noise Impact Assessment
NSA: ST7

NSA #:	ST7

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
64.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Dozer	135	Dozer	0	40	50	82
Excavator	135	Excavator	1	40	50	81
Concrete Saw	135	Concrete Saw	0	20	50	90
Dozer	405	Dozer	1	40	50	82
Excavator	405	Excavator	1	40	50	81
Concrete Saw	405	Concrete Saw	1	20	50	90
Dozer	1055	Dozer	1	40	50	82
Excavator	1055	Excavator	1	40	50	81
Concrete Saw	1055	Concrete Saw	0	20	50	90

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST7

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Dozer		
Excavator	63.4	67.4
Concrete Saw		
Dozer	54.9	58.8
Excavator	53.9	57.8
Concrete Saw	59.8	66.8
Dozer	46.5	50.5
Excavator	45.5	49.5
Concrete Saw		
Total [1]	**65.8**	**67.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST7	68.3	69.3	64.8	69.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Demolition - Construction
Noise Impact Assessment
NSA: ST8

NSA #:	ST8

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
69.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Dozer	133	Dozer	0	40	50	82
Excavator	133	Excavator	1	40	50	81
Concrete Saw	133	Concrete Saw	0	20	50	90
Dozer	668	Dozer	1	40	50	82
Excavator	668	Excavator	1	40	50	81
Concrete Saw	668	Concrete Saw	1	20	50	90
Dozer	1108	Dozer	1	40	50	82
Excavator	1108	Excavator	1	40	50	81
Concrete Saw	1108	Concrete Saw	0	20	50	90

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST8

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Dozer		
Excavator	63.5	67.5
Concrete Saw		
Dozer	50.5	54.5
Excavator	49.5	53.5
Concrete Saw	55.5	62.5
Dozer	46.1	50.1
Excavator	45.1	49.1
Concrete Saw		
Total [1]	**64.6**	**67.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST8	70.9	71.8	69.8	74.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Demolition - Construction
Noise Impact Assessment
NSA: ST9

NSA #:	ST9

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.6

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Dozer	116	Dozer	0	40	50	82
Excavator	116	Excavator	1	40	50	81
Concrete Saw	116	Concrete Saw	0	20	50	90
Dozer	678	Dozer	1	40	50	82
Excavator	678	Excavator	1	40	50	81
Concrete Saw	678	Concrete Saw	1	20	50	90
Dozer	815	Dozer	1	40	50	82
Excavator	815	Excavator	1	40	50	81
Concrete Saw	815	Concrete Saw	0	20	50	90

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST9

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Dozer		
Excavator	64.7	68.7
Concrete Saw		
Dozer	50.4	54.4
Excavator	49.4	53.4
Concrete Saw	55.4	62.4
Dozer	48.8	52.8
Excavator	47.8	51.8
Concrete Saw		
Total [1]	**65.6**	**68.7**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST9	75.1	75.6	74.6	79.6	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Demolition - Construction
Noise Impact Assessment
NSA: ST10

NSA #:	ST10

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.1

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Dozer	556	Dozer	0	40	50	82
Excavator	556	Excavator	1	40	50	81
Concrete Saw	556	Concrete Saw	0	20	50	90
Dozer	1223	Dozer	1	40	50	82
Excavator	1223	Excavator	1	40	50	81
Concrete Saw	1223	Concrete Saw	1	20	50	90
Dozer	418	Dozer	1	40	50	82
Excavator	418	Excavator	1	40	50	81
Concrete Saw	418	Concrete Saw	0	20	50	90

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST10

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Dozer		
Excavator	51.1	55.1
Concrete Saw		
Dozer	45.3	49.2
Excavator	44.3	48.2
Concrete Saw	50.2	57.2
Dozer	54.6	58.6
Excavator	53.6	57.6
Concrete Saw		
Total [1]	**59.1**	**58.6**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST10	67.7	67.7	67.1	72.1	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Site Preparation - Construction
Noise Impact Assessment
NSA: ST2

NSA #:	ST2

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Rubber Tired Dozers	168	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	168	Backhoe	1	40	50	78
Rubber Tired Dozers	1206	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	1206	Backhoe	2	40	50	78
Rubber Tired Dozers	540	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	540	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST2

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Dozer	62.5	66.5
Backhoe	58.5	62.5
Dozer	45.4	54.4
Backhoe	44.4	53.4
Dozer	52.4	61.3
Backhoe	48.4	57.3
Total [1]	**64.4**	**66.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST2	69.2	70.0	67.5	72.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Site Preparation - Construction
Noise Impact Assessment
NSA: ST3

NSA #:	ST3

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
65.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Rubber Tired Dozers	95	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	95	Backhoe	1	40	50	78
Rubber Tired Dozers	735	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	735	Backhoe	2	40	50	78
Rubber Tired Dozers	330	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	330	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST3

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Dozer	67.4	71.4
Backhoe	63.4	67.4
Dozer	49.7	58.7
Backhoe	48.7	57.7
Dozer	56.6	65.6
Backhoe	52.6	61.6
Total [1]	**69.3**	**71.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST3	70.8	72.4	65.5	70.5	Yes

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Site Preparation - Construction
Noise Impact Assessment
NSA: ST5

NSA #:	ST5

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.9

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Rubber Tired Dozers	146	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	146	Backhoe	1	40	50	78
Rubber Tired Dozers	422	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	422	Backhoe	2	40	50	78
Rubber Tired Dozers	1010	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	1010	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST5

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Dozer	63.7	67.7
Backhoe	59.7	63.7
Dozer	54.5	63.5
Backhoe	53.5	62.5
Dozer	46.9	55.9
Backhoe	42.9	51.9
Total [1]	**65.9**	**67.7**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST5	75.4	75.7	74.9	79.9	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Site Preparation - Construction
Noise Impact Assessment
NSA: ST6

NSA #:	ST6

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
62.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Rubber Tired Dozers	102	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	102	Backhoe	1	40	50	78
Rubber Tired Dozers	265	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	265	Backhoe	2	40	50	78
Rubber Tired Dozers	1002	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	1002	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST6

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Dozer	66.8	70.8
Backhoe	62.8	66.8
Dozer	58.5	67.5
Backhoe	57.5	66.5
Dozer	47.0	56.0
Backhoe	43.0	52.0
Total [1]	**69.1**	**70.8**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST6	70.0	71.4	62.8	67.8	Yes

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Site Preparation - Construction
Noise Impact Assessment
NSA: ST7

NSA #:	ST7

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
64.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Rubber Tired Dozers	85	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	85	Backhoe	1	40	50	78
Rubber Tired Dozers	405	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	405	Backhoe	2	40	50	78
Rubber Tired Dozers	1055	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	1055	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST7

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Dozer	68.4	72.4
Backhoe	64.4	68.4
Dozer	54.9	63.8
Backhoe	53.9	62.8
Dozer	46.5	55.5
Backhoe	42.5	51.5
Total [1]	**70.1**	**72.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST7	71.2	73.1	64.8	69.8	Yes

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Site Preparation - Construction
Noise Impact Assessment
NSA: ST8

NSA #:	ST8

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
69.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Rubber Tired Dozers	133	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	133	Backhoe	1	40	50	78
Rubber Tired Dozers	668	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	668	Backhoe	2	40	50	78
Rubber Tired Dozers	1108	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	1108	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST8

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Dozer	64.5	68.5
Backhoe	60.5	64.5
Dozer	50.5	59.5
Backhoe	49.5	58.5
Dozer	46.1	55.1
Backhoe	42.1	51.1
Total [1]	**66.3**	**68.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST8	71.4	72.2	69.8	74.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Site Preparation - Construction
Noise Impact Assessment
NSA: ST9

NSA #:	ST9

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.6

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Rubber Tired Dozers	116	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	116	Backhoe	1	40	50	78
Rubber Tired Dozers	678	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	678	Backhoe	2	40	50	78
Rubber Tired Dozers	815	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	815	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST9

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Dozer	65.7	69.7
Backhoe	61.7	65.7
Dozer	50.4	59.4
Backhoe	49.4	58.4
Dozer	48.8	57.8
Backhoe	44.8	53.8
Total [1]	**67.4**	**69.7**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST9	75.4	75.8	74.6	79.6	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Site Preparation - Construction
Noise Impact Assessment
NSA: ST10

NSA #:	ST10

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.1

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Rubber Tired Dozers	683	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	683	Backhoe	1	40	50	78
Rubber Tired Dozers	1223	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	1223	Backhoe	2	40	50	78
Rubber Tired Dozers	418	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	418	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST10

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Dozer	50.3	54.3
Backhoe	46.3	50.3
Dozer	45.3	54.2
Backhoe	44.3	53.2
Dozer	54.6	63.6
Backhoe	50.6	59.6
Total [1]	**57.9**	**63.6**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST10	67.6	68.7	67.1	72.1	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Grading - Construction
Noise Impact Assessment
NSA: ST2

NSA #:	ST2

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Graders	168	Grader	0	40	50	85
Excavators	168	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	168	Backhoe	1	40	50	78
Scrapers	168	Scraper	1	40	50	84
Rubber Tired Dozers	168	Dozer	0	40	50	82
Graders	1206	Grader	1	40	50	85
Excavators	1206	Excavator	0	40	50	81
Tractors/Loaders/Backhoes	1206	Backhoe	0	40	50	78
Scrapers	1206	Scraper	0	40	50	84
Rubber Tired Dozers	1206	Dozer	1	40	50	82
Graders	540	Grader	0	40	50	85
Excavators	540	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	540	Backhoe	1	40	50	78
Scrapers	540	Scraper	1	40	50	84

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Leve Dozer

Sound Levels at NSA ST2

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Grader		
Excavator	61.5	65.5
Backhoe	58.5	62.5
Scraper	64.5	68.5
Dozer		
Grader	48.4	52.4
Excavator		
Backhoe		
Scraper		
Dozer	45.4	49.4
Grader		
Excavator	51.4	55.3
Backhoe	48.4	52.3
Scraper	54.4	58.3
Total [1]	**67.4**	**68.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST2	70.5	71.0	67.5	72.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Grading - Construction
Noise Impact Assessment
NSA: ST3

NSA #:	ST3

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
65.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Graders	95	Grader	0	40	50	85
Excavators	95	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	95	Backhoe	1	40	50	78
Scrapers	95	Scraper	1	40	50	84
Rubber Tired Dozers	95	Dozer	0	40	50	82
Graders	735	Grader	1	40	50	85
Excavators	735	Excavator	0	40	50	81
Tractors/Loaders/Backhoes	735	Backhoe	0	40	50	78
Scrapers	735	Scraper	0	40	50	84
Rubber Tired Dozers	735	Dozer	1	40	50	82
Graders	330	Grader	0	40	50	85
Excavators	330	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	330	Backhoe	1	40	50	78
Scrapers	300	Scraper	1	40	50	84

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Leve Dozer

Sound Levels at NSA ST3

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Grader		
Excavator	66.4	70.4
Backhoe	63.4	67.4
Scraper	69.4	73.4
Dozer		
Grader	52.7	56.7
Excavator		
Backhoe		
Scraper		
Dozer	49.7	53.7
Grader		
Excavator	55.6	59.6
Backhoe	52.6	56.6
Scraper	59.5	63.4
Total [1]	**72.3**	**73.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST3	73.2	74.1	65.5	70.5	Yes

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Grading - Construction
Noise Impact Assessment
NSA: ST5

NSA #:	ST5

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.9

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Graders	146	Grader	0	40	50	85
Excavators	146	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	146	Backhoe	1	40	50	78
Scrapers	146	Scraper	1	40	50	84
Rubber Tired Dozers	146	Dozer	0	40	50	82
Graders	422	Grader	1	40	50	85
Excavators	422	Excavator	0	40	50	81
Tractors/Loaders/Backhoes	422	Backhoe	0	40	50	78
Scrapers	422	Scraper	0	40	50	84
Rubber Tired Dozers	422	Dozer	1	40	50	82
Graders	1010	Grader	0	40	50	85
Excavators	1010	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	1010	Backhoe	1	40	50	78
Scrapers	1010	Scraper	1	40	50	84

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Leve Dozer

Sound Levels at NSA ST5

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Grader		
Excavator	62.7	66.7
Backhoe	59.7	63.7
Scraper	65.7	69.7
Dozer		
Grader	57.5	61.5
Excavator		
Backhoe		
Scraper		
Dozer	54.5	58.5
Grader		
Excavator	45.9	49.9
Backhoe	42.9	46.9
Scraper	48.9	52.9
Total [1]	**68.8**	**69.7**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST5	75.8	76.0	74.9	79.9	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Grading - Construction
Noise Impact Assessment
NSA: ST6

NSA #:	ST6

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
62.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Graders	102	Grader	0	40	50	85
Excavators	102	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	102	Backhoe	1	40	50	78
Scrapers	102	Scraper	1	40	50	84
Rubber Tired Dozers	102	Dozer	0	40	50	82
Graders	265	Grader	1	40	50	85
Excavators	265	Excavator	0	40	50	81
Tractors/Loaders/Backhoes	265	Backhoe	0	40	50	78
Scrapers	265	Scraper	0	40	50	84
Rubber Tired Dozers	265	Dozer	1	40	50	82
Graders	1002	Grader	0	40	50	85
Excavators	1002	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	1002	Backhoe	1	40	50	78
Scrapers	1002	Scraper	1	40	50	84

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Leve Dozer

Sound Levels at NSA ST6

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Grader		
Excavator	65.8	69.8
Backhoe	62.8	66.8
Scraper	68.8	72.8
Dozer		
Grader	61.5	65.5
Excavator		
Backhoe		
Scraper		
Dozer	58.5	62.5
Grader		
Excavator	46.0	50.0
Backhoe	43.0	47.0
Scraper	49.0	53.0
Total [1]	**71.9**	**72.8**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST6	72.4	73.2	62.8	67.8	Yes

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Grading - Construction
Noise Impact Assessment
NSA: ST7

NSA #:	ST7

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
64.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Graders	85	Grader	0	40	50	85
Excavators	85	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	85	Backhoe	1	40	50	78
Scrapers	85	Scraper	1	40	50	84
Rubber Tired Dozers	85	Dozer	0	40	50	82
Graders	405	Grader	1	40	50	85
Excavators	405	Excavator	0	40	50	81
Tractors/Loaders/Backhoes	405	Backhoe	0	40	50	78
Scrapers	405	Scraper	0	40	50	84
Rubber Tired Dozers	405	Dozer	1	40	50	82
Graders	1055	Grader	0	40	50	85
Excavators	1055	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	1055	Backhoe	1	40	50	78
Scrapers	1055	Scraper	1	40	50	84

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Leve Dozer

Sound Levels at NSA ST7

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Grader		
Excavator	67.4	71.4
Backhoe	64.4	68.4
Scraper	70.4	74.4
Dozer		
Grader	57.9	61.8
Excavator		
Backhoe		
Scraper		
Dozer	54.9	58.8
Grader		
Excavator	45.5	49.5
Backhoe	42.5	46.5
Scraper	48.5	52.5
Total [1]	**73.1**	**74.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST7	73.7	74.8	64.8	69.8	Yes

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Grading - Construction
Noise Impact Assessment
NSA: ST8

NSA #:	ST8

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
69.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Graders	133	Grader	0	40	50	85
Excavators	133	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	133	Backhoe	1	40	50	78
Scrapers	133	Scraper	1	40	50	84
Rubber Tired Dozers	133	Dozer	0	40	50	82
Graders	668	Grader	1	40	50	85
Excavators	668	Excavator	0	40	50	81
Tractors/Loaders/Backhoes	668	Backhoe	0	40	50	78
Scrapers	668	Scraper	0	40	50	84
Rubber Tired Dozers	668	Dozer	1	40	50	82
Graders	1108	Grader	0	40	50	85
Excavators	1108	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	1108	Backhoe	1	40	50	78
Scrapers	1108	Scraper	1	40	50	84

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Leve Dozer

Sound Levels at NSA ST8

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Grader		
Excavator	63.5	67.5
Backhoe	60.5	64.5
Scraper	66.5	70.5
Dozer		
Grader	53.5	57.5
Excavator		
Backhoe		
Scraper		
Dozer	50.5	54.5
Grader		
Excavator	45.1	49.1
Backhoe	42.1	46.1
Scraper	48.1	52.1
Total [1]	**69.2**	**70.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST8	72.5	73.2	69.8	74.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Grading - Construction
Noise Impact Assessment
NSA: ST9

NSA #:	ST9

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.6

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Graders	116	Grader	0	40	50	85
Excavators	116	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	116	Backhoe	1	40	50	78
Scrapers	116	Scraper	1	40	50	84
Rubber Tired Dozers	116	Dozer	0	40	50	82
Graders	678	Grader	1	40	50	85
Excavators	678	Excavator	0	40	50	81
Tractors/Loaders/Backhoes	678	Backhoe	0	40	50	78
Scrapers	678	Scraper	0	40	50	84
Rubber Tired Dozers	678	Dozer	1	40	50	82
Graders	815	Grader	0	40	50	85
Excavators	815	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	815	Backhoe	1	40	50	78
Scrapers	815	Scraper	1	40	50	84

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Leve Dozer

Sound Levels at NSA ST9

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Grader		
Excavator	64.7	68.7
Backhoe	61.7	65.7
Scraper	67.7	71.7
Dozer		
Grader	53.4	57.4
Excavator		
Backhoe		
Scraper		
Dozer	50.4	54.4
Grader		
Excavator	47.8	51.8
Backhoe	44.8	48.8
Scraper	50.8	54.8
Total [1]	**70.4**	**71.7**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST9	76.0	76.4	74.6	79.6	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Grading - Construction
Noise Impact Assessment
NSA: ST10

NSA #:	ST10

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.1

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Graders	683	Grader	0	40	50	85
Excavators	683	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	683	Backhoe	1	40	50	78
Scrapers	683	Scraper	1	40	50	84
Rubber Tired Dozers	683	Dozer	0	40	50	82
Graders	1223	Grader	1	40	50	85
Excavators	1223	Excavator	0	40	50	81
Tractors/Loaders/Backhoes	1223	Backhoe	0	40	50	78
Scrapers	1223	Scraper	0	40	50	84
Rubber Tired Dozers	1223	Dozer	1	40	50	82
Graders	418	Grader	0	40	50	85
Excavators	418	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	418	Backhoe	1	40	50	78
Scrapers	418	Scraper	1	40	50	84

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Le Dozer

Sound Levels at NSA ST10

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Grader		
Excavator	49.3	53.3
Backhoe	46.3	50.3
Scraper	52.3	56.3
Dozer		
Grader	48.3	52.2
Excavator		
Backhoe		
Scraper		
Dozer	45.3	49.2
Grader		
Excavator	53.6	57.6
Backhoe	50.6	54.6
Scraper	56.6	60.6
Total [1]	**60.8**	**60.6**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST10	68.0	68.0	67.1	72.1	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Building Construction - Construction
Noise Impact Assessment
NSA: ST2

NSA #:	ST2

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Forklifts	820	Front End Loader	1	40	50	79
Generator Sets	820	Generator	0	50	50	81
Cranes	820	Crane	0	16	50	81
Welders	820	Welder/Torch	0	40	50	74
Tractors/Loaders/Backh	820	Backhoe	1	40	50	78
Forklifts	959	Front End Loader	1	40	50	79
Generator Sets	959	Generator	1	50	50	81
Cranes	959	Crane	1	16	50	81
Welders	959	Welder/Torch	1	40	50	74
Tractors/Loaders/Backh	959	Backhoe	1	40	50	78
Forklifts	540	Front End Loader	1	40	50	79
Generator Sets	540	Generator	0	50	50	81
Cranes	540	Crane	0	16	50	81
Tractors/Loaders/Backh	540	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST2

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Front End Loader	45.7	49.7
Generator		
Crane		
Welder/Torch		
Backhoe	44.7	48.7
Front End Loader	44.4	48.3
Generator	47.3	50.3
Crane	42.4	50.3
Welder/Torch	39.4	43.3
Backhoe	43.4	47.3
Front End Loader	49.4	53.3
Generator		
Crane		
Backhoe	48.4	52.3
Total [1]	**55.4**	**53.3**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST2	67.8	67.7	67.5	72.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Building Construction - Construction
Noise Impact Assessment
NSA: ST3

NSA #:	ST3

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
65.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Forklifts	271	Front End Loader	1	40	50	79
Generator Sets	271	Generator	0	50	50	81
Cranes	271	Crane	0	16	50	81
Welders	271	Welder/Torch	0	40	50	74
Tractors/Loaders/Backh	271	Backhoe	1	40	50	78
Forklifts	735	Front End Loader	1	40	50	79
Generator Sets	735	Generator	1	50	50	81
Cranes	735	Crane	1	16	50	81
Welders	735	Welder/Torch	1	40	50	74
Tractors/Loaders/Backh	735	Backhoe	1	40	50	78
Forklifts	518	Front End Loader	1	40	50	79
Generator Sets	518	Generator	0	50	50	81
Cranes	518	Crane	0	16	50	81
Tractors/Loaders/Backh	518	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST3

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Front End Loader	55.3	59.3
Generator		
Crane		
Welder/Torch		
Backhoe	54.3	58.3
Front End Loader	46.7	50.7
Generator	49.6	52.7
Crane	44.7	52.7
Welder/Torch	41.7	45.7
Backhoe	45.7	49.7
Front End Loader	49.7	53.7
Generator		
Crane		
Backhoe	48.7	52.7
Total [1]	**60.0**	**59.3**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST3	66.6	66.4	65.5	70.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Building Construction - Construction
Noise Impact Assessment
NSA: ST5

NSA #:	ST5

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.9

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Forklifts	683	Front End Loader	1	40	50	79
Generator Sets	683	Generator	0	50	50	81
Cranes	683	Crane	0	16	50	81
Welders	683	Welder/Torch	0	40	50	74
Tractors/Loaders/Backh	683	Backhoe	1	40	50	78
Forklifts	422	Front End Loader	1	40	50	79
Generator Sets	422	Generator	1	50	50	81
Cranes	422	Crane	1	16	50	81
Welders	422	Welder/Torch	1	40	50	74
Tractors/Loaders/Backh	422	Backhoe	1	40	50	78
Forklifts	565	Front End Loader	1	40	50	79
Generator Sets	565	Generator	0	50	50	81
Cranes	565	Crane	0	16	50	81
Tractors/Loaders/Backh	565	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST5

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Front End Loader	47.3	51.3
Generator		
Crane		
Welder/Torch		
Backhoe	46.3	50.3
Front End Loader	51.5	55.5
Generator	54.5	57.5
Crane	49.5	57.5
Welder/Torch	46.5	50.5
Backhoe	50.5	54.5
Front End Loader	49.0	52.9
Generator		
Crane		
Backhoe	48.0	51.9
Total [1]	**59.6**	**57.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST5	75.0	75.0	74.9	79.9	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Building Construction - Construction
Noise Impact Assessment
NSA: ST6

NSA #:	ST6

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
62.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Forklifts	735	Front End Loader	1	40	50	79
Generator Sets	735	Generator	0	50	50	81
Cranes	735	Crane	0	16	50	81
Welders	735	Welder/Torch	0	40	50	74
Tractors/Loaders/Backh	735	Backhoe	1	40	50	78
Forklifts	265	Front End Loader	1	40	50	79
Generator Sets	265	Generator	1	50	50	81
Cranes	265	Crane	1	16	50	81
Welders	265	Welder/Torch	1	40	50	74
Tractors/Loaders/Backh	265	Backhoe	1	40	50	78
Forklifts	518	Front End Loader	1	40	50	79
Generator Sets	518	Generator	0	50	50	81
Cranes	518	Crane	0	16	50	81
Tractors/Loaders/Backh	518	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST6

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Front End Loader	46.7	50.7
Generator		
Crane		
Welder/Torch		
Backhoe	45.7	49.7
Front End Loader	55.5	59.5
Generator	58.5	61.5
Crane	53.6	61.5
Welder/Torch	50.5	54.5
Backhoe	54.5	58.5
Front End Loader	49.7	53.7
Generator		
Crane		
Backhoe	48.7	52.7
Total [1]	**62.9**	**61.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST6	65.9	65.2	62.8	67.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Building Construction - Construction
Noise Impact Assessment
NSA: ST7

NSA #:	ST7

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
64.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Forklifts	890	Front End Loader	1	40	50	79
Generator Sets	890	Generator	0	50	50	81
Cranes	890	Crane	0	16	50	81
Welders	890	Welder/Torch	0	40	50	74
Tractors/Loaders/Backh	890	Backhoe	1	40	50	78
Forklifts	405	Front End Loader	1	40	50	79
Generator Sets	405	Generator	1	50	50	81
Cranes	405	Crane	1	16	50	81
Welders	405	Welder/Torch	1	40	50	74
Tractors/Loaders/Backh	405	Backhoe	1	40	50	78
Forklifts	636	Front End Loader	1	40	50	79
Generator Sets	636	Generator	0	50	50	81
Cranes	636	Crane	0	16	50	81
Tractors/Loaders/Backh	636	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST7

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Front End Loader	45.0	49.0
Generator		
Crane		
Welder/Torch		
Backhoe	44.0	48.0
Front End Loader	51.9	55.8
Generator	54.8	57.8
Crane	49.9	57.8
Welder/Torch	46.9	50.8
Backhoe	50.9	54.8
Front End Loader	47.9	51.9
Generator		
Crane		
Backhoe	46.9	50.9
Total [1]	**59.5**	**57.8**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST7	65.9	65.6	64.8	69.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Building Construction - Construction
Noise Impact Assessment
NSA: ST8

NSA #:	ST8

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
69.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Forklifts	1038	Front End Loader	1	40	50	79
Generator Sets	1038	Generator	0	50	50	81
Cranes	1038	Crane	0	16	50	81
Welders	1038	Welder/Torch	0	40	50	74
Tractors/Loaders/Backh	1038	Backhoe	1	40	50	78
Forklifts	668	Front End Loader	1	40	50	79
Generator Sets	668	Generator	1	50	50	81
Cranes	668	Crane	1	16	50	81
Welders	668	Welder/Torch	1	40	50	74
Tractors/Loaders/Backh	668	Backhoe	1	40	50	78
Forklifts	798	Front End Loader	1	40	50	79
Generator Sets	798	Generator	0	50	50	81
Cranes	798	Crane	0	16	50	81
Tractors/Loaders/Backh	798	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST8

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Front End Loader	43.7	47.7
Generator		
Crane		
Welder/Torch		
Backhoe	42.7	46.7
Front End Loader	47.5	51.5
Generator	50.5	53.5
Crane	45.5	53.5
Welder/Torch	42.5	46.5
Backhoe	46.5	50.5
Front End Loader	46.0	49.9
Generator		
Crane		
Backhoe	45.0	48.9
Total [1]	**55.8**	**53.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST8	70.0	69.9	69.8	74.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Building Construction - Construction
Noise Impact Assessment
NSA: ST9

NSA #:	ST9

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.6

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Forklifts	805	Front End Loader	1	40	50	79
Generator Sets	805	Generator	0	50	50	81
Cranes	805	Crane	0	16	50	81
Welders	805	Welder/Torch	0	40	50	74
Tractors/Loaders/Backh	805	Backhoe	1	40	50	78
Forklifts	678	Front End Loader	1	40	50	79
Generator Sets	678	Generator	1	50	50	81
Cranes	678	Crane	1	16	50	81
Welders	678	Welder/Torch	1	40	50	74
Tractors/Loaders/Backh	678	Backhoe	1	40	50	78
Forklifts	671	Front End Loader	1	40	50	79
Generator Sets	671	Generator	0	50	50	81
Cranes	671	Crane	0	16	50	81
Tractors/Loaders/Backh	671	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST9

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Front End Loader	45.9	49.9
Generator		
Crane		
Welder/Torch		
Backhoe	44.9	48.9
Front End Loader	47.4	51.4
Generator	50.3	53.4
Crane	45.4	53.4
Welder/Torch	42.4	46.4
Backhoe	46.4	50.4
Front End Loader	47.5	51.4
Generator		
Crane		
Backhoe	46.5	50.4
Total [1]	**56.3**	**53.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST9	74.7	74.6	74.6	79.6	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Building Construction - Construction
Noise Impact Assessment
NSA: ST10

NSA #:	ST10

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.1

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Forklifts	660	Front End Loader	1	40	50	79
Generator Sets	660	Generator	0	50	50	81
Cranes	660	Crane	0	16	50	81
Welders	660	Welder/Torch	0	40	50	74
Tractors/Loaders/Backh	660	Backhoe	1	40	50	78
Forklifts	1223	Front End Loader	1	40	50	79
Generator Sets	1223	Generator	1	50	50	81
Cranes	1223	Crane	1	16	50	81
Welders	1223	Welder/Torch	1	40	50	74
Tractors/Loaders/Backh	1223	Backhoe	1	40	50	78
Forklifts	1031	Front End Loader	1	40	50	79
Generator Sets	1031	Generator	0	50	50	81
Cranes	1031	Crane	0	16	50	81
Tractors/Loaders/Backh	1031	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST10

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Front End Loader	47.6	51.6
Generator		
Crane		
Welder/Torch		
Backhoe	46.6	50.6
Front End Loader	42.3	46.2
Generator	45.2	48.2
Crane	40.3	48.2
Welder/Torch	37.3	41.2
Backhoe	41.3	45.2
Front End Loader	43.7	47.7
Generator		
Crane		
Backhoe	42.7	46.7
Total [1]	**53.5**	**51.6**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST10	67.3	67.2	67.1	72.1	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Paving - Construction
Noise Impact Assessment
NSA: ST2

NSA #:	ST2

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Pavers	1094	Paver	2	50	50	77
Roller	1094	Roller	2	20	50	80

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST2

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Paver	45.2	48.2
Roller	44.2	51.2
Total [1]	**47.7**	**51.2**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST2	67.5	67.6	67.5	72.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Paving - Construction
Noise Impact Assessment
NSA: ST3

NSA #:	ST3

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
65.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Pavers	622	Paver	2	50	50	77
Roller	622	Roller	2	20	50	80

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST3

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Paver	50.1	53.1
Roller	49.1	56.1
Total [1]	**52.7**	**56.1**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST3	65.7	66.0	65.5	70.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Paving - Construction
Noise Impact Assessment
NSA: ST5

NSA #:	ST5

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.9

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Pavers	338	Paver	2	50	50	77
Roller	338	Roller	2	20	50	80

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST5

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Paver	55.4	58.4
Roller	54.4	61.4
Total [1]	**57.9**	**61.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST5	75.0	75.1	74.9	79.9	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Paving - Construction
Noise Impact Assessment
NSA: ST6

NSA #:	ST6

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
62.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Pavers	346	Paver	2	50	50	77
Roller	346	Roller	2	20	50	80

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST6

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Paver	55.2	58.2
Roller	54.2	61.2
Total [1]	**57.7**	**61.2**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST6	64.0	65.1	62.8	67.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Paving - Construction
Noise Impact Assessment
NSA: ST7

NSA #:	ST7

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
64.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Pavers	571	Paver	2	50	50	77
Roller	571	Roller	2	20	50	80

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST7

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Paver	50.8	53.9
Roller	49.9	56.9
Total [1]	**53.4**	**56.9**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST7	65.1	65.4	64.8	69.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Paving - Construction
Noise Impact Assessment
NSA: ST8

NSA #:	ST8

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
69.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Pavers	836	Paver	2	50	50	77
Roller	836	Roller	2	20	50	80

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST8

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Paver	47.5	50.5
Roller	46.6	53.5
Total [1]	**50.1**	**53.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST8	69.8	69.9	69.8	74.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Paving - Construction
Noise Impact Assessment
NSA: ST9

NSA #:	ST9

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.6

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Pavers	824	Paver	2	50	50	77
Roller	824	Roller	2	20	50	80

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST9

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Paver	47.7	50.7
Roller	46.7	53.7
Total [1]	**50.2**	**53.7**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST9	74.6	74.6	74.6	79.6	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Paving - Construction
Noise Impact Assessment
NSA: ST10

NSA #:	ST10

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.1

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Pavers	1264	Paver	2	50	50	77
Roller	1264	Roller	2	20	50	80

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST10

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Paver	43.9	47.0
Roller	43.0	50.0
Total [1]	**46.5**	**50.0**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST10	67.1	67.2	67.1	72.1	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Architectural Coating - Construction
Noise Impact Assessment
NSA: ST2

NSA #:	ST2

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Air Compressor	540	Compressor (air)	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST2

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Compressor (air)	48.4	52.3
Total [1]	**48.4**	**52.3**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST2	67.6	67.6	67.5	72.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Architectural Coating - Construction
Noise Impact Assessment
NSA: ST3

NSA #:	ST3

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
65.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Air Compressor	271	Compressor (air)	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST3

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Compressor (air)	54.3	58.3
Total [1]	**54.3**	**58.3**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST3	65.8	66.3	65.5	70.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Architectural Coating - Construction
Noise Impact Assessment
NSA: ST5

NSA #:	ST5

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.9

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Air Compressor	422	Compressor (air)	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST5

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Compressor (air)	50.5	54.5
Total [1]	**50.5**	**54.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST5	74.9	74.9	74.9	79.9	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Architectural Coating - Construction
Noise Impact Assessment
NSA: ST6

NSA #:	ST6

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
62.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Air Compressor	265	Compressor (air)	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST6

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Compressor (air)	54.5	58.5
Total [1]	**54.5**	**58.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST6	63.4	64.2	62.8	67.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Architectural Coating - Construction
Noise Impact Assessment
NSA: ST7

NSA #:	ST7

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
64.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Air Compressor	405	Compressor (air)	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST7

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Compressor (air)	50.9	54.8
Total [1]	**50.9**	**54.8**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST7	65.0	65.2	64.8	69.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Architectural Coating - Construction
Noise Impact Assessment
NSA: ST8

NSA #:	ST8

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
69.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Air Compressor	668	Compressor (air)	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST8

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Compressor (air)	46.5	50.5
Total [1]	**46.5**	**50.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST8	69.8	69.9	69.8	74.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Architectural Coating - Construction
Noise Impact Assessment
NSA: ST9

NSA #:	ST9

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.6

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Air Compressor	671	Compressor (air)	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST9

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Compressor (air)	46.5	50.4
Total [1]	**46.5**	**50.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST9	74.6	74.6	74.6	79.6	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Architectural Coating - Construction
Noise Impact Assessment
NSA: ST10

NSA #:	ST10

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.1

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Air Compressor	660	Compressor (air)	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST10

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Compressor (air)	46.6	50.6
Total [1]	**46.6**	**50.6**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST10	67.1	67.2	67.1	72.1	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Demolition - Mitigated Construction
Noise Impact Assessment
NSA: ST2

NSA #:	ST2

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Dozer	168	Dozer	0	40	50	82
Excavator	168	Excavator	1	40	50	81
Concrete Saw	168	Concrete Saw	0	20	50	90
Dozer	1206	Dozer	1	40	50	82
Excavator	1206	Excavator	1	40	50	81
Concrete Saw	1206	Concrete Saw	1	20	50	90
Dozer	540	Dozer	1	40	50	82
Excavator	540	Excavator	1	40	50	81
Concrete Saw	540	Concrete Saw	0	20	50	90

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST2

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Dozer		
Excavator	51.5	55.5
Concrete Saw		
Dozer	35.4	39.4
Excavator	34.4	38.4
Concrete Saw	40.4	47.4
Dozer	42.4	46.3
Excavator	41.4	45.3
Concrete Saw		
Total [1]	**52.8**	**55.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST2	67.6	67.8	67.5	72.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Demolition - Mitigated Construction
Noise Impact Assessment
NSA: ST3

NSA #:	ST3

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
65.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Dozer	370	Dozer	0	40	50	82
Excavator	370	Excavator	1	40	50	81
Concrete Saw	370	Concrete Saw	0	20	50	90
Dozer	735	Dozer	1	40	50	82
Excavator	735	Excavator	1	40	50	81
Concrete Saw	735	Concrete Saw	1	20	50	90
Dozer	330	Dozer	1	40	50	82
Excavator	300	Excavator	1	40	50	81
Concrete Saw	300	Concrete Saw	0	20	50	90

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST3

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Dozer		
Excavator	44.6	48.6
Concrete Saw		
Dozer	39.7	43.7
Excavator	38.7	42.7
Concrete Saw	44.7	51.7
Dozer	46.6	50.6
Excavator	46.5	50.4
Concrete Saw		
Total [1]	**52.2**	**51.7**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST3	65.7	65.7	65.5	70.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Demolition - Mitigated Construction
Noise Impact Assessment
NSA: ST5

NSA #:	ST5

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.9

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Dozer	245	Dozer	0	40	50	82
Excavator	245	Excavator	1	40	50	81
Concrete Saw	245	Concrete Saw	0	20	50	90
Dozer	422	Dozer	1	40	50	82
Excavator	422	Excavator	1	40	50	81
Concrete Saw	422	Concrete Saw	1	20	50	90
Dozer	1010	Dozer	1	40	50	82
Excavator	1010	Excavator	1	40	50	81
Concrete Saw	1010	Concrete Saw	0	20	50	90

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST5

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Dozer		
Excavator	48.2	52.2
Concrete Saw		
Dozer	44.5	48.5
Excavator	43.5	47.5
Concrete Saw	49.5	56.5
Dozer	36.9	40.9
Excavator	35.9	39.9
Concrete Saw		
Total [1]	**53.3**	**56.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST5	74.9	75.0	74.9	79.9	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Demolition - Mitigated Construction
Noise Impact Assessment
NSA: ST6

NSA #:	ST6

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
62.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Dozer	137	Dozer	0	40	50	82
Excavator	137	Excavator	1	40	50	81
Concrete Saw	137	Concrete Saw	0	20	50	90
Dozer	265	Dozer	1	40	50	82
Excavator	265	Excavator	1	40	50	81
Concrete Saw	265	Concrete Saw	1	20	50	90
Dozer	1002	Dozer	1	40	50	82
Excavator	1002	Excavator	1	40	50	81
Concrete Saw	1002	Concrete Saw	0	20	50	90

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST6

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Dozer		
Excavator	53.3	57.2
Concrete Saw		
Dozer	48.5	52.5
Excavator	47.5	51.5
Concrete Saw	53.5	60.5
Dozer	37.0	41.0
Excavator	36.0	40.0
Concrete Saw		
Total [1]	**57.6**	**60.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST6	63.9	64.8	62.8	67.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Demolition - Mitigated Construction
Noise Impact Assessment
NSA: ST7

NSA #:	ST7

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
64.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Dozer	135	Dozer	0	40	50	82
Excavator	135	Excavator	1	40	50	81
Concrete Saw	135	Concrete Saw	0	20	50	90
Dozer	405	Dozer	1	40	50	82
Excavator	405	Excavator	1	40	50	81
Concrete Saw	405	Concrete Saw	1	20	50	90
Dozer	1055	Dozer	1	40	50	82
Excavator	1055	Excavator	1	40	50	81
Concrete Saw	1055	Concrete Saw	0	20	50	90

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST7

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Dozer		
Excavator	53.4	57.4
Concrete Saw		
Dozer	44.9	48.8
Excavator	43.9	47.8
Concrete Saw	49.8	56.8
Dozer	36.5	40.5
Excavator	35.5	39.5
Concrete Saw		
Total [1]	**55.8**	**57.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST7	65.3	65.5	64.8	69.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Demolition - Mitigated Construction
Noise Impact Assessment
NSA: ST8

NSA #:	ST8

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
69.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Dozer	133	Dozer	0	40	50	82
Excavator	133	Excavator	1	40	50	81
Concrete Saw	133	Concrete Saw	0	20	50	90
Dozer	668	Dozer	1	40	50	82
Excavator	668	Excavator	1	40	50	81
Concrete Saw	668	Concrete Saw	1	20	50	90
Dozer	1108	Dozer	1	40	50	82
Excavator	1108	Excavator	1	40	50	81
Concrete Saw	1108	Concrete Saw	0	20	50	90

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST8

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Dozer		
Excavator	63.5	67.5
Concrete Saw		
Dozer	50.5	54.5
Excavator	49.5	53.5
Concrete Saw	55.5	62.5
Dozer	46.1	50.1
Excavator	45.1	49.1
Concrete Saw		
Total [1]	**64.6**	**67.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST8	70.9	71.8	69.8	74.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Demolition - Mitigated Construction
Noise Impact Assessment
NSA: ST9

NSA #:	ST9

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.6

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Dozer	116	Dozer	0	40	50	82
Excavator	116	Excavator	1	40	50	81
Concrete Saw	116	Concrete Saw	0	20	50	90
Dozer	678	Dozer	1	40	50	82
Excavator	678	Excavator	1	40	50	81
Concrete Saw	678	Concrete Saw	1	20	50	90
Dozer	815	Dozer	1	40	50	82
Excavator	815	Excavator	1	40	50	81
Concrete Saw	815	Concrete Saw	0	20	50	90

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST9

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Dozer		
Excavator	64.7	68.7
Concrete Saw		
Dozer	50.4	54.4
Excavator	49.4	53.4
Concrete Saw	55.4	62.4
Dozer	48.8	52.8
Excavator	47.8	51.8
Concrete Saw		
Total [1]	**65.6**	**68.7**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST9	75.1	75.6	74.6	79.6	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Demolition - Mitigated Construction
Noise Impact Assessment
NSA: ST10

NSA #:	ST10

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.1

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Dozer	556	Dozer	0	40	50	82
Excavator	556	Excavator	1	40	50	81
Concrete Saw	556	Concrete Saw	0	20	50	90
Dozer	1223	Dozer	1	40	50	82
Excavator	1223	Excavator	1	40	50	81
Concrete Saw	1223	Concrete Saw	1	20	50	90
Dozer	418	Dozer	1	40	50	82
Excavator	418	Excavator	1	40	50	81
Concrete Saw	418	Concrete Saw	0	20	50	90

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST10

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Dozer		
Excavator	51.1	55.1
Concrete Saw		
Dozer	45.3	49.2
Excavator	44.3	48.2
Concrete Saw	50.2	57.2
Dozer	54.6	58.6
Excavator	53.6	57.6
Concrete Saw		
Total [1]	**59.1**	**58.6**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST10	67.7	67.7	67.1	72.1	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Site Preparation - Mitigated Construction
Noise Impact Assessment
NSA: ST2

NSA #:	ST2

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Rubber Tired Dozers	168	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	168	Backhoe	1	40	50	78
Rubber Tired Dozers	1206	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	1206	Backhoe	2	40	50	78
Rubber Tired Dozers	540	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	540	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST2

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Dozer	52.5	56.5
Backhoe	48.5	52.5
Dozer	35.4	39.4
Backhoe	34.4	38.4
Dozer	42.4	46.3
Backhoe	38.4	42.3
Total [1]	**54.4**	**56.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST2	67.7	67.8	67.5	72.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Site Preparation - Mitigated Construction
Noise Impact Assessment
NSA: ST3

NSA #:	ST3

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
65.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Rubber Tired Dozers	95	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	95	Backhoe	1	40	50	78
Rubber Tired Dozers	735	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	735	Backhoe	2	40	50	78
Rubber Tired Dozers	330	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	330	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST3

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Dozer	57.4	61.4
Backhoe	53.4	57.4
Dozer	39.7	43.7
Backhoe	38.7	42.7
Dozer	46.6	50.6
Backhoe	42.6	46.6
Total [1]	**59.3**	**61.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST3	66.4	66.9	65.5	70.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Site Preparation - Mitigated Construction
Noise Impact Assessment
NSA: ST5

NSA #:	ST5

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.9

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Rubber Tired Dozers	146	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	146	Backhoe	1	40	50	78
Rubber Tired Dozers	422	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	422	Backhoe	2	40	50	78
Rubber Tired Dozers	1010	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	1010	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST5

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Dozer	53.7	57.7
Backhoe	49.7	53.7
Dozer	44.5	48.5
Backhoe	43.5	47.5
Dozer	36.9	40.9
Backhoe	32.9	36.9
Total [1]	**55.9**	**57.7**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST5	75.0	75.0	74.9	79.9	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Site Preparation - Mitigated Construction
Noise Impact Assessment
NSA: ST6

NSA #:	ST6

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
62.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Rubber Tired Dozers	102	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	102	Backhoe	1	40	50	78
Rubber Tired Dozers	265	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	265	Backhoe	2	40	50	78
Rubber Tired Dozers	1002	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	1002	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST6

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Dozer	56.8	60.8
Backhoe	52.8	56.8
Dozer	48.5	52.5
Backhoe	47.5	51.5
Dozer	37.0	41.0
Backhoe	33.0	37.0
Total [1]	**59.1**	**60.8**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST6	64.3	64.9	62.8	67.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Site Preparation - Mitigated Construction
Noise Impact Assessment
NSA: ST7

NSA #:	ST7

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
64.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Rubber Tired Dozers	85	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	85	Backhoe	1	40	50	78
Rubber Tired Dozers	405	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	405	Backhoe	2	40	50	78
Rubber Tired Dozers	1055	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	1055	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST7

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Dozer	58.4	62.4
Backhoe	54.4	58.4
Dozer	44.9	48.8
Backhoe	43.9	47.8
Dozer	36.5	40.5
Backhoe	32.5	36.5
Total [1]	**60.1**	**62.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST7	66.1	66.8	64.8	69.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Site Preparation - Mitigated Construction
Noise Impact Assessment
NSA: ST8

NSA #:	ST8

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
69.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Rubber Tired Dozers	133	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	133	Backhoe	1	40	50	78
Rubber Tired Dozers	668	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	668	Backhoe	2	40	50	78
Rubber Tired Dozers	1108	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	1108	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST8

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Dozer	64.5	68.5
Backhoe	60.5	54.5
Dozer	50.5	44.5
Backhoe	49.5	43.5
Dozer	46.1	40.1
Backhoe	42.1	36.1
Total [1]	**66.3**	**68.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST8	71.4	72.2	69.8	74.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Site Preparation - Mitigated Construction
Noise Impact Assessment
NSA: ST9

NSA #:	ST9

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.6

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Rubber Tired Dozers	116	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	116	Backhoe	1	40	50	78
Rubber Tired Dozers	678	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	678	Backhoe	2	40	50	78
Rubber Tired Dozers	815	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	815	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST9

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Dozer	65.7	69.7
Backhoe	61.7	55.7
Dozer	50.4	44.4
Backhoe	49.4	43.4
Dozer	48.8	42.8
Backhoe	44.8	38.8
Total [1]	**67.4**	**69.7**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST9	75.4	75.8	74.6	79.6	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Site Preparation - Mitigated Construction
Noise Impact Assessment
NSA: ST10

NSA #:	ST10

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.1

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Rubber Tired Dozers	683	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	683	Backhoe	1	40	50	78
Rubber Tired Dozers	1223	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	1223	Backhoe	2	40	50	78
Rubber Tired Dozers	418	Dozer	1	40	50	82
Tractors/Loaders/Backhoes	418	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST10

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Dozer	50.3	54.3
Backhoe	46.3	40.3
Dozer	45.3	39.2
Backhoe	44.3	38.2
Dozer	54.6	48.6
Backhoe	50.6	44.6
Total [1]	**57.9**	**54.3**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST10	67.6	67.3	67.1	72.1	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Grading - Mitigated Construction
Noise Impact Assessment
NSA: ST2

NSA #:	ST2

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Graders	168	Grader	0	40	50	85
Excavators	168	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	168	Backhoe	1	40	50	78
Scrapers	168	Scraper	1	40	50	84
Rubber Tired Dozers	168	Dozer	0	40	50	82
Graders	1206	Grader	1	40	50	85
Excavators	1206	Excavator	0	40	50	81
Tractors/Loaders/Backhoes	1206	Backhoe	0	40	50	78
Scrapers	1206	Scraper	0	40	50	84
Rubber Tired Dozers	1206	Dozer	1	40	50	82
Graders	540	Grader	0	40	50	85
Excavators	540	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	540	Backhoe	1	40	50	78
Scrapers	540	Scraper	1	40	50	84

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Leve Dozer

Sound Levels at NSA ST2

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Grader		
Excavator	51.5	55.5
Backhoe	48.5	52.5
Scraper	54.5	58.5
Dozer		
Grader	38.4	42.4
Excavator		
Backhoe		
Scraper		
Dozer	35.4	39.4
Grader		
Excavator	41.4	45.3
Backhoe	38.4	42.3
Scraper	44.4	48.3
Total [1]	**57.4**	**58.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST2	67.9	68.0	67.5	72.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Grading - Mitigated Construction
Noise Impact Assessment
NSA: ST3

NSA #:	ST3

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
65.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Graders	95	Grader	0	40	50	85
Excavators	95	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	95	Backhoe	1	40	50	78
Scrapers	95	Scraper	1	40	50	84
Rubber Tired Dozers	95	Dozer	0	40	50	82
Graders	735	Grader	1	40	50	85
Excavators	735	Excavator	0	40	50	81
Tractors/Loaders/Backhoes	735	Backhoe	0	40	50	78
Scrapers	735	Scraper	0	40	50	84
Rubber Tired Dozers	735	Dozer	1	40	50	82
Graders	330	Grader	0	40	50	85
Excavators	330	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	330	Backhoe	1	40	50	78
Scrapers	300	Scraper	1	40	50	84

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Leve Dozer

Sound Levels at NSA ST3

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Grader		
Excavator	56.4	60.4
Backhoe	53.4	57.4
Scraper	59.4	63.4
Dozer		
Grader	42.7	46.7
Excavator		
Backhoe		
Scraper		
Dozer	39.7	43.7
Grader		
Excavator	45.6	49.6
Backhoe	42.6	46.6
Scraper	49.5	53.4
Total [1]	**62.3**	**63.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST3	67.2	67.6	65.5	70.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Grading - Mitigated Construction
Noise Impact Assessment
NSA: ST5

NSA #:	ST5

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.9

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Graders	146	Grader	0	40	50	85
Excavators	146	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	146	Backhoe	1	40	50	78
Scrapers	146	Scraper	1	40	50	84
Rubber Tired Dozers	146	Dozer	0	40	50	82
Graders	422	Grader	1	40	50	85
Excavators	422	Excavator	0	40	50	81
Tractors/Loaders/Backhoes	422	Backhoe	0	40	50	78
Scrapers	422	Scraper	0	40	50	84
Rubber Tired Dozers	422	Dozer	1	40	50	82
Graders	1010	Grader	0	40	50	85
Excavators	1010	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	1010	Backhoe	1	40	50	78
Scrapers	1010	Scraper	1	40	50	84

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Leve Dozer

Sound Levels at NSA ST5

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Grader		
Excavator	52.7	56.7
Backhoe	49.7	53.7
Scraper	55.7	59.7
Dozer		
Grader	47.5	51.5
Excavator		
Backhoe		
Scraper		
Dozer	44.5	48.5
Grader		
Excavator	35.9	39.9
Backhoe	32.9	36.9
Scraper	38.9	42.9
Total [1]	**58.8**	**59.7**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST5	75.0	75.0	74.9	79.9	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Grading - Mitigated Construction
Noise Impact Assessment
NSA: ST6

NSA #:	ST6

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
62.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Graders	102	Grader	0	40	50	85
Excavators	102	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	102	Backhoe	1	40	50	78
Scrapers	102	Scraper	1	40	50	84
Rubber Tired Dozers	102	Dozer	0	40	50	82
Graders	265	Grader	1	40	50	85
Excavators	265	Excavator	0	40	50	81
Tractors/Loaders/Backhoes	265	Backhoe	0	40	50	78
Scrapers	265	Scraper	0	40	50	84
Rubber Tired Dozers	265	Dozer	1	40	50	82
Graders	1002	Grader	0	40	50	85
Excavators	1002	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	1002	Backhoe	1	40	50	78
Scrapers	1002	Scraper	1	40	50	84

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Leve Dozer

Sound Levels at NSA ST6

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Grader		
Excavator	55.8	59.8
Backhoe	52.8	56.8
Scraper	58.8	62.8
Dozer		
Grader	51.5	55.5
Excavator		
Backhoe		
Scraper		
Dozer	48.5	52.5
Grader		
Excavator	36.0	40.0
Backhoe	33.0	37.0
Scraper	39.0	43.0
Total [1]	**61.9**	**62.8**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST6	65.4	65.8	62.8	67.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime

La Brea Tar Pits Master Plan
Grading - Mitigated Construction
Noise Impact Assessment
NSA: ST7

NSA #:	ST7

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
64.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Graders	85	Grader	0	40	50	85
Excavators	85	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	85	Backhoe	1	40	50	78
Scrapers	85	Scraper	1	40	50	84
Rubber Tired Dozers	85	Dozer	0	40	50	82
Graders	405	Grader	1	40	50	85
Excavators	405	Excavator	0	40	50	81
Tractors/Loaders/Backhoes	405	Backhoe	0	40	50	78
Scrapers	405	Scraper	0	40	50	84
Rubber Tired Dozers	405	Dozer	1	40	50	82
Graders	1055	Grader	0	40	50	85
Excavators	1055	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	1055	Backhoe	1	40	50	78
Scrapers	1055	Scraper	1	40	50	84

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Leve Dozer

Sound Levels at NSA ST7

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Grader		
Excavator	57.4	61.4
Backhoe	54.4	58.4
Scraper	60.4	64.4
Dozer		
Grader	47.9	51.8
Excavator		
Backhoe		
Scraper		
Dozer	44.9	48.8
Grader		
Excavator	35.5	39.5
Backhoe	32.5	36.5
Scraper	38.5	42.5
Total [1]	**63.1**	**64.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST7	67.0	67.6	64.8	69.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime

La Brea Tar Pits Master Plan
Grading - Mitigated Construction
Noise Impact Assessment
NSA: ST8

NSA #:	ST8

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
69.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Graders	133	Grader	0	40	50	85
Excavators	133	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	133	Backhoe	1	40	50	78
Scrapers	133	Scraper	1	40	50	84
Rubber Tired Dozers	133	Dozer	0	40	50	82
Graders	668	Grader	1	40	50	85
Excavators	668	Excavator	0	40	50	81
Tractors/Loaders/Backhoes	668	Backhoe	0	40	50	78
Scrapers	668	Scraper	0	40	50	84
Rubber Tired Dozers	668	Dozer	1	40	50	82
Graders	1108	Grader	0	40	50	85
Excavators	1108	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	1108	Backhoe	1	40	50	78
Scrapers	1108	Scraper	1	40	50	84

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Leve Dozer

Sound Levels at NSA ST8

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Grader		
Excavator	63.5	67.5
Backhoe	60.5	64.5
Scraper	66.5	70.5
Dozer		
Grader	53.5	57.5
Excavator		
Backhoe		
Scraper		
Dozer	50.5	54.5
Grader		
Excavator	45.1	49.1
Backhoe	42.1	46.1
Scraper	48.1	52.1
Total [1]	**69.2**	**70.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST8	72.5	73.2	69.8	74.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime

La Brea Tar Pits Master Plan
Grading - Mitigated Construction
Noise Impact Assessment
NSA: ST9

NSA #:	ST9

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.6

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Graders	116	Grader	0	40	50	85
Excavators	116	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	116	Backhoe	1	40	50	78
Scrapers	116	Scraper	1	40	50	84
Rubber Tired Dozers	116	Dozer	0	40	50	82
Graders	678	Grader	1	40	50	85
Excavators	678	Excavator	0	40	50	81
Tractors/Loaders/Backhoes	678	Backhoe	0	40	50	78
Scrapers	678	Scraper	0	40	50	84
Rubber Tired Dozers	678	Dozer	1	40	50	82
Graders	815	Grader	0	40	50	85
Excavators	815	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	815	Backhoe	1	40	50	78
Scrapers	815	Scraper	1	40	50	84

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Leve Dozer

Sound Levels at NSA ST9

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Grader		
Excavator	64.7	68.7
Backhoe	61.7	65.7
Scraper	67.7	71.7
Dozer		
Grader	53.4	57.4
Excavator		
Backhoe		
Scraper		
Dozer	50.4	54.4
Grader		
Excavator	47.8	51.8
Backhoe	44.8	48.8
Scraper	50.8	54.8
Total [1]	**70.4**	**71.7**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST9	76.0	76.4	74.6	79.6	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime

La Brea Tar Pits Master Plan
Grading - Mitigated Construction
Noise Impact Assessment
NSA: ST10

NSA #:	ST10

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.1

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Graders	683	Grader	0	40	50	85
Excavators	683	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	683	Backhoe	1	40	50	78
Scrapers	683	Scraper	1	40	50	84
Rubber Tired Dozers	683	Dozer	0	40	50	82
Graders	1223	Grader	1	40	50	85
Excavators	1223	Excavator	0	40	50	81
Tractors/Loaders/Backhoes	1223	Backhoe	0	40	50	78
Scrapers	1223	Scraper	0	40	50	84
Rubber Tired Dozers	1223	Dozer	1	40	50	82
Graders	418	Grader	0	40	50	85
Excavators	418	Excavator	1	40	50	81
Tractors/Loaders/Backhoes	418	Backhoe	1	40	50	78
Scrapers	418	Scraper	1	40	50	84

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Le Dozer

Sound Levels at NSA ST10

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Grader		
Excavator	49.3	53.3
Backhoe	46.3	50.3
Scraper	52.3	56.3
Dozer		
Grader	48.3	52.2
Excavator		
Backhoe		
Scraper		
Dozer	45.3	49.2
Grader		
Excavator	53.6	57.6
Backhoe	50.6	54.6
Scraper	56.6	60.6
Total [1]	**60.8**	**60.6**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST10	68.0	68.0	67.1	72.1	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Building Construction - Mitigated Construction
Noise Impact Assessment
NSA: ST2

NSA #:	ST2

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Forklifts	820	Front End Loader	1	40	50	79
Generator Sets	820	Generator	0	50	50	81
Cranes	820	Crane	0	16	50	81
Welders	820	Welder/Torch	0	40	50	74
Tractors/Loaders/Backh	820	Backhoe	1	40	50	78
Forklifts	959	Front End Loader	1	40	50	79
Generator Sets	959	Generator	1	50	50	81
Cranes	959	Crane	1	16	50	81
Welders	959	Welder/Torch	1	40	50	74
Tractors/Loaders/Backh	959	Backhoe	1	40	50	78
Forklifts	540	Front End Loader	1	40	50	79
Generator Sets	540	Generator	0	50	50	81
Cranes	540	Crane	0	16	50	81
Tractors/Loaders/Backh	540	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST2

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Front End Loader	35.7	39.7
Generator		
Crane		
Welder/Torch		
Backhoe	34.7	38.7
Front End Loader	34.4	38.3
Generator	37.3	40.3
Crane	32.4	40.3
Welder/Torch	29.4	33.3
Backhoe	33.4	37.3
Front End Loader	39.4	43.3
Generator		
Crane		
Backhoe	38.4	42.3
Total [1]	**45.4**	**43.3**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST2	67.5	67.5	67.5	72.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Building Construction - Mitigated Construction
Noise Impact Assessment
NSA: ST3

NSA #:	ST3

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
65.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Forklifts	271	Front End Loader	1	40	50	79
Generator Sets	271	Generator	0	50	50	81
Cranes	271	Crane	0	16	50	81
Welders	271	Welder/Torch	0	40	50	74
Tractors/Loaders/Backh	271	Backhoe	1	40	50	78
Forklifts	735	Front End Loader	1	40	50	79
Generator Sets	735	Generator	1	50	50	81
Cranes	735	Crane	1	16	50	81
Welders	735	Welder/Torch	1	40	50	74
Tractors/Loaders/Backh	735	Backhoe	1	40	50	78
Forklifts	518	Front End Loader	1	40	50	79
Generator Sets	518	Generator	0	50	50	81
Cranes	518	Crane	0	16	50	81
Tractors/Loaders/Backh	518	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST3

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Front End Loader	45.3	49.3
Generator		
Crane		
Welder/Torch		
Backhoe	44.3	48.3
Front End Loader	36.7	40.7
Generator	39.6	42.7
Crane	34.7	42.7
Welder/Torch	31.7	35.7
Backhoe	35.7	39.7
Front End Loader	39.7	43.7
Generator		
Crane		
Backhoe	38.7	42.7
Total [1]	**50.0**	**49.3**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST3	65.6	65.6	65.5	70.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Building Construction - Mitigated Construction
Noise Impact Assessment
NSA: ST5

NSA #:	ST5

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.9

Sources

Description	Distance to Receptor feet	Modeled As	Quantity	Acoustical Usage Factor[1] %/hr.	Noise Level Reference Distance [1] (feet)	Sound Pressure Level @ (dBA)
Forklifts	683	Front End Loader	1	40	50	79
Generator Sets	683	Generator	0	50	50	81
Cranes	683	Crane	0	16	50	81
Welders	683	Welder/Torch	0	40	50	74
Tractors/Loaders/Backh	683	Backhoe	1	40	50	78
Forklifts	422	Front End Loader	1	40	50	79
Generator Sets	422	Generator	1	50	50	81
Cranes	422	Crane	1	16	50	81
Welders	422	Welder/Torch	1	40	50	74
Tractors/Loaders/Backh	422	Backhoe	1	40	50	78
Forklifts	565	Front End Loader	1	40	50	79
Generator Sets	565	Generator	0	50	50	81
Cranes	565	Crane	0	16	50	81
Tractors/Loaders/Backh	565	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST5

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Front End Loader	37.3	41.3
Generator		
Crane		
Welder/Torch		
Backhoe	36.3	40.3
Front End Loader	41.5	45.5
Generator	44.5	47.5
Crane	39.5	47.5
Welder/Torch	36.5	40.5
Backhoe	40.5	44.5
Front End Loader	39.0	42.9
Generator		
Crane		
Backhoe	38.0	41.9
Total [1]	**49.6**	**47.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq (dBA)	Construction, Lmax [1] (dBA)	Measured Ambient Noise Level, Leq (dBA)	Significance Threshold, Leq [2] (dBA)	Significant Impact?
ST5	74.9	74.9	74.9	79.9	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Building Construction - Mitigated Construction
Noise Impact Assessment
NSA: ST6

NSA #:	ST6

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
62.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Forklifts	735	Front End Loader	1	40	50	79
Generator Sets	735	Generator	0	50	50	81
Cranes	735	Crane	0	16	50	81
Welders	735	Welder/Torch	0	40	50	74
Tractors/Loaders/Backh	735	Backhoe	1	40	50	78
Forklifts	265	Front End Loader	1	40	50	79
Generator Sets	265	Generator	1	50	50	81
Cranes	265	Crane	1	16	50	81
Welders	265	Welder/Torch	1	40	50	74
Tractors/Loaders/Backh	265	Backhoe	1	40	50	78
Forklifts	518	Front End Loader	1	40	50	79
Generator Sets	518	Generator	0	50	50	81
Cranes	518	Crane	0	16	50	81
Tractors/Loaders/Backh	518	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST6

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Front End Loader	36.7	40.7
Generator		
Crane		
Welder/Torch		
Backhoe	35.7	39.7
Front End Loader	45.5	49.5
Generator	48.5	51.5
Crane	43.6	51.5
Welder/Torch	40.5	44.5
Backhoe	44.5	48.5
Front End Loader	39.7	43.7
Generator		
Crane		
Backhoe	38.7	42.7
Total [1]	**52.9**	**51.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST6	63.2	63.1	62.8	67.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Building Construction - Mitigated Construction
Noise Impact Assessment
NSA: ST7

NSA #:	ST7

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
64.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Forklifts	890	Front End Loader	1	40	50	79
Generator Sets	890	Generator	0	50	50	81
Cranes	890	Crane	0	16	50	81
Welders	890	Welder/Torch	0	40	50	74
Tractors/Loaders/Backh	890	Backhoe	1	40	50	78
Forklifts	405	Front End Loader	1	40	50	79
Generator Sets	405	Generator	1	50	50	81
Cranes	405	Crane	1	16	50	81
Welders	405	Welder/Torch	1	40	50	74
Tractors/Loaders/Backh	405	Backhoe	1	40	50	78
Forklifts	636	Front End Loader	1	40	50	79
Generator Sets	636	Generator	0	50	50	81
Cranes	636	Crane	0	16	50	81
Tractors/Loaders/Backh	636	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST7

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Front End Loader	35.0	39.0
Generator		
Crane		
Welder/Torch		
Backhoe	34.0	38.0
Front End Loader	41.9	45.8
Generator	44.8	47.8
Crane	39.9	47.8
Welder/Torch	36.9	40.8
Backhoe	40.9	44.8
Front End Loader	37.9	41.9
Generator		
Crane		
Backhoe	36.9	40.9
Total [1]	**49.5**	**47.8**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST7	64.9	64.9	64.8	69.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Building Construction - Mitigated Construction
Noise Impact Assessment
NSA: ST8

NSA #:	ST8

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
69.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Forklifts	1038	Front End Loader	1	40	50	79
Generator Sets	1038	Generator	0	50	50	81
Cranes	1038	Crane	0	16	50	81
Welders	1038	Welder/Torch	0	40	50	74
Tractors/Loaders/Backh	1038	Backhoe	1	40	50	78
Forklifts	668	Front End Loader	1	40	50	79
Generator Sets	668	Generator	1	50	50	81
Cranes	668	Crane	1	16	50	81
Welders	668	Welder/Torch	1	40	50	74
Tractors/Loaders/Backh	668	Backhoe	1	40	50	78
Forklifts	798	Front End Loader	1	40	50	79
Generator Sets	798	Generator	0	50	50	81
Cranes	798	Crane	0	16	50	81
Tractors/Loaders/Backh	798	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST8

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Front End Loader	43.7	47.7
Generator		
Crane		
Welder/Torch		
Backhoe	42.7	46.7
Front End Loader	47.5	51.5
Generator	50.5	53.5
Crane	45.5	53.5
Welder/Torch	42.5	46.5
Backhoe	46.5	50.5
Front End Loader	46.0	49.9
Generator		
Crane		
Backhoe	45.0	48.9
Total [1]	**55.8**	**53.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST8	70.0	69.9	69.8	74.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Building Construction - Mitigated Construction
Noise Impact Assessment
NSA: ST9

NSA #:	ST9

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.6

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Forklifts	805	Front End Loader	1	40	50	79
Generator Sets	805	Generator	0	50	50	81
Cranes	805	Crane	0	16	50	81
Welders	805	Welder/Torch	0	40	50	74
Tractors/Loaders/Backh	805	Backhoe	1	40	50	78
Forklifts	678	Front End Loader	1	40	50	79
Generator Sets	678	Generator	1	50	50	81
Cranes	678	Crane	1	16	50	81
Welders	678	Welder/Torch	1	40	50	74
Tractors/Loaders/Backh	678	Backhoe	1	40	50	78
Forklifts	671	Front End Loader	1	40	50	79
Generator Sets	671	Generator	0	50	50	81
Cranes	671	Crane	0	16	50	81
Tractors/Loaders/Backh	671	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST9

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Front End Loader	45.9	49.9
Generator		
Crane		
Welder/Torch		
Backhoe	44.9	48.9
Front End Loader	47.4	51.4
Generator	50.3	53.4
Crane	45.4	53.4
Welder/Torch	42.4	46.4
Backhoe	46.4	50.4
Front End Loader	47.5	51.4
Generator		
Crane		
Backhoe	46.5	50.4
Total [1]	**56.3**	**53.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST9	74.7	74.6	74.6	79.6	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Building Construction - Mitigated Construction
Noise Impact Assessment
NSA: ST10

NSA #:	ST10

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.1

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Forklifts	660	Front End Loader	1	40	50	79
Generator Sets	660	Generator	0	50	50	81
Cranes	660	Crane	0	16	50	81
Welders	660	Welder/Torch	0	40	50	74
Tractors/Loaders/Backh	660	Backhoe	1	40	50	78
Forklifts	1223	Front End Loader	1	40	50	79
Generator Sets	1223	Generator	1	50	50	81
Cranes	1223	Crane	1	16	50	81
Welders	1223	Welder/Torch	1	40	50	74
Tractors/Loaders/Backh	1223	Backhoe	1	40	50	78
Forklifts	1031	Front End Loader	1	40	50	79
Generator Sets	1031	Generator	0	50	50	81
Cranes	1031	Crane	0	16	50	81
Tractors/Loaders/Backh	1031	Backhoe	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST10

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Front End Loader	47.6	51.6
Generator		
Crane		
Welder/Torch		
Backhoe	46.6	50.6
Front End Loader	42.3	46.2
Generator	45.2	48.2
Crane	40.3	48.2
Welder/Torch	37.3	41.2
Backhoe	41.3	45.2
Front End Loader	43.7	47.7
Generator		
Crane		
Backhoe	42.7	46.7
Total [1]	**53.5**	**51.6**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST10	67.3	67.2	67.1	72.1	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Paving - Mitigated Construction
Noise Impact Assessment
NSA: ST2

NSA #:	ST2

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Pavers	1094	Paver	2	50	50	77
Roller	1094	Roller	2	20	50	80

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST2

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Paver	35.2	38.2
Roller	34.2	41.2
Total [1]	**37.8**	**41.2**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST2	67.5	67.5	67.5	72.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Paving - Mitigated Construction
Noise Impact Assessment
NSA: ST3

NSA #:	ST3

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
65.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Pavers	622	Paver	2	50	50	77
Roller	622	Roller	2	20	50	80

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST3

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Paver	40.1	43.1
Roller	39.1	46.1
Total [1]	**42.7**	**46.1**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST3	65.5	65.5	65.5	70.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Paving - Mitigated Construction
Noise Impact Assessment
NSA: ST5

NSA #:	ST5

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.9

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Pavers	338	Paver	2	50	50	77
Roller	338	Roller	2	20	50	80

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST5

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Paver	45.4	48.4
Roller	44.4	51.4
Total [1]	**48.0**	**51.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST5	74.9	74.9	74.9	79.9	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Paving - Mitigated Construction
Noise Impact Assessment
NSA: ST6

NSA #:	ST6

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
62.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Pavers	346	Paver	2	50	50	77
Roller	346	Roller	2	20	50	80

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST6

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Paver	45.2	48.2
Roller	44.2	51.2
Total [1]	**47.7**	**51.2**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST6	62.9	63.1	62.8	67.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Paving - Mitigated Construction
Noise Impact Assessment
NSA: ST7

NSA #:	ST7

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
64.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Pavers	571	Paver	2	50	50	77
Roller	571	Roller	2	20	50	80

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST7

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Paver	40.8	43.9
Roller	39.9	46.9
Total [1]	**43.4**	**46.9**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST7	64.8	64.9	64.8	69.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Paving - Mitigated Construction
Noise Impact Assessment
NSA: ST8

NSA #:	ST8

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
69.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Pavers	836	Paver	2	50	50	77
Roller	836	Roller	2	20	50	80

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST8

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Paver	47.5	50.5
Roller	46.6	53.5
Total [1]	**50.1**	**53.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST8	69.8	69.9	69.8	74.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Paving - Mitigated Construction
Noise Impact Assessment
NSA: ST9

NSA #:	ST9

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.6

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Pavers	824	Paver	2	50	50	77
Roller	824	Roller	2	20	50	80

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST9

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Paver	47.7	50.7
Roller	46.7	53.7
Total [1]	**50.2**	**53.7**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST9	74.6	74.6	74.6	79.6	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Paving - Mitigated Construction
Noise Impact Assessment
NSA: ST10

NSA #:	ST10

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.1

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Pavers	1264	Paver	2	50	50	77
Roller	1264	Roller	2	20	50	80

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST10

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Paver	43.9	47.0
Roller	43.0	50.0
Total [1]	**46.5**	**50.0**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST10	67.1	67.2	67.1	72.1	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Architectural Coating - Construction Mitigated
Noise Impact Assessment
NSA: ST2

NSA #:	ST2

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Air Compressor	540	Compressor (air)	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST2

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Compressor (air)	38.4	42.3
Total [1]	**38.4**	**42.3**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST2	67.5	67.5	67.5	72.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Architectural Coating - Construction Mitigated
Noise Impact Assessment
NSA: ST3

NSA #:	ST3

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
65.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Air Compressor	271	Compressor (air)	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST3

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Compressor (air)	44.3	48.3
Total [1]	**44.3**	**48.3**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST3	65.5	65.6	65.5	70.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Architectural Coating - Construction Mitigated
Noise Impact Assessment
NSA: ST5

NSA #:	ST5

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.9

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Air Compressor	422	Compressor (air)	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST5

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Compressor (air)	40.5	44.5
Total [1]	**40.5**	**44.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST5	74.9	74.9	74.9	79.9	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Architectural Coating - Construction Mitigated
Noise Impact Assessment
NSA: ST6

NSA #:	ST6

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
62.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Air Compressor	265	Compressor (air)	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST6

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Compressor (air)	44.5	48.5
Total [1]	**44.5**	**48.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST6	62.9	63.0	62.8	67.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Architectural Coating - Construction Mitigated
Noise Impact Assessment
NSA: ST7

NSA #:	ST7

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
64.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Air Compressor	405	Compressor (air)	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST7

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Compressor (air)	40.9	44.8
Total [1]	**40.9**	**44.8**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

[3] Assumes an estimated noise reduction of 10 dBA due to noise barrier/wall.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST7	64.8	64.8	64.8	69.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Architectural Coating - Construction Mitigated
Noise Impact Assessment
NSA: ST8

NSA #:	ST8

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
69.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Air Compressor	668	Compressor (air)	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST8

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Compressor (air)	46.5	50.5
Total [1]	**46.5**	**50.5**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST8	69.8	69.9	69.8	74.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Architectural Coating - Construction Mitigated
Noise Impact Assessment
NSA: ST9

NSA #:	ST9

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.6

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Air Compressor	671	Compressor (air)	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST9

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Compressor (air)	46.5	50.4
Total [1]	**46.5**	**50.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST9	74.6	74.6	74.6	79.6	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Architectural Coating - Construction Mitigated
Noise Impact Assessment
NSA: ST10

NSA #:	ST10

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.1

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor[1]	Noise Level Reference Distance [1]	Sound Pressure Level @
	feet			%/hr.	(feet)	(dBA)
Air Compressor	660	Compressor (air)	1	40	50	78

[1] FHWA -Construction Noise Handbook - Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors

Sound Levels at NSA ST10

Equipment	Construction Levels [1,2,3]	
	Leq (dBA)	L_{Max} (dBA)
Compressor (air)	46.6	50.6
Total [1]	**46.6**	**50.6**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Assumes an estimated noise shielding of 5 dBA

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST10	67.1	67.2	67.1	72.1	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

Construction Traffic Noise - Demolition

Station	Traffic values			Control	Road surface	Gradient
	Vehicles type	Veh/h	Speed km/h			Min / Max %
1 Traffic direction: In entry direction	Total	30	-	None	Average (of DGAC and PCC)	-0.9 / -0.1
	Automobiles	25	56			
	Medium trucks	1	56			
	Heavy trucks	4	56			
	Buses	-	56			
	Motorcycles	-	56			
	Auxiliary vehicle	-	-			

Construction Traffic Noise - Site Preparation

Station	Traffic values			Control	Road surface	Gradient
	Vehicles type	Veh/h	Speed km/h			Min / Max %
1 Traffic direction: In entry direction	Total	11	-	None	Average (of DGAC and PCC)	-0.9 / -0.1
	Automobiles	10	56			
	Medium trucks	-	56			
	Heavy trucks	1	56			
	Buses	-	56			
	Motorcycles	-	56			
	Auxiliary vehicle	-	-			

Construction Traffic Noise - Grading

Station	Traffic values			Control	Road surface	Gradient
	Vehicles type	Veh/h	Speed km/h			Min / Max %
1 Traffic direction: In entry direction	Total	69	-	None	Average (of DGAC and PCC)	-0.9 / -0.1
	Automobiles	38	56			
	Medium trucks	2	56			
	Heavy trucks	30	56			
	Buses	-	56			
	Motorcycles	-	56			
	Auxiliary vehicle	-	-			

Construction Traffic Noise - Building Construction

Station	Traffic values			Control	Road surface	Gradient
	Vehicles type	Veh/h	Speed km/h			Min / Max %
1 Traffic direction: In entry direction	Total	106	-	None	Average (of DGAC and PCC)	-0.9 / -0.1
	Automobiles	100	56			
	Medium trucks	3	56			
	Heavy trucks	4	56			
	Buses	-	56			
	Motorcycles	-	56			
	Auxiliary vehicle	-	-			

Construction Traffic Noise - Paving

Station	Traffic values			Control	Road surface	Gradient
	Vehicles type	Veh/h	Speed km/h			Min / Max %
1 Traffic direction: In entry direction	Total	10	-	None	Average (of DGAC and PCC)	-0.9 / -0.1
	Automobiles	8	56			
	Medium trucks	1	56			
	Heavy trucks	2	56			
	Buses	-	56			
	Motorcycles	-	56			
	Auxiliary vehicle	-	-			

Construction Traffic Noise - Architectural Coating

Station	Traffic values			Control	Road surface	Gradient
	Vehicles type	Veh/h	Speed km/h			Min / Max %
1 Traffic direction: In entry direction	Total	10	-	None	Average (of DGAC and PCC)	-0.9 / -0.1
	Automobiles	8	56			
	Medium trucks	1	56			
	Heavy trucks	2	56			
	Buses	-	56			
	Motorcycles	-	56			
	Auxiliary vehicle	-	-			

APPENDIX C

Operational Noise Calculations

La Brea Tar Pits Master Plan
Mechanical - Operation
Noise Impact Assessment
NSA: ST2

NSA #:	ST2

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance [a,b,c]
	feet			%/hr.	(feet)	(dBA)
New Museum Building - HVAC	951		6	100	3	73
Page Museum - HVAC	1213		10	100	3	73
Support Building - HVAC	711		1	100	3	73
New Museum Building - Emergency Generator	951	Generator	0	50	50	81
Page Museum - Emergency Generator	1213	Generator	0	50	50	81
Support Building - Emergency Generator	711	Generator	1	50	50	81

[a] A reference noise level of 73 dBA at 3 feet was assumed for a 5 ton HVAC unit.

[b] Assumes only one generator is operating simultaneously.

Sound Levels at NSA ST2

Equipment	Construction Levels [1]	
	Leq (dBA)	L_{Max} (dBA)
New Museum Building - HVAC	30.8	30.8
Page Museum - HVAC	30.9	30.9
Support Building - HVAC	25.5	25.5
Generator		
Generator		
Generator	49.9	52.9
Total [1]	**50.1**	**52.9**

[1] Noise Level assumes all equipment is operating simultaneously.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST2	67.6	67.6	67.5	72.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Mechanical - Operation
Noise Impact Assessment
NSA: ST3

NSA #:	ST3

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
65.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance [a,b,c]
	feet			%/hr.	(feet)	(dBA)
New Museum Building - HVAC	498		6	100	3	73
Page Museum - HVAC	772		10	100	3	73
Support Building - HVAC	247		1	100	3	73
New Museum Building - Emergency Generator	498	Generator	0	50	50	81
Page Museum - Emergency Generator	772	Generator	0	50	50	81
Support Building - Emergency Generator	247	Generator	1	50	50	81

[a] A reference noise level of 73 dBA at 3 feet was assumed for a 5 ton HVAC unit.

[b] Assumes only one generator is operating simultaneously.

[c] Assumes an estimated noise shielding of 5 dBA

Sound Levels at NSA ST3

Equipment	Construction Levels [1]	
	Leq (dBA)	L_{Max} (dBA)
New Museum Building - HVAC	36.4	36.4
Page Museum - HVAC	34.8	34.8
Support Building - HVAC	34.7	34.7
Generator		
Generator		
Generator	59.1	62.1
Total [1]	**59.2**	**62.1**

[1] Noise Level assumes all equipment is operating simultaneously.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST3	66.4	67.1	65.5	65.5	Yes

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels.

La Brea Tar Pits Master Plan
Mechanical - Operation
Noise Impact Assessment
NSA: ST5

NSA #:	ST5

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.9

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance [a,b,c]
	feet			%/hr.	(feet)	(dBA)
New Museum Building - HVAC	561		6	100	3	73
Page Museum - HVAC	508		10	100	3	73
Support Building - HVAC	693		1	100	3	73
New Museum Building - Emergency Generator	561	Generator	0	50	50	81
Page Museum - Emergency Generator	508	Generator	1	50	50	81
Support Building - Emergency Generator	693	Generator	0	50	50	81

[a] A reference noise level of 73 dBA at 3 feet was assumed for a 5 ton HVAC unit.

[b] Assumes only one generator is operating simultaneously.

Sound Levels at NSA ST5

Equipment	Construction Levels [1]	
	Leq (dBA)	L_{Max} (dBA)
New Museum Building - HVAC	35.3	35.3
Page Museum - HVAC	38.4	38.4
Support Building - HVAC	25.7	25.7
Generator		
Generator	52.9	55.9
Generator		
Total [1]	**53.1**	**55.9**

[1] Noise Level assumes all equipment is operating simultaneously.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST5	74.9	75.0	74.9	79.9	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Mechanical - Operation
Noise Impact Assessment
NSA: ST6

NSA #:	ST6

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
62.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance [a,b,c]
	feet			%/hr.	(feet)	(dBA)
New Museum Building - HVAC	509		6	100	3	73
Page Museum - HVAC	313		8	100	3	73
Support Building - HVAC	730		1	100	3	73
New Museum Building - Emergency Generator	509	Generator	0	50	50	81
Page Museum - Emergency Generator	313	Generator	1	50	50	81
Support Building - Emergency Generator	730	Generator	0	50	50	81

[a] A reference noise level of 73 dBA at 3 feet was assumed for a 5 ton HVAC unit.

[b] Assumes only one generator is operating simultaneously.

Sound Levels at NSA ST6

Equipment	Construction Levels [1]	
	Leq (dBA)	L_{Max} (dBA)
New Museum Building - HVAC	36.2	36.2
Page Museum - HVAC	41.7	41.7
Support Building - HVAC	25.3	25.3
Generator		
Generator	57.1	60.1
Generator		
Total [1]	**57.2**	**60.1**

[1] Noise Level assumes all equipment is operating simultaneously.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST6	63.9	64.7	62.8	67.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Mechanical - Operation
Noise Impact Assessment
NSA: ST7

NSA #:	ST7

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
64.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance [a,b,c]
	feet			%/hr.	(feet)	(dBA)
New Museum Building - HVAC	614		6	100	3	73
Page Museum - HVAC	346		10	100	3	73
Support Building - HVAC	876		1	100	3	73
New Museum Building - Emergency Generator	614	Generator	0	50	50	81
Page Museum - Emergency Generator	346	Generator	1	50	50	81
Support Building - Emergency Generator	876	Generator	0	50	50	81

[a] A reference noise level of 73 dBA at 3 feet was assumed for a 5 ton HVAC unit.

[b] Assumes only one generator is operating simultaneously.

Sound Levels at NSA ST7

Equipment	Construction Levels [1]	
	Leq (dBA)	L_{Max} (dBA)
New Museum Building - HVAC	34.6	34.6
Page Museum - HVAC	41.8	41.8
Support Building - HVAC	23.7	23.7
Generator		
Generator	56.2	59.2
Generator		
Total [1]	**56.4**	**59.2**

[1] Noise Level assumes all equipment is operating simultaneously.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST7	65.4	65.9	64.8	69.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Mechanical - Operation
Noise Impact Assessment
NSA: ST8

NSA #:	ST8

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
69.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance [a,b,c]
	feet			%/hr.	(feet)	(dBA)
New Museum Building - HVAC	785		6	100	3	73
Page Museum - HVAC	565		10	100	3	73
Support Building - HVAC	1030		1	100	3	73
New Museum Building - Emergency Generator	785	Generator	0	50	50	81
Page Museum - Emergency Generator	565	Generator	1	50	50	81
Support Building - Emergency Generator	1030	Generator	0	50	50	81

[a] A reference noise level of 73 dBA at 3 feet was assumed for a 5 ton HVAC unit.

[b] Assumes only one generator is operating simultaneously.

Sound Levels at NSA ST8

Equipment	Construction Levels [1]	
	Leq (dBA)	L_{Max} (dBA)
New Museum Building - HVAC	32.4	32.4
Page Museum - HVAC	37.5	37.5
Support Building - HVAC	22.3	22.3
Generator		
Generator	51.9	54.9
Generator		
Total [1]	**52.1**	**54.9**

[1] Noise Level assumes all equipment is operating simultaneously.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST8	69.9	69.9	69.8	74.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Mechanical - Operation
Noise Impact Assessment
NSA: ST9

NSA #:	ST9

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.6

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance [a,b,c]
	feet			%/hr.	(feet)	(dBA)
New Museum Building - HVAC	677		6	100	3	73
Page Museum - HVAC	573		10	100	3	73
Support Building - HVAC	864		1	100	3	73
New Museum Building - Emergency Generator	677	Generator	0	50	50	81
Page Museum - Emergency Generator	573	Generator	1	50	50	81
Support Building - Emergency Generator	864	Generator	0	50	50	81

[a] A reference noise level of 73 dBA at 3 feet was assumed for a 5 ton HVAC unit.

[b] Assumes only one generator is operating simultaneously.

Sound Levels at NSA ST9

Equipment	Construction Levels [1]	
	Leq (dBA)	L_{Max} (dBA)
New Museum Building - HVAC	33.7	33.7
Page Museum - HVAC	37.4	37.4
Support Building - HVAC	23.8	23.8
Generator		
Generator	51.8	54.8
Generator		
Total [1]	**52.0**	**54.8**

[1] Noise Level assumes all equipment is operating simultaneously.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST9	74.6	74.6	74.6	79.6	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Mechanical - Operation
Noise Impact Assessment
NSA: ST10

NSA #:	ST10

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.1

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance [a,b,c]
	feet			%/hr.	(feet)	(dBA)
New Museum Building - HVAC	1024		6	100	3	73
Page Museum - HVAC	1158		10	100	3	73
Support Building - HVAC	983		1	100	3	73
New Museum Building - Emergency Generator	1024	Generator	0	50	50	81
Page Museum - Emergency Generator	1158	Generator	0	50	50	81
Support Building - Emergency Generator	983	Generator	1	50	50	81

[a] A reference noise level of 73 dBA at 3 feet was assumed for a 5 ton HVAC unit.

[b] Assumes only one generator is operating simultaneously.

Sound Levels at NSA ST10

Equipment	Construction Levels [1]	
	Leq (dBA)	L_{Max} (dBA)
New Museum Building - HVAC	30.1	30.1
Page Museum - HVAC	31.3	31.3
Support Building - HVAC	22.7	22.7
Generator		
Generator		
Generator	47.1	50.1
Total [1]	**47.3**	**50.1**

[1] Noise Level assumes all equipment is operating simultaneously.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST10	67.1	67.2	67.1	72.1	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Loading and Trash Compactor - Operation
Noise Impact Assessment
NSA: ST2

NSA #:	ST2

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance [a,b]
	feet			%/hr.	(feet)	(dBA)
Waste Compactor- Page Museum	1213		1	100	50	66
Waste Compactor - New Museum Building	930		1	100	50	66
Loading Dock - Page Museum	1213		1	100	50	71
Loading Dock - New Museum Building	930		1	100	50	71

[a] Waste Compactor noise level - British Standard BS 5228-1:2009, Table C8

[b] Loading Dock noise level - AES 2017 LACMA Building for the Permanent Collection

Sound Levels at NSA ST2

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Waste Compactor- Page Museum	38.3	38.3
Waste Compactor - New Museum Building	40.6	40.6
Loading Dock - Page Museum	43.3	43.3
Loading Dock - New Museum Building	45.6	45.6
Total [1]	**48.8**	**45.6**
Max 1-hr	**45.6**	**45.6**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Represents the loudest individual noise generating source

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
	67.5	67.5	67.5	72.5	No

[*] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Loading and Trash Compactor - Operation
Noise Impact Assessment
NSA: ST3

NSA #:	ST3

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
65.5

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance [a,b]
	feet			%/hr.	(feet)	(dBA)
Waste Compactor- Page Museum	734		1	100	50	66
Waste Compactor - New Museum Building	460		1	100	50	66
Loading Dock - Page Museum	734		1	100	50	71
Loading Dock - New Museum Building	460		1	100	50	71

[a] Waste Compactor noise level - British Standard BS 5228-1:2009, Table C8

[b] Loading Dock noise level - AES 2017 LACMA Building for the Permanent Collection

Sound Levels at NSA ST3

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Waste Compactor- Page Museum	42.7	42.7
Waste Compactor - New Museum Building	46.7	46.7
Loading Dock - Page Museum	47.7	47.7
Loading Dock - New Museum Building	51.7	51.7
Total [1]	**54.4**	**51.7**
Max 1-hr	**51.7**	**51.7**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Represents the loudest individual noise generating source

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
	65.7	65.7	65.5	70.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Loading and Trash Compactor - Operation
Noise Impact Assessment
NSA: ST5

NSA #:	ST5

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.9

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance [a,b]
	feet			%/hr.	(feet)	(dBA)
Waste Compactor- Page Museum	338		1	100	50	66
Waste Compactor - New Museum Building	508		1	100	50	66
Loading Dock - Page Museum	338		1	100	50	71
Loading Dock - New Museum Building	508		1	100	50	71

[a] Waste Compactor noise level - British Standard BS 5228-1:2009, Table C8

[b] Loading Dock noise level - AES 2017 LACMA Building for the Permanent Collection

Sound Levels at NSA ST5

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Waste Compactor- Page Museum	49.4	49.4
Waste Compactor - Pit 91		
Waste Compactor - New Museum Building	45.9	45.9
Loading Dock - Page Museum	54.4	54.4
Loading Dock - Pit 91		
Loading Dock - New Museum Building	50.9	50.9
Total [1]	**57.2**	**54.4**
Max 1-hr	**54.4**	**54.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Represents the loudest individual noise generating source

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
	74.9	74.9	74.9	79.9	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Loading and Trash Compactor - Operation
Noise Impact Assessment
NSA: ST6

NSA #:	ST6

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
62.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance [a,b]
	feet			%/hr.	(feet)	(dBA)
Waste Compactor- Page Museum	248		1	100	50	66
Waste Compactor - New Museum Building	522		1	100	50	66
Loading Dock - Page Museum	248		1	100	50	71
Loading Dock - New Museum Building	522		1	100	50	71

[a] Waste Compactor noise level - British Standard BS 5228-1:2009, Table C8

[b] Loading Dock noise level - AES 2017 LACMA Building for the Permanent Collection

Sound Levels at NSA ST6

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Waste Compactor- Page Museum	52.1	52.1
Waste Compactor - Pit 91		
Waste Compactor - New Museum Building	45.6	45.6
Loading Dock - Page Museum	57.1	57.1
Loading Dock - Pit 91		
Loading Dock - New Museum Building	50.6	50.6
Total [1]	**59.2**	**57.1**
Max 1-hr	**57.1**	**57.1**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Represents the loudest individual noise generating source

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
	63.8	63.8	62.8	67.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Loading and Trash Compactor - Operation
Noise Impact Assessment
NSA: ST7

NSA #:	ST7

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
64.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance [a,b]
	feet			%/hr.	(feet)	(dBA)
Waste Compactor- Page Museum	432		1	100	50	66
Waste Compactor - New Museum Building	631		1	100	50	66
Loading Dock - Page Museum	432		1	100	50	71
Loading Dock - New Museum Building	631		1	100	50	71

[a] Waste Compactor noise level - British Standard BS 5228-1:2009, Table C8

[b] Loading Dock noise level - AES 2017 LACMA Building for the Permanent Collection

Sound Levels at NSA ST7

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Waste Compactor- Page Museum	47.3	47.3
Waste Compactor - Pit 91		
Waste Compactor - New Museum Building	44.0	44.0
Loading Dock - Page Museum	52.3	52.3
Loading Dock - Pit 91		
Loading Dock - New Museum Building	49.0	49.0
Total [1]	**55.1**	**52.3**
Max 1-hr	**52.3**	**52.3**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Represents the loudest individual noise generating source

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
	65.0	65.0	64.8	69.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Loading and Trash Compactor - Operation
Noise Impact Assessment
NSA: ST8

NSA #:	ST8

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
69.8

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance [a,b]
	feet			%/hr.	(feet)	(dBA)
Waste Compactor- Page Museum	689		1	100	50	66
Waste Compactor - New Museum Building	783		1	100	50	66
Loading Dock - Page Museum	689		1	100	50	71
Loading Dock - New Museum Building	783		1	100	50	71

[a] Waste Compactor noise level - British Standard BS 5228-1:2009, Table C8

[b] Loading Dock noise level - AES 2017 LACMA Building for the Permanent Collection

Sound Levels at NSA ST8

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Waste Compactor- Page Museum	43.2	43.2
Waste Compactor - Pit 91		
Waste Compactor - New Museum Building	42.1	42.1
Loading Dock - Page Museum	48.2	48.2
Loading Dock - Pit 91		
Loading Dock - New Museum Building	47.1	47.1
Total [1]	**51.9**	**48.2**
Max 1-hr	**48.2**	**48.2**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Represents the loudest individual noise generating source

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
	69.8	69.8	69.8	74.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Loading and Trash Compactor - Operation
Noise Impact Assessment
NSA: ST9

NSA #:	ST9

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.6

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance [a,b]
	feet			%/hr.	(feet)	(dBA)
Waste Compactor- Page Museum	722		1	100	50	66
Waste Compactor - New Museum Building	675		1	100	50	66
Loading Dock - Page Museum	722		1	100	50	71
Loading Dock - New Museum Building	675		1	100	50	71

[a] Waste Compactor noise level - British Standard BS 5228-1:2009, Table C8

[b] Loading Dock noise level - AES 2017 LACMA Building for the Permanent Collection

Sound Levels at NSA ST9

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Waste Compactor- Page Museum	42.8	42.8
Waste Compactor - Pit 91		
Waste Compactor - New Museum Building	43.4	43.4
Loading Dock - Page Museum	47.8	47.8
Loading Dock - Pit 91		
Loading Dock - New Museum Building	48.4	48.4
Total [1]	**52.3**	**48.4**
Max 1-hr	**48.4**	**48.4**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Represents the loudest individual noise generating source

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
	74.6	74.6	74.6	79.6	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Loading and Trash Compactor - Operation
Noise Impact Assessment
NSA: ST10

NSA #:	ST10

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.1

Sources

Description	Distance to Receptor	Modeled As	Quantity	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance [a,b]
	feet			%/hr.	(feet)	(dBA)
Waste Compactor- Page Museum	1269		1	100	50	66
Waste Compactor - New Museum Building	1038		1	100	50	66
Loading Dock - Page Museum	1269		1	100	50	71
Loading Dock - New Museum Building	1038		1	100	50	71

[a] Waste Compactor noise level - British Standard BS 5228-1:2009, Table C8

[b] Loading Dock noise level - AES 2017 LACMA Building for the Permanent Collection

Sound Levels at NSA ST10

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Waste Compactor- Page Museum	37.9	37.9
Waste Compactor - Pit 91		
Waste Compactor - New Museum Building	39.7	39.7
Loading Dock - Page Museum	42.9	42.9
Loading Dock - Pit 91		
Loading Dock - New Museum Building	44.7	44.7
Total [1]	**48.1**	**44.7**
Max 1-hr	**44.7**	**44.7**

[1] Noise Level assumes all equipment is operating simultaneously.

[2] Represents the loudest individual noise generating source

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
	67.1	67.1	67.1	72.1	No

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Outdoor Space - Operation
Noise Impact Assessment
NSA: ST2

NSA #:	ST2

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.5

Sources

Description	Distance to Receptor	Modeled As	Quantity [c]	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance
	feet			%/hr.	(feet)	(dBA)
Speaking, Normal Voice, Male - Roof Top Page Museum [a,b]	1189		137.5	100	3.28	65
Speaking, Normal Voice, Female - Roof Top Page Museum [a,b]	1189		137.5	100	3.28	62
Speaking, Normal Voice, Male - Outdoor Classroom Pit 10 and 91 [a,b]	535		48	100	3.28	65
Speaking, Normal Voice Female - Outdoor Classroom Pit 10 and 91 [a,b]	535		48	100	3.28	62
Amplified Sound System	1189		1	100	15	75

[a] A reference sound power noise level of 65 dBA was assumed for 1 male speaking in a normal voice, or 62 dBA for one female speaking in a normal voice.

[b] It was assumed that 50% of the people would be talking at the same time.

[c] The estimated total number of people is based on 15 square feet per person.

Sound Levels at NSA ST2

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Speaking, Normal Voice, Male - Roof Top Page Museum	35.2	35.2
Speaking, Normal Voice, Female - Roof Top Page Museum	32.2	32.2
Speaking, Normal Voice, Male - Outdoor Classroom Pit 10 and 91	37.6	37.6
Speaking, Normal Voice Female - Outdoor Classroom Pit 10 and 91	34.6	34.6
Amplified Sound System	37.0	37.0
Total [1]	**42.7**	**37.6**

[1] Noise Level assumes all equipment is operating simultaneously.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST2	67.5	67.5	67.5	72.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Outdoor Space - Operation
Noise Impact Assessment
NSA: ST3

NSA #:	ST3

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
65.5

Sources

Description	Distance to Receptor	Modeled As	Quantity [c]	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance
	feet			%/hr.	(feet)	(dBA)
Speaking, Normal Voice, Male - Roof Top Page Museum [a,b]	764		137.5	100	3.28	65
Speaking, Normal Voice, Female - Roof Top Page Museum [a,b]	764		137.5	100	3.28	62
Speaking, Normal Voice, Male - Outdoor Classroom Pit 10 and 91 [a,b]	316		48	100	3.28	65
Speaking, Normal Voice Female - Outdoor Classroom Pit 10 and 91 [a,b]	316		48	100	3.28	62
Amplified Sound System	764		1	100	15	75

[a] A reference sound power noise level of 65 dBA was assumed for 1 male speaking in a normal voice, or 62 dBA for one female speaking in a normal voice.

[b] It was assumed that 50% of the people would be talking at the same time.

[c] The estimated total number of people is based on 15 square feet per person.

Sound Levels at NSA ST3

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Speaking, Normal Voice, Male - Roof Top Page Museum	39.0	39.0
Speaking, Normal Voice, Female - Roof Top Page Museum	36.0	36.0
Speaking, Normal Voice, Male - Outdoor Classroom Pit 10 and 91	42.1	42.1
Speaking, Normal Voice Female - Outdoor Classroom Pit 10 and 91	39.1	39.1
Amplified Sound System	40.9	40.9
Total [1]	**46.9**	**42.1**

[1] Noise Level assumes all equipment is operating simultaneously.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST3	65.6	65.5	65.5	70.5	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Outdoor Space - Operation
Noise Impact Assessment
NSA: ST5

NSA #:	ST5

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.9

Sources

Description	Distance to Receptor	Modeled As	Quantity [c]	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance
	feet			%/hr.	(feet)	(dBA)
Speaking, Normal Voice, Male - Roof Top Page Museum [a,b]	488		137.5	100	3.28	65
Speaking, Normal Voice, Female - Roof Top Page Museum [a,b]	488		137.5	100	3.28	62
Speaking, Normal Voice, Male - Outdoor Classroom Pit 10 and 91 [a,b]	976		48	100	3.28	65
Speaking, Normal Voice Female - Outdoor Classroom Pit 10 and 91 [a,b]	976		48	100	3.28	62
Amplified Sound System	488		1	100	15	75

[a] A reference sound power noise level of 65 dBA was assumed for 1 male speaking in a normal voice, or 62 dBA for one female speaking in a normal voice.

[b] It was assumed that 50% of the people would be talking at the same time.

[c] The estimated total number of people is based on 15 square feet per person.

Sound Levels at NSA ST5

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Speaking, Normal Voice, Male - Roof Top Page Museum	42.9	42.9
Speaking, Normal Voice, Female - Roof Top Page Museum	39.9	39.9
Speaking, Normal Voice, Male - Outdoor Classroom Pit 10 and 91	32.3	32.3
Speaking, Normal Voice Female - Outdoor Classroom Pit 10 and 91	29.3	29.3
Amplified Sound System	44.8	44.8
Total [1]	**47.9**	**44.8**

[1] Noise Level assumes all equipment is operating simultaneously.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST5	74.9	74.9	74.9	79.9	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Outdoor Space - Operation
Noise Impact Assessment
NSA: ST6

NSA #:	ST6

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
62.8

Sources

Description	Distance to Receptor	Modeled As	Quantity [c]	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance
	feet			%/hr.	(feet)	(dBA)
Speaking, Normal Voice, Male - Roof Top Page Museum [a,b]	310		137.5	100	3.28	65
Speaking, Normal Voice, Female - Roof Top Page Museum [a,b]	310		137.5	100	3.28	62
Speaking, Normal Voice, Male - Outdoor Classroom Pit 10 and 91 [a,]	984		48	100	3.28	65
Speaking, Normal Voice Female - Outdoor Classroom Pit 10 and 91	984		48	100	3.28	62
Amplified Sound System	310		1	100	15	75

[a] A reference sound power noise level of 65 dBA was assumed for 1 male speaking in a normal voice, or 62 dBA for one female speaking in a normal voice.

[b] It was assumed that 50% of the people would be talking at the same time.

[c] The estimated total number of people is based on 15 square feet per person.

Sound Levels at NSA ST6

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Speaking, Normal Voice, Male - Roof Top Page Museum	46.9	46.9
Speaking, Normal Voice, Female - Roof Top Page Museum	43.9	43.9
Speaking, Normal Voice, Male - Outdoor Classroom Pit 10 and 91	32.3	32.3
Speaking, Normal Voice Female - Outdoor Classroom Pit 10 and 91	29.3	29.3
Amplified Sound System	48.7	48.7
Total [1]	**51.8**	**48.7**

[1] Noise Level assumes all equipment is operating simultaneously.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST6	63.1	63.0	62.8	67.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Outdoor Space - Operation
Noise Impact Assessment
NSA: ST7

NSA #:	ST7

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
64.8

Sources

Description	Distance to Receptor	Modeled As	Quantity [c]	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance
	feet			%/hr.	(feet)	(dBA)
Speaking, Normal Voice, Male - Roof Top Page Museum [a,b]	352		137.5	100	3.28	65
Speaking, Normal Voice, Female - Roof Top Page Museum [a,b]	352		137.5	100	3.28	62
Speaking, Normal Voice, Male - Outdoor Classroom Pit 10 and 91 [a,b]	1008		48	100	3.28	65
Speaking, Normal Voice Female - Outdoor Classroom Pit 10 and 91 [a]	1008		48	100	3.28	62
Amplified Sound System	352		1	100	15	75

[a] A reference sound power noise level of 65 dBA was assumed for 1 male speaking in a normal voice, or 62 dBA for one female speaking in a normal voice.

[b] It was assumed that 50% of the people would be talking at the same time.

[c] The estimated total number of people is based on 15 square feet per person.

Sound Levels at NSA ST7

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Speaking, Normal Voice, Male - Roof Top Page Museum	45.8	45.8
Speaking, Normal Voice, Female - Roof Top Page Museum	42.8	42.8
Speaking, Normal Voice, Male - Outdoor Classroom Pit 10 and 91	32.1	32.1
Speaking, Normal Voice Female - Outdoor Classroom Pit 10 and 91	29.1	29.1
Amplified Sound System	47.6	47.6
Total [1]	**50.7**	**47.6**

[1] Noise Level assumes all equipment is operating simultaneously.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST7	65.0	64.9	64.8	69.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Outdoor Space - Operation
Noise Impact Assessment
NSA: ST8

NSA #:	ST8

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
69.8

Sources

Description	Distance to Receptor	Modeled As	Quantity [c]	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance
	feet			%/hr.	(feet)	(dBA)
Speaking, Normal Voice, Male - Roof Top Page Museum [a,b]	580		137.5	100	3.28	65
Speaking, Normal Voice, Female - Roof Top Page Museum [a,b]	580		137.5	100	3.28	62
Speaking, Normal Voice, Male - Outdoor Classroom Pit 10 and 91 [a]	1081		48	100	3.28	65
Speaking, Normal Voice Female - Outdoor Classroom Pit 10 and 91	1081		48	100	3.28	62
Amplified Sound System	580		1	100	15	75

[a] A reference sound power noise level of 65 dBA was assumed for 1 male speaking in a normal voice, or 62 dBA for one female speaking in a normal voice.

[b] It was assumed that 50% of the people would be talking at the same time.

[c] The estimated total number of people is based on 15 square feet per person.

Sound Levels at NSA ST8

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Speaking, Normal Voice, Male - Roof Top Page Museum	41.4	41.4
Speaking, Normal Voice, Female - Roof Top Page Museum	38.4	38.4
Speaking, Normal Voice, Male - Outdoor Classroom Pit 10 and 91	31.5	31.5
Speaking, Normal Voice Female - Outdoor Classroom Pit 10 and 91	28.5	28.5
Amplified Sound System	43.3	43.3
Total [1]	**46.4**	**43.3**

[1] Noise Level assumes all equipment is operating simultaneously.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST8	69.8	69.8	69.8	74.8	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Outdoor Space - Operation
Noise Impact Assessment
NSA: ST9

NSA #:	ST9

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
74.6

Sources

Description	Distance to Receptor	Modeled As	Quantity [c]	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance
	feet			%/hr.	(feet)	(dBA)
Speaking, Normal Voice, Male - Roof Top Page Museum [a,b]	576		137.5	100	3.28	65
Speaking, Normal Voice, Female - Roof Top Page Museum [a,b]	576		137.5	100	3.28	62
Speaking, Normal Voice, Male - Outdoor Classroom Pit 10 and 91 [a,b]	819		48	100	3.28	65
Speaking, Normal Voice Female - Outdoor Classroom Pit 10 and 91 [a,b]	819		48	100	3.28	62
Amplified Sound System	576		1	100	15	75

[a] A reference sound power noise level of 65 dBA was assumed for 1 male speaking in a normal voice, or 62 dBA for one female speaking in a normal voice.

[b] It was assumed that 50% of the people would be talking at the same time.

[c] The estimated total number of people is based on 15 square feet per person.

Sound Levels at NSA ST9

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Speaking, Normal Voice, Male - Roof Top Page Museum	41.5	41.5
Speaking, Normal Voice, Female - Roof Top Page Museum	38.5	38.5
Speaking, Normal Voice, Male - Outdoor Classroom Pit 10 and 91	33.9	33.9
Speaking, Normal Voice Female - Outdoor Classroom Pit 10 and 91	30.9	30.9
Amplified Sound System	43.3	43.3
Total [1]	**46.7**	**43.3**

[1] Noise Level assumes all equipment is operating simultaneously.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST9	74.6	74.6	74.6	79.6	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

La Brea Tar Pits Master Plan
Outdoor Space - Operation
Noise Impact Assessment
NSA: ST10

NSA #:	ST10

Baseline Noise

Representative Existing Conditions
LAeq
(dBA)
67.1

Sources

Description	Distance to Receptor	Modeled As	Quantity [c]	Acoustical Usage Factor	Noise Level Reference Distance	Sound Pressure Level @ reference distance
	feet			%/hr.	(feet)	(dBA)
Speaking, Normal Voice, Male - Roof Top Page Museum [a,b]	1165		137.5	100	3.28	65
Speaking, Normal Voice, Female - Roof Top Page Museum [a,b]	1165		137.5	100	3.28	62
Speaking, Normal Voice, Male - Outdoor Classroom Pit 10 and 91 [a,b]	679		48	100	3.28	65
Speaking, Normal Voice Female - Outdoor Classroom Pit 10 and 91 [a,b]	679		48	100	3.28	62
Amplified Sound System	1165		1	100	15	75

[a] A reference sound power noise level of 65 dBA was assumed for 1 male speaking in a normal voice, or 62 dBA for one female speaking in a normal voice.

[b] It was assumed that 50% of the people would be talking at the same time.

[c] The estimated total number of people is based on 15 square feet per person.

Sound Levels at NSA ST10

Equipment	Construction Levels [1,2]	
	Leq (dBA)	L_{Max} (dBA)
Speaking, Normal Voice, Male - Roof Top Page Museum	35.4	35.4
Speaking, Normal Voice, Female - Roof Top Page Museum	32.4	32.4
Speaking, Normal Voice, Male - Outdoor Classroom Pit 10 and 91	35.5	35.5
Speaking, Normal Voice Female - Outdoor Classroom Pit 10 and 91	32.5	32.5
Amplified Sound System	37.2	37.2
Total [1]	**42.0**	**37.2**

[1] Noise Level assumes all equipment is operating simultaneously.

NSA #	Construction, Leq	Construction, Lmax [1]	Measured Ambient Noise Level, Leq	Significance Threshold, Leq [2]	Significant Impact?
	(dBA)	(dBA)	(dBA)	(dBA)	
ST10	67.1	67.1	67.1	72.1	No

[1] Calculated Lmax is the loudest individual value.

[2] Threshold is equivalent to the measured daytime ambient noise levels plus 5 dBA.

Existing Roadway Traffic Noise Levels - Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
Wilshire Boulevard - Ogden Dr EB T Traffic direction: In entry direction					
	Total	826	-	none	Average (of DGAC and PCC)
	Automobiles	809	56		
	Medium trucks	-	-		
	Heavy trucks	17	56		
	Buses	-	-		
	Motorcycles	-	-		
	Auxiliary vehicle	-	-		
Wilshire Boulevard-Spaulding Avenue EB T Traffic direction: In entry direction					
	Total	844	-	none	Average (of DGAC and PCC)
	Automobiles	827	56		
	Medium trucks	-	56		
	Heavy trucks	17	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Wilshire Boulevard-Curson Avenue EB T Traffic direction: In entry direction					
	Total	809	-	none	Average (of DGAC and PCC)
	Automobiles	793	56		
	Medium trucks	-	56		
	Heavy trucks	16	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Wilshire Boulevard-Curson Avenue EB T2 Traffic direction: In entry direction					
	Total	812	-	none	Average (of DGAC and PCC)
	Automobiles	812	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Wilshire Boulevard - Ogden Dr WB T Traffic direction: In entry direction					
	Total	629	-	none	Average (of DGAC and PCC)
	Automobiles	628	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Wilshire Boulevard-Spaulding Avenue WB T Traffic direction: In entry direction					
	Total	627	-	none	Average (of DGAC and PCC)
	Automobiles	614	56		
	Medium trucks	-	56		
	Heavy trucks	13	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Wilshire Boulevard-Curson Avenue WB T Traffic direction: In entry direction					
	Total	619	-	none	Average (of DGAC and PCC)
	Automobiles	607	56		
	Medium trucks	-	56		
	Heavy trucks	12	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Wilshire Boulevard-Curson Avenue WB T1 Traffic direction: In entry direction					
	Total	543	-	none	Average (of DGAC and PCC)
	Automobiles	543	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Ogden Drive-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	39	-	none	Average (of DGAC and PCC)
	Automobiles	38	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Ogden Drive-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	19	-	none	Average (of DGAC and PCC)
	Automobiles	19	56		
	Medium trucks	-	56		
	Heavy trucks	0	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Spaulding Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	99	-	none	Average (of DGAC and PCC)
	Automobiles	97	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	2	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Spaulding Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	130	-	none	Average (of DGAC and PCC)
	Automobiles	127	56		
	Medium trucks	-	56		
	Heavy trucks	3	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Curson Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	358	-		
	Automobiles	351	56		

Existing Roadway Traffic Noise Levels - Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday Veh/h	Speed km/h		
	Medium trucks	-	56	none	Average (of DGAC and PCC)
	Heavy trucks	7	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Curson Avenue-Wilshire Boulevard NB W1 Traffic direction: In entry direction					
	Total	354	-	none	Average (of DGAC and PCC)
	Automobiles	347	56		
	Medium trucks	-	56		
	Heavy trucks	7	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Wilshire Boulevard-Curson Avenue WB T1 1 Traffic direction: In entry direction					
	Total	448	-	none	Average (of DGAC and PCC)
	Automobiles	439	56		
	Medium trucks	-	56		
	Heavy trucks	9	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Curson Avenue-Wilshire Boulevard NB W2 Traffic direction: In entry direction					
	Total	64	-	none	Average (of DGAC and PCC)
	Automobiles	63	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Curson Avenue-Wilshire Boulevard SB Traffic direction: In entry direction					
	Total	361	-	none	Average (of DGAC and PCC)
	Automobiles	354	56		
	Medium trucks	-	56		
	Heavy trucks	7	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Curson Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	233	-	none	Average (of DGAC and PCC)
	Automobiles	228	56		
	Medium trucks	-	56		
	Heavy trucks	5	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
6th Street-Curson Avenue WB T Traffic direction: In entry direction					
	Total	642	-	none	Average (of DGAC and PCC)
	Automobiles	629	56		
	Medium trucks	-	56		
	Heavy trucks	13	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
6th Street-Curson Avenue WB T Traffic direction: In entry direction					
	Total	617	-	none	Average (of DGAC and PCC)
	Automobiles	605	56		
	Medium trucks	-	56		
	Heavy trucks	12	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
6th Street-Ogden Dr WB T Traffic direction: In entry direction					
	Total	1073	-	none	Average (of DGAC and PCC)
	Automobiles	1052	56		
	Medium trucks	-	56		
	Heavy trucks	21	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
6th Street-Ogden Dr EB T Traffic direction: In entry direction					
	Total	956	-	none	Average (of DGAC and PCC)
	Automobiles	937	56		
	Medium trucks	-	56		
	Heavy trucks	19	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
6th Street-Curson Avenue EB T Traffic direction: In entry direction					
	Total	534	-	none	Average (of DGAC and PCC)
	Automobiles	523	56		
	Medium trucks	-	56		
	Heavy trucks	11	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
6th Street-Curson Avenue EB T Traffic direction: In entry direction					
	Total	553	-	none	Average (of DGAC and PCC)
	Automobiles	542	56		
	Medium trucks	-	56		
	Heavy trucks	11	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Curson Avenue-6th Street NB W Traffic direction: In entry direction					
	Total	138	-	none	Average (of DGAC and PCC)
	Automobiles	135	56		
	Medium trucks	-	56		
	Heavy trucks	3	56		
	Buses	-	56		

Existing Roadway Traffic Noise Levels - Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Curson Avenue-6th Street SB W Traffic direction: In entry direction					
	Total	134	-		
	Automobiles	131	56		
	Medium trucks	-	56		
	Heavy trucks	3	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Ogden Dr-6th Street SB W Traffic direction: In entry direction					
	Total	51	-		
	Automobiles	50	56		
	Medium trucks	-	56		
	Heavy trucks	1	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Ogden Dr-6th Street NB W Traffic direction: In entry direction					
	Total	30	-		
	Automobiles	29	56		
	Medium trucks	-	56		
	Heavy trucks	1	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Curson Avenue-Wilshire Boulevard NB Traffic direction: In entry direction					
	Total	418	-		
	Automobiles	410	56		
	Medium trucks	-	56		
	Heavy trucks	8	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-	none	Average (of DGAC and PCC)
Ogden Dr-6th Street EB S Traffic direction: In entry direction					
	Total	199	-		
	Automobiles	195	56		
	Medium trucks	-	56		
	Heavy trucks	4	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		
Ogden Dr-6th Street NB E Traffic direction: In entry direction					
	Total	145	-		
	Automobiles	142	56		
	Medium trucks	-	56		
	Heavy trucks	3	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-	-		

Roadway Segment		Adjacent Land Use	Leq	Daytime	Evening	Nighttime	CNEL
			dBA	dBA	dBA	dBA	dBA
6th Street	Between Fairfax Ave. and Ogden Dr.	Residential	70.3	68.5	65.5	60.8	69.8
	Between Ogden Dr. and Curson Ave.	Residential	68.2	66.4	63.4	58.7	67.7
	East of Curson Ave.	Residential	68.2	66.4	63.4	58.7	67.7
Ogden Drive	North of 6th St.	Residential	61.3	59.5	56.5	51.8	60.8
	South of Wilshire Blvd.	Commercial	61.3	59.5	56.5	51.8	60.8
Spaulding Avenue	South of Wilshire Blvd.	Commercial	63.7	61.9	58.9	54.2	63.2
Curson Avenue	North of 6th St.	Residential	65.3	63.5	60.5	55.8	64.8
	Between 6th St. and Wilshire Blvd.	Residential	68.1	66.3	63.3	58.6	67.6
	South of Wilshire Blvd.	Residential	69.6	67.8	64.8	60.1	69.1
Wilshire Boulevard	Between Fairfax Ave. and Ogden Dr.	Museum	66.5	64.7	61.7	57.0	66.0
	Between Ogden Dr. and Spaulding Ave.	Commercial	65.6	63.8	60.8	56.1	65.1
	Between Spaulding. and Curson Ave.	Museum	67.5	65.7	62.7	58.0	67.0
	East of Curson Ave.	Commercial	66.3	64.5	61.5	56.8	65.8

Existing Roadway Traffic Noise Levels - Weekday

Station	Vehicles type	Traffic values				Control	Road surface
		AM	midday	PM	Speed		
		Veh/h	Veh/h	Veh/h	km/h		
Wilshire Boulevard - Ogden Dr EB T Traffic direction: In entry direction							
	Total	554	954	1594	-	none	Average (of DGAC and PCC)
	Automobiles	543	935	1562	56		
	Medium trucks	-	-	-	-		
	Heavy trucks	11	19	32	56		
	Buses	-	-	-	-		
	Motorcycles	-	-	-	-		
	Auxiliary vehicle	-	-	-	-		
Wilshire Boulevard-Spaulding Avenue EB T Traffic direction: In entry direction							
	Total	561	961	1599	-	none	Average (of DGAC and PCC)
	Automobiles	550	942	1567	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	11	19	32	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Wilshire Boulevard-Curson Avenue EB T Traffic direction: In entry direction							
	Total	629	905	1591	-	none	Average (of DGAC and PCC)
	Automobiles	616	887	1559	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	13	18	32	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Wilshire Boulevard-Curson Avenue EB T2 Traffic direction: In entry direction							
	Total	742	942	1533	-	none	Average (of DGAC and PCC)
	Automobiles	742	942	1533	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Wilshire Boulevard - Ogden Dr WB T Traffic direction: In entry direction							
	Total	1164	675	663	-	none	Average (of DGAC and PCC)
	Automobiles	1163	673	661	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	1	2	2	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Wilshire Boulevard-Spaulding Avenue WB T Traffic direction: In entry direction							
	Total	1176	673	645	-	none	Average (of DGAC and PCC)
	Automobiles	1152	660	632	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	24	13	13	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Wilshire Boulevard-Curson Avenue WB T Traffic direction: In entry direction							
	Total	1131	665	635	-	none	Average (of DGAC and PCC)
	Automobiles	1108	652	622	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	23	13	13	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Wilshire Boulevard-Curson Avenue WB T1 Traffic direction: In entry direction							
	Total	1021	640	681	-	none	Average (of DGAC and PCC)
	Automobiles	1021	640	681	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Ogden Drive-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	9	24	53	-	none	Average (of DGAC and PCC)
	Automobiles	9	24	52	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	0	1	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Ogden Drive-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	9	12	48	-	none	Average (of DGAC and PCC)
	Automobiles	9	12	47	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	0	1	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Spaulding Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	115	65	78	-	none	Average (of DGAC and PCC)
	Automobiles	113	64	76	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56		
	Buses	2	1	2	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Spaulding Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	77	75	63	-	none	Average (of DGAC and PCC)
	Automobiles	75	74	62	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	2	2	1	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Curson Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	549	300	323	-		
	Automobiles	538	294	317	56		

Existing Roadway Traffic Noise Levels - Weekday

Station	Traffic values					Control	Road surface
	Vehicles type	AM	midday	PM	Speed		
		Veh/h	Veh/h	Veh/h	km/h		
	Medium trucks	-	-	-	56		
	Heavy trucks	11	6	6	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Curson Avenue-Wilshire Boulevard NB W1 Traffic direction: In entry direction							
	Total	382	264	352	-		
	Automobiles	374	259	345	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	8	5	7	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Wilshire Boulevard-Curson Avenue WB T1 1 Traffic direction: In entry direction							
	Total	843	524	556	-		
	Automobiles	826	514	545	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	17	10	11	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Curson Avenue-Wilshire Boulevard NB W2 Traffic direction: In entry direction							
	Total	104	82	82	-		
	Automobiles	102	80	80	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	2	2	2	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Curson Avenue-Wilshire Boulevard SB Traffic direction: In entry direction							
	Total	352	260	258	-		
	Automobiles	345	255	253	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	7	5	5	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Curson Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	324	157	245	-		
	Automobiles	318	154	240	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	6	3	5	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
6th Street-Curson Avenue WB T Traffic direction: In entry direction							
	Total	1751	638	739	-		
	Automobiles	1716	625	724	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	35	13	15	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
6th Street-Curson Avenue WB T Traffic direction: In entry direction							
	Total	1942	675	687	-		
	Automobiles	1903	662	673	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	39	14	14	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
6th Street-Ogden Dr WB T Traffic direction: In entry direction							
	Total	1926	925	741	-		
	Automobiles	1887	907	726	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	39	19	15	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
6th Street-Ogden Dr EB T Traffic direction: In entry direction							
	Total	500	768	910	-		
	Automobiles	490	753	892	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	10	15	18	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
6th Street-Curson Avenue EB T Traffic direction: In entry direction							
	Total	541	573	943	-		
	Automobiles	530	562	924	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	11	11	19	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
6th Street-Curson Avenue EB T Traffic direction: In entry direction							
	Total	607	610	1167	-		
	Automobiles	595	598	1144	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	12	12	23	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Curson Avenue-6th Street NB W Traffic direction: In entry direction							
	Total	166	129	213	-		
	Automobiles	163	126	209	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	3	3	4	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		

Existing Roadway Traffic Noise Levels - Weekday

Station	Traffic values					Control	Road surface
	Vehicles type	AM	midday	PM	Speed		
		Veh/h	Veh/h	Veh/h	km/h		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Curson Avenue-6th Street SB W Traffic direction: In entry direction							
	Total	269	122	171	-		
	Automobiles	264	120	168	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	5	2	3	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Ogden Dr-6th Street SB W Traffic direction: In entry direction							
	Total	90	24	37	-		
	Automobiles	88	24	36	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	2	0	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Ogden Dr-6th Street NB W Traffic direction: In entry direction							
	Total	26	19	45	-		
	Automobiles	25	19	44	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	1	0	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Curson Avenue-Wilshire Boulevard NB Traffic direction: In entry direction							
	Total	486	346	434	-		
	Automobiles	476	339	425	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	10	7	9	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-	none	Average (of DGAC and PCC)
Ogden Dr-6th Street EB S Traffic direction: In entry direction							
	Total	36	61	33	-		
	Automobiles	35	60	32	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	1	1	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		
Ogden Dr-6th Street NB E Traffic direction: In entry direction							
	Total	8	76	114	-		
	Automobiles	8	74	112	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	2	2	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-	-		

Roadway Segment		Adjacent Land Use	Leq	Daytime	Evening	Nighttime	CNEL
			dBA	dBA	dBA	dBA	dBA
6th Street	Between Fairfax Ave. and Ogden Dr.	Residential	71.8	70.0	67.0	62.3	71.3
	Between Ogden Dr. and Curson Ave.	Residential	72.2	70.4	67.4	62.7	71.7
	East of Curson Ave.	Residential	71.5	69.7	66.7	62.0	71.0
Ogden Drive	North of 6th St.	Residential	63.1	61.3	58.3	53.6	62.6
	South of Wilshire Blvd.	Commercial	63.4	61.6	58.6	53.9	62.9
Spaulding Avenue	South of Wilshire Blvd.	Commercial	65.4	63.6	60.6	55.9	64.9
Curson Avenue	North of 6th St.	Residential	67.8	66.0	63.0	58.3	67.3
	Between 6th St. and Wilshire Blvd.	Residential	68.6	66.8	63.8	59.1	68.1
	South of Wilshire Blvd.	Residential	71.5	69.7	66.7	62.0	71.0
Wilshire Boulevard	Between Fairfax Ave. and Ogden Dr.	Museum	68.8	67.0	64.0	59.3	68.3
	Between Ogden Dr. and Spaulding Ave.	Commercial	67.7	65.9	62.9	58.2	67.2
	Between Spaulding. and Curson Ave.	Museum	69.9	68.1	65.1	60.4	69.4
	East of Curson Ave.	Commercial	68.3	66.5	63.5	58.8	67.8

Project Only Roadway Traffic Noise Levels - Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
Wilshire Boulevard - Ogden Dr EB T Traffic direction: In entry direction					
	Total	32	56	none	Average (of DGAC and PCC)
	Automobiles	31	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Spaulding Avenue EB T Traffic direction: In entry direction					
	Total	32	56	none	Average (of DGAC and PCC)
	Automobiles	31	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Curson Avenue EB T Traffic direction: In entry direction					
	Total	32	56	none	Average (of DGAC and PCC)
	Automobiles	31	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Curson Avenue EB T2 Traffic direction: In entry direction					
	Total	27	56	none	Average (of DGAC and PCC)
	Automobiles	27	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard - Ogden Dr WB T Traffic direction: In entry direction					
	Total	47	56	none	Average (of DGAC and PCC)
	Automobiles	47	56		
	Medium trucks	-	56		
	Heavy trucks	0	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Spaulding Avenue WB T Traffic direction: In entry direction					
	Total	47	56	none	Average (of DGAC and PCC)
	Automobiles	46	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Curson Avenue WB T Traffic direction: In entry direction					
	Total	47	56	none	Average (of DGAC and PCC)
	Automobiles	46	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Curson Avenue WB T1 Traffic direction: In entry direction					
	Total	13	56	none	Average (of DGAC and PCC)
	Automobiles	13	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Drive-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Drive-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Spaulding Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Spaulding Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	15	56	none	Average (of DGAC and PCC)
	Automobiles	15	56		
	Medium trucks	-	56		
	Heavy trucks	0	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard NB W1 Traffic direction: In entry direction					
	Total	32	56	none	Average (of DGAC and PCC)
	Automobiles	31	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			

Project Only Roadway Traffic Noise Levels - Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
Wilshire Boulevard-Curson Avenue WB T1 1 Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard NB W2 Traffic direction: In entry direction					
	Total	13	56	none	Average (of DGAC and PCC)
	Automobiles	13	56		
	Medium trucks	-	56		
	Heavy trucks	0	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard SB Traffic direction: In entry direction					
	Total	59	56	none	Average (of DGAC and PCC)
	Automobiles	58	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Curson Avenue WB T Traffic direction: In entry direction					
	Total	8	56	none	Average (of DGAC and PCC)
	Automobiles	8	56		
	Medium trucks	-	56		
	Heavy trucks	0	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Curson Avenue WB T Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Ogden Dr WB T Traffic direction: In entry direction					
	Total	58	56	none	Average (of DGAC and PCC)
	Automobiles	57	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Ogden Dr EB T Traffic direction: In entry direction					
	Total	77	56	none	Average (of DGAC and PCC)
	Automobiles	75	56		
	Medium trucks	-	56		
	Heavy trucks	2	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Curson Avenue EB T Traffic direction: In entry direction					
	Total	8	56	none	Average (of DGAC and PCC)
	Automobiles	8	56		
	Medium trucks	-	56		
	Heavy trucks	0	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Curson Avenue EB T Traffic direction: In entry direction					
	Total	8	56	none	Average (of DGAC and PCC)
	Automobiles	8	56		
	Medium trucks	-	56		
	Heavy trucks	0	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-6th Street NB W Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-6th Street SB W Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Dr-6th Street SB W Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Dr-6th Street NB W Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			

Project Only Roadway Traffic Noise Levels - Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
Curson Avenue-Wilshire Boulevard NB Traffic direction: In entry direction					
	Total	45	56		
	Automobiles	45	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-		none	Average (of DGAC and PCC)
Ogden Dr-6th Street EB S Traffic direction: In entry direction					
	Total	36	56		
	Automobiles	35	56		
	Medium trucks	-	56		
	Heavy trucks	1	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Dr-6th Street NB E Traffic direction: In entry direction					
	Total	35	56		
	Automobiles	34	56		
	Medium trucks	-	56		
	Heavy trucks	1	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			

Roadway Segment		Adjacent Land Use	Leq	Daytime	Evening	Nighttime	CNEL
			dBA	dBA	dBA	dBA	dBA
6th Street	Between Fairfax Ave. and Ogden Dr.	Residential	58.2	56.4	53.4	48.7	57.7
	Between Ogden Dr. and Curson Ave.	Residential	45.4	43.6	40.6	35.9	44.9
	East of Curson Ave.	Residential	50.7	48.9	45.9	41.2	50.2
Ogden Drive	North of 6th St.	Residential	46.0	44.2	41.2	36.5	45.5
	South of Wilshire Blvd.	Commercial	48.2	46.4	43.4	38.7	47.7
Spaulding Avenue	South of Wilshire Blvd.	Commercial	50.4	48.6	45.6	40.9	49.9
Curson Avenue	North of 6th St.	Residential	48.3	46.5	43.5	38.8	47.8
	Between 6th St. and Wilshire Blvd.	Residential	58.5	56.7	53.7	49.0	58.0
	South of Wilshire Blvd.	Residential	56.4	54.6	51.6	46.9	55.9
Wilshire Boulevard	Between Fairfax Ave. and Ogden Dr.	Museum	53.4	51.6	48.6	43.9	52.9
	Between Ogden Dr. and Spaulding Ave.	Commercial	52.5	50.7	47.7	43.0	52.0
	Between Spaulding. and Curson Ave.	Museum	54.5	52.7	49.7	45.0	54.0
	East of Curson Ave.	Commercial	51.8	50.0	47.0	42.3	51.3

Description	Off-Site Receptor	Nearest Noise Land Use(s)	Coordinates		Leq	Daytime	Evening	Nighttime	CNEL
			X	Y	dBA	dBA	dBA	dBA	dBA
Multi-family residence on the north side of West 6th Street, northwest of the project site.	ST2	Multi-Family Residential	11374577.61	3770195.09	53.4	51.6	48.6	43.9	52.9
Multi-family residence on the north side of West 6th Street, northwest of the project site.	ST3	Multi-Family Residential	11374737.35	3770194.94	44.4	42.6	39.6	34.9	43.9
Multi-family residence on the north side of West 6th Street, northeast of the project site.	ST5	Multi-Family Residential	11374999.12	3770191.44	51.3	49.5	46.5	41.8	50.8
Multi-family residence on the east side of Curson Avenue, east of the project site.	ST6	Multi-Family Residential	11375004.59	3770097.23	54.6	52.8	49.8	45.1	54.1
Mixed-use commercial building on the east side of Curson Avenue, east of the project site.	ST7	Commercial	11375000.15	3769984.29	55.2	53.4	50.4	45.7	54.7
Office building on the south side of Wilshire Boulevard, southeast of the project site.	ST8	Commercial	11374965.74	3769888.53	55.2	53.4	50.4	45.7	54.7
Commercial building on the south side of Wilshire Boulevard, south of the project site.	ST9	Commercial	11374857.07	3769896.35	54.4	52.6	49.6	44.9	53.9
Commercial building on the south side of Wilshire Boulevard, southwest of the project site.	ST10	Commercial	11374597.98	3769921.79	52.8	51.0	48.0	43.3	52.3

Project Only Roadway Traffic Noise Levels - Weekday

Station	Vehicles type	Traffic values				Control	Road surface
		AM	midday	PM	Speed		
		Veh/h	Veh/h	Veh/h	km/h		
Wilshire Boulevard - Ogden Dr EB T Traffic direction: In entry direction							
	Total	3	24	4	56		
	Automobiles	3	24	4	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	0	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Spaulding Avenue EB T Traffic direction: In entry direction							
	Total	3	24	4	56		
	Automobiles	3	24	4	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	0	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue EB T Traffic direction: In entry direction							
	Total	3	24	4	56		
	Automobiles	3	24	4	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	0	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue EB T2 Traffic direction: In entry direction							
	Total	-	34	11	56		
	Automobiles	-	34	11	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard - Ogden Dr WB T Traffic direction: In entry direction							
	Total	-	67	23	56		
	Automobiles	-	67	23	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	0	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Spaulding Avenue WB T Traffic direction: In entry direction							
	Total	-	67	23	56		
	Automobiles	-	66	23	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	1	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue WB T Traffic direction: In entry direction							
	Total	-	67	24	56		
	Automobiles	-	66	24	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	1	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue WB T1 Traffic direction: In entry direction							
	Total	1	10	1	56		
	Automobiles	1	10	1	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Drive-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Drive-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Spaulding Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Spaulding Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	-	16	5	56		
	Automobiles	-	16	5	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	0	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard NB W1 Traffic direction: In entry direction							
	Total	3	24	4	56		
	Automobiles	3	24	4	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	0	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue WB T1 1 Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			

Project Only Roadway Traffic Noise Levels - Weekday

Station	Vehicles type	Traffic values				Control	Road surface
		AM	midday	PM	Speed		
		Veh/h	Veh/h	Veh/h	km/h		
Curson Avenue-Wilshire Boulevard NB W2 Traffic direction: In entry direction							
	Total	1	10	1	56		
	Automobiles	1	10	1	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	0	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard SB Traffic direction: In entry direction							
	Total	-	85	29	56		
	Automobiles	-	83	28	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	2	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Curson Avenue WB T Traffic direction: In entry direction							
	Total	1	6	1	56		
	Automobiles	1	6	1	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	0	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Curson Avenue WB T Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Ogden Dr WB T Traffic direction: In entry direction							
	Total	-	82	29	56		
	Automobiles	-	80	28	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	2	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Ogden Dr EB T Traffic direction: In entry direction							
	Total	6	57	8	56		
	Automobiles	6	56	8	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	1	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Curson Avenue EB T Traffic direction: In entry direction							
	Total	-	12	4	56		
	Automobiles	-	12	4	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	0	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Curson Avenue EB T Traffic direction: In entry direction							
	Total	-	12	4	56		
	Automobiles	-	12	4	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	0	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-6th Street NB W Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-6th Street SB W Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Dr-6th Street SB W Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Dr-6th Street NB W Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard NB Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-		none	Average (of DGAC and PCC)
Ogden Dr-6th Street EB S Traffic direction: In entry direction							
	Total	3	27	4	56		
	Automobiles	3	26	4	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	1	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			

Project Only Roadway Traffic Noise Levels - Weekday

Station	Traffic values					Control	Road surface
	Vehicles type	AM	midday	PM	Speed		
		Veh/h	Veh/h	Veh/h	km/h		
Ogden Dr-6th Street NB E Traffic direction: In entry direction							
	Total	-	50	17	56	none	Average (of DGAC and PCC)
	Automobiles	-	49	17	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	1	0	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			

Roadway Segment		Adjacent Land Use	Leq	Daytime	Evening	Nighttime	CNEL
			dBA	dBA	dBA	dBA	dBA
6th Street	Between Fairfax Ave. and Ogden Dr.	Residential	58.7	56.9	53.9	49.2	58.2
	Between Ogden Dr. and Curson Ave.	Residential	46.8	45.0	42.0	37.3	46.3
	East of Curson Ave.	Residential	50.8	49.0	46.0	41.3	50.3
Ogden Drive	North of 6th St.	Residential	46.4	44.6	41.6	36.9	45.9
	South of Wilshire Blvd.	Commercial	48.6	46.8	43.8	39.1	48.1
Spaulding Avenue	South of Wilshire Blvd.	Commercial	50.8	49.0	46.0	41.3	50.3
Curson Avenue	North of 6th St.	Residential	49.1	47.3	44.3	39.6	48.6
	Between 6th St. and Wilshire Blvd.	Residential	57.6	55.8	52.8	48.1	57.1
	South of Wilshire Blvd.	Residential	56.8	55.0	52.0	47.3	56.3
Wilshire Boulevard	Between Fairfax Ave. and Ogden Dr.	Museum	53.6	51.8	48.8	44.1	53.1
	Between Ogden Dr. and Spaulding Ave.	Commercial	52.8	51.0	48.0	43.3	52.3
	Between Spaulding. and Curson Ave.	Museum	54.6	52.8	49.8	45.1	54.1
	East of Curson Ave.	Commercial	52.3	50.5	47.5	42.8	51.8

Description	Off-Site Receptor	Nearest Noise Land Use(s)	Coordinates		Leq	Daytime	Evening	Nighttime	CNEL
			X	Y	dBA	dBA	dBA	dBA	dBA
Multi-family residence on the north side of West 6th Street, northwest of the project site.	ST2	Multi-Family Residential	11374577.61	3770195.09	52.9	51.1	48.1	43.4	52.4
Multi-family residence on the north side of West 6th Street, northwest of the project site.	ST3	Multi-Family Residential	11374737.35	3770194.94	42.9	41.1	38.1	33.4	42.4
Multi-family residence on the north side of West 6th Street, northeast of the project site.	ST5	Multi-Family Residential	11374999.12	3770191.44	51.1	49.3	46.3	41.6	50.6
Multi-family residence on the east side of Curson Avenue, east of the project site.	ST6	Multi-Family Residential	11375004.59	3770097.23	54.9	53.1	50.1	45.4	54.4
Mixed-use commercial building on the east side of Curson Avenue, east of the project site.	ST7	Commercial	11375000.15	3769984.29	55.3	53.5	50.5	45.8	54.8
Office building on the south side of Wilshire Boulevard, southeast of the project site.	ST8	Commercial	11374965.74	3769888.53	54.6	52.8	49.8	45.1	54.1
Commercial building on the south side of Wilshire Boulevard, south of the project site.	ST9	Commercial	11374857.07	3769896.35	54.3	52.5	49.5	44.8	53.8
Commercial building on the south side of Wilshire Boulevard, southwest of the project site.	ST10	Commercial	11374597.98	3769921.79	52.5	50.7	47.7	43.0	52.0

Roadway Traffic Noise Levels - Related Projects Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
Wilshire Boulevard - Ogden Dr EB T Traffic direction: In entry direction					
	Total	113	56	none	Average (of DGAC and PCC)
	Automobiles	111	56		
	Medium trucks	-	56		
	Heavy trucks	2	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Spaulding Avenue EB T Traffic direction: In entry direction					
	Total	109	56	none	Average (of DGAC and PCC)
	Automobiles	107	56		
	Medium trucks	-	56		
	Heavy trucks	2	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Curson Avenue EB T Traffic direction: In entry direction					
	Total	109	56	none	Average (of DGAC and PCC)
	Automobiles	107	56		
	Medium trucks	-	56		
	Heavy trucks	2	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Curson Avenue EB T2 Traffic direction: In entry direction					
	Total	330	56	none	Average (of DGAC and PCC)
	Automobiles	330	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard - Ogden Dr WB T Traffic direction: In entry direction					
	Total	229	56	none	Average (of DGAC and PCC)
	Automobiles	228	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Spaulding Avenue WB T Traffic direction: In entry direction					
	Total	225	56	none	Average (of DGAC and PCC)
	Automobiles	221	56		
	Medium trucks	-	56		
	Heavy trucks	5	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Curson Avenue WB T Traffic direction: In entry direction					
	Total	225	56	none	Average (of DGAC and PCC)
	Automobiles	221	56		
	Medium trucks	-	56		
	Heavy trucks	5	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Curson Avenue WB T1 Traffic direction: In entry direction					
	Total	31	56	none	Average (of DGAC and PCC)
	Automobiles	31	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Drive-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	8	56	none	Average (of DGAC and PCC)
	Automobiles	8	56		
	Medium trucks	-	56		
	Heavy trucks	0	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Drive-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	8	56	none	Average (of DGAC and PCC)
	Automobiles	8	56		
	Medium trucks	-	56		
	Heavy trucks	0	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Spaulding Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Spaulding Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	674	56	none	Average (of DGAC and PCC)
	Automobiles	661	56		
	Medium trucks	-	56		
	Heavy trucks	13	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard NB W1 Traffic direction: In entry direction					
	Total	337	56	none	Average (of DGAC and PCC)
	Automobiles	330	56		
	Medium trucks	-	56		
	Heavy trucks	7	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			

Roadway Traffic Noise Levels - Related Projects Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
Wilshire Boulevard-Curson Avenue WB T1 1 Traffic direction: In entry direction					
	Total	30	56	none	Average (of DGAC and PCC)
	Automobiles	29	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard NB W2 Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard SB Traffic direction: In entry direction					
	Total	80	56	none	Average (of DGAC and PCC)
	Automobiles	78	56		
	Medium trucks	-	56		
	Heavy trucks	2	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	1	56	none	Average (of DGAC and PCC)
	Automobiles	1	56		
	Medium trucks	-	56		
	Heavy trucks	0	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Curson Avenue WB T Traffic direction: In entry direction					
	Total	6	56	none	Average (of DGAC and PCC)
	Automobiles	6	56		
	Medium trucks	-	56		
	Heavy trucks	0	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Curson Avenue WB T Traffic direction: In entry direction					
	Total	180	56	none	Average (of DGAC and PCC)
	Automobiles	176	56		
	Medium trucks	-	56		
	Heavy trucks	4	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Ogden Dr WB T Traffic direction: In entry direction					
	Total	201	56	none	Average (of DGAC and PCC)
	Automobiles	197	56		
	Medium trucks	-	56		
	Heavy trucks	4	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Ogden Dr EB T Traffic direction: In entry direction					
	Total	99	56	none	Average (of DGAC and PCC)
	Automobiles	97	56		
	Medium trucks	-	56		
	Heavy trucks	2	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Curson Avenue EB T Traffic direction: In entry direction					
	Total	84	56	none	Average (of DGAC and PCC)
	Automobiles	82	56		
	Medium trucks	-	56		
	Heavy trucks	2	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Curson Avenue EB T Traffic direction: In entry direction					
	Total	167	56	none	Average (of DGAC and PCC)
	Automobiles	164	56		
	Medium trucks	-	56		
	Heavy trucks	3	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-6th Street NB W Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-6th Street SB W Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Dr-6th Street SB W Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Dr-6th Street NB W Traffic direction: In entry direction					
	Total	-	56	none	Average (of DGAC and PCC)
	Automobiles	-	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			

Roadway Traffic Noise Levels - Related Projects Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
Curson Avenue-Wilshire Boulevard NB Traffic direction: In entry direction					
	Total	337	56		
	Automobiles	330	56		
	Medium trucks	-	56		
	Heavy trucks	7	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-		none	Average (of DGAC and PCC)
Ogden Dr-6th Street EB S Traffic direction: In entry direction					
	Total	20	56		
	Automobiles	20	56		
	Medium trucks	-	56		
	Heavy trucks	0	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Dr-6th Street NB E Traffic direction: In entry direction					
	Total	26	56		
	Automobiles	25	56		
	Medium trucks	-	56		
	Heavy trucks	1	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			

Roadway Segment		Adjacent Land Use	Leq	Daytime	Evening	Nighttime	CNEL
			dBA	dBA	dBA	dBA	dBA
6th Street	Between Fairfax Ave. and Ogden Dr.	Residential	62.4	60.6	57.6	52.9	61.9
	Between Ogden Dr. and Curson Ave.	Residential	62.2	60.4	57.4	52.7	61.7
	East of Curson Ave.	Residential	59.4	57.6	54.6	49.9	58.9
Ogden Drive	North of 6th St.	Residential	51.3	49.5	46.5	41.8	50.8
	South of Wilshire Blvd.	Commercial	54.7	52.9	49.9	45.2	54.2
Spaulding Avenue	South of Wilshire Blvd.	Commercial	56.6	54.8	51.8	47.1	56.1
Curson Avenue	North of 6th St.	Residential	57.3	55.5	52.5	47.8	56.8
	Between 6th St. and Wilshire Blvd.	Residential	65.7	63.9	60.9	56.2	65.2
	South of Wilshire Blvd.	Residential	64.6	62.8	59.8	55.1	64.1
Wilshire Boulevard	Between Fairfax Ave. and Ogden Dr.	Museum	59.6	57.8	54.8	50.1	59.1
	Between Ogden Dr. and Spaulding Ave.	Commercial	58.7	56.9	53.9	49.2	58.2
	Between Spaulding. and Curson Ave.	Museum	60.6	58.8	55.8	51.1	60.1
	East of Curson Ave.	Commercial	61.0	59.2	56.2	51.5	60.5

Roadway Traffic Noise Levels - Related Projects Weekday

Station	Vehicles type	Traffic values				Control	Road surface
		AM	midday	PM	Speed		
		Veh/h	Veh/h	Veh/h	km/h		
Wilshire Boulevard - Ogden Dr EB T Traffic direction: In entry direction							
	Total	952	1182	1923	56		
	Automobiles	933	1158	1885	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	19	24	38	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Spaulding Avenue EB T Traffic direction: In entry direction							
	Total	333	126	164	56		
	Automobiles	326	123	161	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	7	3	3	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue EB T Traffic direction: In entry direction							
	Total	333	126	164	56		
	Automobiles	326	123	161	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	7	3	3	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue EB T2 Traffic direction: In entry direction							
	Total	955	389	504	56		
	Automobiles	955	389	504	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard - Ogden Dr WB T Traffic direction: In entry direction							
	Total	117	268	347	56		
	Automobiles	117	267	346	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	1	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Spaulding Avenue WB T Traffic direction: In entry direction							
	Total	120	265	340	56		
	Automobiles	118	260	333	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	2	5	7	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue WB T Traffic direction: In entry direction							
	Total	128	265	340	56		
	Automobiles	125	260	333	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	3	5	7	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue WB T1 Traffic direction: In entry direction							
	Total	73	36	42	56		
	Automobiles	73	36	42	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Drive-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Drive-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	10	6	3	56		
	Automobiles	10	6	3	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	0	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Spaulding Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Spaulding Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	9	-	-	56		
	Automobiles	9	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	328	798	1035	56		
	Automobiles	321	782	1014	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	7	16	21	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard NB W1 Traffic direction: In entry direction							
	Total	82	399	517	56		
	Automobiles	80	391	507	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	2	8	10	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue WB T1 1 Traffic direction: In entry direction							
	Total	73	36	42	56		
	Automobiles	72	35	41	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	1	1	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			

Roadway Traffic Noise Levels - Related Projects Weekday

Station	Vehicles type	Traffic values AM Veh/h	midday Veh/h	PM Veh/h	Speed km/h	Control	Road surface
Curson Avenue-Wilshire Boulevard NB W2 Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard SB Traffic direction: In entry direction							
	Total	423	95	123	56		
	Automobiles	415	93	121	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	8	2	2	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	1	2	2	56		
	Automobiles	1	2	2	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	0	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Curson Avenue WB T Traffic direction: In entry direction							
	Total	7	6	6	56		
	Automobiles	7	6	6	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	0	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Curson Avenue WB T Traffic direction: In entry direction							
	Total	49	212	273	56		
	Automobiles	48	208	268	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	1	4	5	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Ogden Dr WB T Traffic direction: In entry direction							
	Total	47	228	301	56		
	Automobiles	46	223	295	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	1	5	6	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Ogden Dr EB T Traffic direction: In entry direction							
	Total	453	111	133	56		
	Automobiles	444	109	130	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	9	2	3	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Curson Avenue EB T Traffic direction: In entry direction							
	Total	430	99	128	56		
	Automobiles	421	97	125	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	9	2	3	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Curson Avenue EB T Traffic direction: In entry direction							
	Total	47	197	255	56		
	Automobiles	46	193	250	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	1	4	5	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-6th Street NB W Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-6th Street SB W Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Dr-6th Street SB W Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Dr-6th Street NB W Traffic direction: In entry direction							
	Total	-	-	-	56		
	Automobiles	-	-	-	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard NB Traffic direction: In entry direction							
	Total	82	399	517	56		
	Automobiles	80	391	507	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	2	8	10	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-		none	Average (of DGAC and PCC)
Ogden Dr-6th Street EB S Traffic direction: In entry direction							
	Total	26	16	9	56		
	Automobiles	25	16	9	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	1	0	0	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			

Roadway Traffic Noise Levels - Related Projects Weekday

Station	Traffic values					Control	Road surface
	Vehicles type	AM	midday	PM	Speed		
		Veh/h	Veh/h	Veh/h	km/h		
Ogden Dr-6th Street NB E Traffic direction: In entry direction							
	Total	1	20	32	56	none	Average (of DGAC and PCC)
	Automobiles	1	20	31	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	0	1	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			

Roadway Segment		Adjacent Land Use	Leq	Daytime	Evening	Nighttime	CNEL
			dBA	dBA	dBA	dBA	dBA
6th Street	Between Fairfax Ave. and Ogden Dr.	Residential	64.1	62.3	59.3	54.6	63.6
	Between Ogden Dr. and Curson Ave.	Residential	64.0	62.2	59.2	54.5	63.5
	East of Curson Ave.	Residential	61.2	59.4	56.4	51.7	60.7
Ogden Drive	North of 6th St.	Residential	53.1	51.3	48.3	43.6	52.6
	South of Wilshire Blvd.	Commercial	57.9	56.1	53.1	48.4	57.4
Spaulding Avenue	South of Wilshire Blvd.	Commercial	58.5	56.7	53.7	49.0	58.0
Curson Avenue	North of 6th St.	Residential	59.6	57.8	54.8	50.1	59.1
	Between 6th St. and Wilshire Blvd.	Residential	67.6	65.8	62.8	58.1	67.1
	South of Wilshire Blvd.	Residential	66.5	64.7	61.7	57.0	66.0
Wilshire Boulevard	Between Fairfax Ave. and Ogden Dr.	Museum	68.7	66.9	63.9	59.2	68.2
	Between Ogden Dr. and Spaulding Ave.	Commercial	60.9	59.1	56.1	51.4	60.4
	Between Spaulding. and Curson Ave.	Museum	63.3	61.5	58.5	53.8	62.8
	East of Curson Ave.	Commercial	64.8	63.0	60.0	55.3	64.3

Roadway Traffic Noise Levels - Opening Year without Project Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
Wilshire Boulevard - Ogden Dr EB T Traffic direction: In entry direction					
	Total	1025	56	none	Average (of DGAC and PCC)
	Automobiles	1005	56		
	Medium trucks	-	56		
	Heavy trucks	21	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Spaulding Avenue EB T Traffic direction: In entry direction					
	Total	1041	56	none	Average (of DGAC and PCC)
	Automobiles	1020	56		
	Medium trucks	-	56		
	Heavy trucks	21	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Curson Avenue EB T Traffic direction: In entry direction					
	Total	1003	56	none	Average (of DGAC and PCC)
	Automobiles	983	56		
	Medium trucks	-	56		
	Heavy trucks	20	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Curson Avenue EB T2 Traffic direction: In entry direction					
	Total	1227	56	none	Average (of DGAC and PCC)
	Automobiles	1227	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard - Ogden Dr WB T Traffic direction: In entry direction					
	Total	924	56	none	Average (of DGAC and PCC)
	Automobiles	923	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Spaulding Avenue WB T Traffic direction: In entry direction					
	Total	918	56	none	Average (of DGAC and PCC)
	Automobiles	900	56		
	Medium trucks	-	56		
	Heavy trucks	18	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Curson Avenue WB T Traffic direction: In entry direction					
	Total	909	56	none	Average (of DGAC and PCC)
	Automobiles	891	56		
	Medium trucks	-	56		
	Heavy trucks	18	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Curson Avenue WB T1 Traffic direction: In entry direction					
	Total	631	56	none	Average (of DGAC and PCC)
	Automobiles	631	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Drive-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	51	56	none	Average (of DGAC and PCC)
	Automobiles	50	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Drive-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	29	56	none	Average (of DGAC and PCC)
	Automobiles	28	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Spaulding Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	109	56	none	Average (of DGAC and PCC)
	Automobiles	107	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	2	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Spaulding Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	144	56	none	Average (of DGAC and PCC)
	Automobiles	141	56		
	Medium trucks	-	56		
	Heavy trucks	3	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	1069	56	none	Average (of DGAC and PCC)
	Automobiles	1048	56		
	Medium trucks	-	56		
	Heavy trucks	21	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard NB W1 Traffic direction: In entry direction					
	Total	728	56	none	Average (of DGAC and PCC)
	Automobiles	713	56		
	Medium trucks	-	56		
	Heavy trucks	15	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			

Roadway Traffic Noise Levels - Opening Year without Project Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
Wilshire Boulevard-Curson Avenue WB T1 1 Traffic direction: In entry direction					
	Total	525	56	none	Average (of DGAC and PCC)
	Automobiles	515	56		
	Medium trucks	-	56		
	Heavy trucks	11	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard NB W2 Traffic direction: In entry direction					
	Total	71	56	none	Average (of DGAC and PCC)
	Automobiles	70	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard SB Traffic direction: In entry direction					
	Total	479	56	none	Average (of DGAC and PCC)
	Automobiles	469	56		
	Medium trucks	-	56		
	Heavy trucks	10	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	259	56	none	Average (of DGAC and PCC)
	Automobiles	254	56		
	Medium trucks	-	56		
	Heavy trucks	5	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Curson Avenue WB T Traffic direction: In entry direction					
	Total	716	56	none	Average (of DGAC and PCC)
	Automobiles	702	56		
	Medium trucks	-	56		
	Heavy trucks	14	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Curson Avenue WB T Traffic direction: In entry direction					
	Total	1342	56	none	Average (of DGAC and PCC)
	Automobiles	1315	56		
	Medium trucks	-	56		
	Heavy trucks	27	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Ogden Dr WB T Traffic direction: In entry direction					
	Total	1386	56	none	Average (of DGAC and PCC)
	Automobiles	1358	56		
	Medium trucks	-	56		
	Heavy trucks	28	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Ogden Dr EB T Traffic direction: In entry direction					
	Total	1155	56	none	Average (of DGAC and PCC)
	Automobiles	1132	56		
	Medium trucks	-	56		
	Heavy trucks	23	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Curson Avenue EB T Traffic direction: In entry direction					
	Total	1081	56	none	Average (of DGAC and PCC)
	Automobiles	1059	56		
	Medium trucks	-	56		
	Heavy trucks	22	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Curson Avenue EB T Traffic direction: In entry direction					
	Total	777	56	none	Average (of DGAC and PCC)
	Automobiles	761	56		
	Medium trucks	-	56		
	Heavy trucks	16	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-6th Street NB W Traffic direction: In entry direction					
	Total	153	56	none	Average (of DGAC and PCC)
	Automobiles	150	56		
	Medium trucks	-	56		
	Heavy trucks	3	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-6th Street SB W Traffic direction: In entry direction					
	Total	148	56	none	Average (of DGAC and PCC)
	Automobiles	145	56		
	Medium trucks	-	56		
	Heavy trucks	3	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Dr-6th Street SB W Traffic direction: In entry direction					
	Total	57	56	none	Average (of DGAC and PCC)
	Automobiles	56	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Dr-6th Street NB W Traffic direction: In entry direction					
	Total	34	56	none	Average (of DGAC and PCC)
	Automobiles	33	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			

Roadway Traffic Noise Levels - Opening Year without Project Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
Curson Avenue-Wilshire Boulevard NB Traffic direction: In entry direction					
	Total	799	56		
	Automobiles	783	56		
	Medium trucks	-	56		
	Heavy trucks	16	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-		none	Average (of DGAC and PCC)
Ogden Dr-6th Street EB S Traffic direction: In entry direction					
	Total	239	56		
	Automobiles	234	56		
	Medium trucks	-	56		
	Heavy trucks	5	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Dr-6th Street NB E Traffic direction: In entry direction					
	Total	186	56		
	Automobiles	182	56		
	Medium trucks	-	56		
	Heavy trucks	4	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			

Roadway Segment		Adjacent Land Use	Leq	Daytime	Evening	Nighttime	CNEL
			dBA	dBA	dBA	dBA	dBA
6th Street	Between Fairfax Ave. and Ogden Dr.	Residential	71.4	69.6	66.6	61.9	70.9
	Between Ogden Dr. and Curson Ave.	Residential	71.4	69.6	66.6	61.9	70.9
	East of Curson Ave.	Residential	69.4	67.6	64.6	59.9	68.9
Ogden Drive	North of 6th St.	Residential	62.7	60.9	57.9	53.2	62.2
	South of Wilshire Blvd.	Commercial	62.5	60.7	57.7	53.0	62.0
Spaulding Avenue	South of Wilshire Blvd.	Commercial	64.8	63.0	60.0	55.3	64.3
Curson Avenue	North of 6th St.	Residential	67.3	65.5	62.5	57.8	66.8
	Between 6th St. and Wilshire Blvd.	Residential	70.4	68.6	65.6	60.9	69.9
	South of Wilshire Blvd.	Residential	71.1	69.3	66.3	61.6	70.6
Wilshire Boulevard	Between Fairfax Ave. and Ogden Dr.	Museum	67.6	65.8	62.8	58.1	67.1
	Between Ogden Dr. and Spaulding Ave.	Commercial	66.8	65.0	62.0	57.3	66.3
	Between Spaulding. and Curson Ave.	Museum	68.7	66.9	63.9	59.2	68.2
	East of Curson Ave.	Commercial	67.8	66.0	63.0	58.3	67.3

Roadway Traffic Noise Levels - Opening Year without Project Weekday

Station	Vehicles type	Traffic values				Control	Road surface
		AM	midday	PM	Speed		
		Veh/h	Veh/h	Veh/h	km/h		
Wilshire Boulevard - Ogden Dr EB T Traffic direction: In entry direction							
	Total	952	1182	1923	56		
	Automobiles	933	1158	1885	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	19	24	38	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Spaulding Avenue EB T Traffic direction: In entry direction							
	Total	952	1187	1930	56		
	Automobiles	933	1163	1891	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	19	24	39	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue EB T Traffic direction: In entry direction							
	Total	945	1167	1936	56		
	Automobiles	926	1144	1897	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	19	23	39	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue EB T2 Traffic direction: In entry direction							
	Total	1775	1429	2197	56		
	Automobiles	1775	1429	2197	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard - Ogden Dr WB T Traffic direction: In entry direction							
	Total	1403	1014	1079	56		
	Automobiles	1401	1012	1076	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	2	2	3	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Spaulding Avenue WB T Traffic direction: In entry direction							
	Total	1418	1009	1052	56		
	Automobiles	1390	989	1031	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	28	20	21	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue WB T Traffic direction: In entry direction							
	Total	1369	1000	1041	56		
	Automobiles	1342	980	1020	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	27	20	21	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue WB T1 Traffic direction: In entry direction							
	Total	1201	744	794	56		
	Automobiles	1201	744	794	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Drive-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	10	34	69	56		
	Automobiles	10	33	68	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	1	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Drive-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	20	19	56	56		
	Automobiles	20	19	55	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	0	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Spaulding Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	127	72	86	56		
	Automobiles	124	71	84	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	3	1	2	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Spaulding Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	85	83	69	56		
	Automobiles	83	81	68	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	2	2	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	934	1129	1392	56		
	Automobiles	915	1106	1364	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	19	23	28	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard NB W1 Traffic direction: In entry direction							
	Total	504	691	906	56		
	Automobiles	494	677	888	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	10	14	18	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue WB T1 1 Traffic direction: In entry direction							
	Total	1003	613	654	56		
	Automobiles	983	601	641	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	20	12	13	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			

Roadway Traffic Noise Levels - Opening Year without Project Weekday

Station	Vehicles type	Traffic values				Control	Road surface
		AM	midday	PM	Speed		
		Veh/h	Veh/h	Veh/h	km/h		
Curson Avenue-Wilshire Boulevard NB W2 Traffic direction: In entry direction							
	Total	115	91	91	56		
	Automobiles	113	89	89	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	2	2	2	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard SB Traffic direction: In entry direction							
	Total	812	383	408	56		
	Automobiles	796	375	400	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	16	8	8	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	359	176	272	56		
	Automobiles	352	172	267	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	7	4	5	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Curson Avenue WB T Traffic direction: In entry direction							
	Total	1941	712	822	56		
	Automobiles	1902	698	806	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	39	14	16	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Curson Avenue WB T Traffic direction: In entry direction							
	Total	2184	1224	1041	56		
	Automobiles	2140	1200	1020	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	44	24	21	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Ogden Dr WB T Traffic direction: In entry direction							
	Total	2175	1238	1120	56		
	Automobiles	2132	1213	1098	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	44	25	22	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Ogden Dr EB T Traffic direction: In entry direction							
	Total	1006	989	1139	56		
	Automobiles	986	969	1116	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	20	20	23	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Curson Avenue EB T Traffic direction: In entry direction							
	Total	1003	971	1174	56		
	Automobiles	983	952	1151	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	20	19	23	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Curson Avenue EB T Traffic direction: In entry direction							
	Total	728	871	1544	56		
	Automobiles	713	854	1513	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	15	17	31	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-6th Street NB W Traffic direction: In entry direction							
	Total	183	143	235	56		
	Automobiles	179	140	230	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	4	3	5	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-6th Street SB W Traffic direction: In entry direction							
	Total	297	135	189	56		
	Automobiles	291	132	185	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	6	3	4	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Dr-6th Street SB W Traffic direction: In entry direction							
	Total	100	26	41	56		
	Automobiles	98	25	40	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	2	1	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Dr-6th Street NB W Traffic direction: In entry direction							
	Total	29	21	50	56		
	Automobiles	28	21	49	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	1	0	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard NB Traffic direction: In entry direction							
	Total	650	688	994	56		
	Automobiles	637	674	974	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	13	14	20	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Dr-6th Street EB S Traffic direction: In entry direction							
	Total	66	113	45	56		
	Automobiles	65	111	44	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	1	2	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			

Roadway Traffic Noise Levels - Opening Year without Project Weekday

Station	Traffic values					Control	Road surface
	Vehicles type	AM	midday	PM	Speed		
		Veh/h	Veh/h	Veh/h	km/h		
Ogden Dr-6th Street NB E Traffic direction: In entry direction							
	Total	10	104	158	56	none	Average (of DGAC and PCC)
	Automobiles	10	102	155	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	2	3	56		
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			

Roadway Segment		Adjacent Land Use	Leq	Daytime	Evening	Nighttime	CNEL
			dBA	dBA	dBA	dBA	dBA
6th Street	Between Fairfax Ave. and Ogden Dr.	Residential	72.7	70.9	67.9	63.2	72.2
	Between Ogden Dr. and Curson Ave.	Residential	73.0	71.2	68.2	63.5	72.5
	East of Curson Ave.	Residential	72.1	70.3	67.3	62.6	71.6
Ogden Drive	North of 6th St.	Residential	63.9	62.1	59.1	54.4	63.4
	South of Wilshire Blvd.	Commercial	64.6	62.8	59.8	55.1	64.1
Spaulding Avenue	South of Wilshire Blvd.	Commercial	66.6	64.8	61.8	57.1	66.1
Curson Avenue	North of 6th St.	Residential	68.8	67.0	64.0	59.3	68.3
	Between 6th St. and Wilshire Blvd.	Residential	71.0	69.2	66.2	61.5	70.5
	South of Wilshire Blvd.	Residential	73.0	71.2	68.2	63.5	72.5
Wilshire Boulevard	Between Fairfax Ave. and Ogden Dr.	Museum	69.8	68.0	65.0	60.3	69.3
	Between Ogden Dr. and Spaulding Ave.	Commercial	68.9	67.1	64.1	59.4	68.4
	Between Spaulding. and Curson Ave.	Museum	71.0	69.2	66.2	61.5	70.5
	East of Curson Ave.	Commercial	69.7	67.9	64.9	60.2	69.2

Mechanical Equipment Noise Calculations

Off-Site Receptor	Estimated Noise Levels from Mechanical Equipment				
	L_{eq}	CNEL[a]	Ld	Le	Ln
	dBA	dBA	dBA	dBA	dBA
ST2	50.1	51.3	50.1	50.1	40.6
ST3	59.2	60.4	59.2	59.2	49.7
ST5	53.1	54.3	53.1	53.1	43.6
ST6	57.2	58.4	57.2	57.2	47.7
ST7	56.4	57.6	56.4	56.4	46.9
ST8	52.1	53.3	52.1	52.1	42.6
ST9	52.0	53.2	52.0	52.0	42.5
ST10	47.3	48.5	47.3	47.3	37.8

[a] Assumes a daily operation from 6:00 a.m. to 10:00 p.m.

Off-Site Receptor	Ambient	Ambient plus Project	Increase	Ambient	Ambient plus Project	Increase
	L_{eq}	L_{eq}	L_{eq}	CNEL	CNEL	CNEL
	dBA	dBA	dBA	dBA	dBA	dBA
ST2	67.5	67.6	0.1	68.1	68.2	0.1
ST3	65.5	66.4	0.9	66.4	67.4	1.0
ST5	74.9	74.9	0.0	75.1	75.1	0.0
ST6	62.8	63.9	1.1	64.4	65.4	1.0
ST7	64.8	65.4	0.6	65.9	66.5	0.6
ST8	69.8	69.9	0.1	70.2	70.3	0.1
ST9	74.6	74.6	0.0	74.8	74.8	0.0
ST10	67.1	67.1	0.0	67.8	67.9	0.1

Traffic Noise Calculations

Off-Site Receptor	Estimated Traffic Noise Levels, CNEL			
	Project Only	Existing	Project plus Existing	Increase
	dBA	dBA	dBA	dBA
ST2	52.9	68.1	68.2	0.1
ST3	43.9	66.4	66.4	0.0
ST5	50.8	75.1	75.1	0.0
ST6	54.1	64.4	64.8	0.4
ST7	54.7	65.9	66.2	0.3
ST8	54.7	70.2	70.3	0.1
ST9	53.9	74.8	74.8	0.0
ST10	52.3	67.8	67.9	0.1

Loading and Trash Compactor Activities Noise Calculations

Off-Site Receptor	Estimated Noise Levels from Loading and Trash Compactor Activities				
	L_{eq}	CNEL [a]	Ld [b]	Le [b]	Ln [a]
	dBA	dBA	dBA	dBA	dBA
ST2	48.8	46.0	42.8	48.8	0.0
ST3	54.4	51.6	48.4	54.4	0.0
ST5	57.2	54.4	51.2	57.2	0.0
ST6	59.2	56.4	53.2	59.2	0.0
ST7	55.1	52.3	49.1	55.1	0.0
ST8	51.9	49.1	45.9	51.9	0.0
ST9	52.3	49.5	46.3	52.3	0.0
ST10	48.1	45.3	42.1	48.1	0.0

[a] Assumes a daily operation from 7:00 a.m. to 10:00 p.m.

[b] Loading and trash compactor activities will occur a maximum of 3 hours per day.

Off-Site Receptor	Ambient	Ambient plus Project	Increase	Ambient	Ambient plus Project	Increase
	L_{eq}	L_{eq}	L_{eq}	CNEL	CNEL	CNEL
	dBA	dBA	dBA	dBA	dBA	dBA
ST2	67.5	67.6	0.1	68.1	68.1	0.0
ST3	65.5	65.8	0.3	66.4	66.5	0.1
ST5	74.9	75.0	0.1	75.1	75.1	0.0
ST6	62.8	64.4	1.6	64.4	65.0	0.6
ST7	64.8	65.2	0.4	65.9	66.1	0.2
ST8	69.8	69.9	0.1	70.2	70.2	0.0
ST9	74.6	74.6	0.0	74.8	74.8	0.0
ST10	67.1	67.1	0.1	67.8	67.8	0.0

Parking Noise Calculations

Off-Site Receptor	Estimated Noise Levels from Parking				
	L_{eq}	CNEL[a]	Ld	Le	Ln
	dBA	dBA	dBA	dBA	dBA
ST2	29.0	30.2	29.0	29.0	19.5
ST3	37.1	38.3	37.1	37.1	27.6
ST5	42.2	43.4	42.2	42.2	32.7
ST6	43.8	45.0	43.8	43.8	34.3
ST7	33.4	34.6	33.4	33.4	23.9
ST8	26.2	27.4	26.2	26.2	16.7
ST9	28.2	29.4	28.2	28.2	18.7
ST10	24.5	25.7	24.5	24.5	15.0

[a] Assumes a daily operation from 6:00 a.m. to 10:00 p.m.

Off-Site Receptor	Ambient	Ambient plus Project	Increase	Ambient	Ambient plus Project	Increase
	L_{eq}	L_{eq}	L_{eq}	CNEL	CNEL	CNEL
	dBA	dBA	dBA	dBA	dBA	dBA
ST2	67.5	67.5	0.0	68.1	68.1	0.0
ST3	65.5	65.5	0.0	66.4	66.4	0.0
ST5	74.9	74.9	0.0	75.1	75.1	0.0
ST6	62.8	62.9	0.1	64.4	64.4	0.0
ST7	64.8	64.8	0.0	65.9	65.9	0.0
ST8	69.8	69.8	0.0	70.2	70.2	0.0
ST9	74.6	74.6	0.0	74.8	74.8	0.0
ST10	67.1	67.1	0.0	67.8	67.8	0.0

Outdoor Activities Noise Calculations

Off-Site Receptor	Estimated Noise Levels from Outdoor Activities				
	L_{eq}	CNEL[a]	Ld	Le	Ln
	dBA	dBA	dBA	dBA	dBA
ST2	42.7	39.7	42.7	0.0	0.0
ST3	46.9	43.9	46.9	0.0	0.0
ST5	47.9	44.9	47.9	0.0	0.0
ST6	51.8	48.8	51.8	0.0	0.0
ST7	50.7	47.7	50.7	0.0	0.0
ST8	46.4	43.4	46.4	0.0	0.0
ST9	46.7	43.7	46.7	0.0	0.0
ST10	42.0	39.0	42.0	0.0	0.0

[a] Assumes a daily operation from 7:00 a.m. to 7:00 p.m.

Off-Site Receptor	Ambient	Ambient plus Project	Increase	Ambient	Ambient plus Project	Increase
	L_{eq}	L_{eq}	L_{eq}	CNEL	CNEL	CNEL
	dBA	dBA	dBA	dBA	dBA	dBA
ST2	67.5	67.5	0.0	68.1	68.1	0.0
ST3	65.5	65.6	0.1	66.4	66.4	0.0
ST5	74.9	74.9	0.0	75.1	75.1	0.0
ST6	62.8	63.1	0.3	64.4	64.5	0.1
ST7	64.8	65.0	0.2	65.9	66.0	0.1
ST8	69.8	69.8	0.0	70.2	70.2	0.0
ST9	74.6	74.6	0.0	74.8	74.8	0.0
ST10	67.1	67.1	0.0	67.8	67.8	0.0

Project Composite Noise Calculations

Off-Site Receptor	Estimated Noise Levels								
	Ambient	Traffic	Mechanical	Parking	Trash Compactor and Loading	Outdoor	Project Composite	Ambient plus Project	Increase
	CNEL	CNEL	CNEL	CNEL	CNEL	CNEL	CNEL	CNEL	CNEL
	dBA	dBA	dBA	dBA	dBA	dBA	dBA	dBA	dBA
ST2	68.1	52.9	51.3	30.2	46.0	39.7	55.8	68.3	0.2
ST3	66.4	43.9	60.4	38.3	51.6	43.9	61.1	67.5	1.1
ST5	75.1	50.8	54.3	43.4	54.4	44.9	58.5	75.2	0.1
ST6	64.4	54.1	58.4	45.0	56.4	48.8	61.7	66.3	1.9
ST7	65.9	54.7	57.6	34.6	52.3	47.7	60.4	67.0	1.1
ST8	70.2	54.7	53.3	27.4	49.1	43.4	57.8	70.4	0.2
ST9	74.8	53.9	53.2	29.4	49.5	43.7	57.5	74.9	0.1
ST10	67.8	52.3	48.5	25.7	45.3	39.0	54.5	68.0	0.2

Roadway Traffic Noise Levels - Opening Year with Project Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
Wilshire Boulevard - Ogden Dr EB T Traffic direction: In entry direction					
	Total	1057	56	none	Average (of DGAC and PCC)
	Automobiles	1036	56		
	Medium trucks	-	56		
	Heavy trucks	21	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Spaulding Avenue EB T Traffic direction: In entry direction					
	Total	1073	56	none	Average (of DGAC and PCC)
	Automobiles	1052	56		
	Medium trucks	-	56		
	Heavy trucks	21	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Curson Avenue EB T Traffic direction: In entry direction					
	Total	1035	56	none	Average (of DGAC and PCC)
	Automobiles	1014	56		
	Medium trucks	-	56		
	Heavy trucks	21	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Curson Avenue EB T2 Traffic direction: In entry direction					
	Total	1254	56	none	Average (of DGAC and PCC)
	Automobiles	1254	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard - Ogden Dr WB T Traffic direction: In entry direction					
	Total	971	56	none	Average (of DGAC and PCC)
	Automobiles	969	56		
	Medium trucks	-	56		
	Heavy trucks	2	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Spaulding Avenue WB T Traffic direction: In entry direction					
	Total	965	56	none	Average (of DGAC and PCC)
	Automobiles	946	56		
	Medium trucks	-	56		
	Heavy trucks	19	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Curson Avenue WB T Traffic direction: In entry direction					
	Total	956	56	none	Average (of DGAC and PCC)
	Automobiles	937	56		
	Medium trucks	-	56		
	Heavy trucks	19	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Wilshire Boulevard-Curson Avenue WB T1 Traffic direction: In entry direction					
	Total	644	56	none	Average (of DGAC and PCC)
	Automobiles	644	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Drive-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	51	56	none	Average (of DGAC and PCC)
	Automobiles	50	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Drive-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	29	56	none	Average (of DGAC and PCC)
	Automobiles	28	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Spaulding Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	109	56	none	Average (of DGAC and PCC)
	Automobiles	107	56		
	Medium trucks	-	56		
	Heavy trucks	-	56		
	Buses	2	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Spaulding Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	144	56	none	Average (of DGAC and PCC)
	Automobiles	141	56		
	Medium trucks	-	56		
	Heavy trucks	3	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction					
	Total	1084	56	none	Average (of DGAC and PCC)
	Automobiles	1062	56		
	Medium trucks	-	56		
	Heavy trucks	22	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard NB W1 Traffic direction: In entry direction					
	Total	760	56	none	Average (of DGAC and PCC)
	Automobiles	745	56		
	Medium trucks	-	56		
	Heavy trucks	15	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			

Roadway Traffic Noise Levels - Opening Year with Project Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
Wilshire Boulevard-Curson Avenue WB T1 1 Traffic direction: In entry direction					
	Total	525	56	none	Average (of DGAC and PCC)
	Automobiles	515	56		
	Medium trucks	-	56		
	Heavy trucks	11	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard NB W2 Traffic direction: In entry direction					
	Total	84	56	none	Average (of DGAC and PCC)
	Automobiles	82	56		
	Medium trucks	-	56		
	Heavy trucks	2	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard SB Traffic direction: In entry direction					
	Total	538	56	none	Average (of DGAC and PCC)
	Automobiles	527	56		
	Medium trucks	-	56		
	Heavy trucks	11	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction					
	Total	259	56	none	Average (of DGAC and PCC)
	Automobiles	254	56		
	Medium trucks	-	56		
	Heavy trucks	5	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Curson Avenue WB T Traffic direction: In entry direction					
	Total	724	56	none	Average (of DGAC and PCC)
	Automobiles	710	56		
	Medium trucks	-	56		
	Heavy trucks	14	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Curson Avenue WB T Traffic direction: In entry direction					
	Total	1365	56	none	Average (of DGAC and PCC)
	Automobiles	1338	56		
	Medium trucks	-	56		
	Heavy trucks	27	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Ogden Dr WB T Traffic direction: In entry direction					
	Total	1444	56	none	Average (of DGAC and PCC)
	Automobiles	1415	56		
	Medium trucks	-	56		
	Heavy trucks	29	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Ogden Dr EB T Traffic direction: In entry direction					
	Total	1232	56	none	Average (of DGAC and PCC)
	Automobiles	1207	56		
	Medium trucks	-	56		
	Heavy trucks	25	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Curson Avenue EB T Traffic direction: In entry direction					
	Total	1122	56	none	Average (of DGAC and PCC)
	Automobiles	1100	56		
	Medium trucks	-	56		
	Heavy trucks	22	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
6th Street-Curson Avenue EB T Traffic direction: In entry direction					
	Total	785	56	none	Average (of DGAC and PCC)
	Automobiles	769	56		
	Medium trucks	-	56		
	Heavy trucks	16	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-6th Street NB W Traffic direction: In entry direction					
	Total	147	56	none	Average (of DGAC and PCC)
	Automobiles	144	56		
	Medium trucks	-	56		
	Heavy trucks	3	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Curson Avenue-6th Street SB W Traffic direction: In entry direction					
	Total	148	56	none	Average (of DGAC and PCC)
	Automobiles	145	56		
	Medium trucks	-	56		
	Heavy trucks	3	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Dr-6th Street SB W Traffic direction: In entry direction					
	Total	57	56	none	Average (of DGAC and PCC)
	Automobiles	56	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Dr-6th Street NB W Traffic direction: In entry direction					
	Total	34	56	none	Average (of DGAC and PCC)
	Automobiles	33	56		
	Medium trucks	-	56		
	Heavy trucks	1	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			

Roadway Traffic Noise Levels - Opening Year with Project Weekend

Station	Traffic values			Control	Road surface
	Vehicles type	Saturday	Speed		
		Veh/h	km/h		
Curson Avenue-Wilshire Boulevard NB Traffic direction: In entry direction					
	Total	844	56		
	Automobiles	827	56		
	Medium trucks	-	56		
	Heavy trucks	17	56		
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-		none	Average (of DGAC and PCC)
Ogden Dr-6th Street EB S Traffic direction: In entry direction					
	Total	275	56		
	Automobiles	270	56		
	Medium trucks	-	56		
	Heavy trucks	6	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			
Ogden Dr-6th Street NB E Traffic direction: In entry direction					
	Total	221	56		
	Automobiles	217	56		
	Medium trucks	-	56		
	Heavy trucks	4	56	none	Average (of DGAC and PCC)
	Buses	-	56		
	Motorcycles	-	56		
	Auxiliary vehicle	-			

Roadway Segment		Adjacent Land Use	Leq	Daytime	Evening	Nighttime	CNEL
			dBA	dBA	dBA	dBA	dBA
6th Street	Between Fairfax Ave. and Ogden Dr.	Residential	71.6	69.8	66.8	62.1	71.1
	Between Ogden Dr. and Curson Ave.	Residential	71.5	69.7	66.7	62.0	71.0
	East of Curson Ave.	Residential	69.4	67.6	64.6	59.9	68.9
Ogden Drive	North of 6th St.	Residential	62.8	61.0	58.0	53.3	62.3
	South of Wilshire Blvd.	Commercial	62.7	60.9	57.9	53.2	62.2
Spaulding Avenue	South of Wilshire Blvd.	Commercial	65.0	63.2	60.2	55.5	64.5
Curson Avenue	North of 6th St.	Residential	67.4	65.6	62.6	57.9	66.9
	Between 6th St. and Wilshire Blvd.	Residential	70.7	68.9	65.9	61.2	70.2
	South of Wilshire Blvd.	Residential	71.2	69.4	66.4	61.7	70.7
Wilshire Boulevard	Between Fairfax Ave. and Ogden Dr.	Museum	67.8	66.0	63.0	58.3	67.3
	Between Ogden Dr. and Spaulding Ave.	Commercial	67.0	65.2	62.2	57.5	66.5
	Between Spaulding. and Curson Ave.	Museum	68.9	67.1	64.1	59.4	68.4
	East of Curson Ave.	Commercial	67.9	66.1	63.1	58.4	67.4

Roadway Traffic Noise Levels - Opening Year with Project Weekday

Station	Vehicles type	Traffic values				Control	Road surface
		AM	midday	PM	Speed		
		Veh/h	Veh/h	Veh/h	km/h		
Wilshire Boulevard - Ogden Dr EB T Traffic direction: In entry direction							
	Total	955	1206	1927	56		
	Automobiles	936	1182	1888	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	19	24	39	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Spaulding Avenue EB T Traffic direction: In entry direction							
	Total	955	1216	1934	56		
	Automobiles	936	1192	1895	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	19	24	39	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue EB T Traffic direction: In entry direction							
	Total	1031	1191	1940	56		
	Automobiles	1010	1167	1901	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	21	24	39	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue EB T2 Traffic direction: In entry direction							
	Total	1775	1463	2208	56		
	Automobiles	1775	1463	2208	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard - Ogden Dr WB T Traffic direction: In entry direction							
	Total	1403	1081	1102	56		
	Automobiles	1401	1079	1099	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	2	2	3	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Spaulding Avenue WB T Traffic direction: In entry direction							
	Total	1418	1076	1088	56		
	Automobiles	1390	1054	1066	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	28	22	22	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue WB T Traffic direction: In entry direction							
	Total	1369	1067	1071	56		
	Automobiles	1342	1046	1050	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	27	21	21	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue WB T1 Traffic direction: In entry direction							
	Total	1202	755	795	56		
	Automobiles	1202	755	795	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Drive-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	10	34	69	56		
	Automobiles	10	33	68	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	1	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Drive-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	20	19	56	56		
	Automobiles	20	19	55	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	0	0	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Spaulding Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	127	72	86	56		
	Automobiles	124	71	84	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	3	1	2	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Spaulding Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	85	83	69	56		
	Automobiles	83	81	68	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	2	2	1	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard NB E Traffic direction: In entry direction							
	Total	934	1145	1397	56		
	Automobiles	915	1122	1369	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	19	23	28	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard NB W1 Traffic direction: In entry direction							
	Total	507	715	910	56		
	Automobiles	497	701	892	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	10	14	18	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Wilshire Boulevard-Curson Avenue WB T1 1 Traffic direction: In entry direction							
	Total	1003	613	654	56		
	Automobiles	983	601	641	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	20	12	13	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			

Roadway Traffic Noise Levels - Opening Year with Project Weekday

Station	Traffic values					Control	Road surface
	Vehicles type	AM	midday	PM	Speed		
		Veh/h	Veh/h	Veh/h	km/h		
Curson Avenue-Wilshire Boulevard NB W2 Traffic direction: In entry direction							
	Total	116	101	92	56		
	Automobiles	114	99	90	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	2	2	2	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard SB Traffic direction: In entry direction							
	Total	822	468	437	56		
	Automobiles	806	459	428	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	16	9	9	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard EB S Traffic direction: In entry direction							
	Total	359	176	272	56		
	Automobiles	352	172	267	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	7	4	5	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Curson Avenue WB T Traffic direction: In entry direction							
	Total	1942	718	823	56		
	Automobiles	1903	704	807	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	39	14	16	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Curson Avenue WB T Traffic direction: In entry direction							
	Total	2184	1256	1053	56		
	Automobiles	2140	1231	1032	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	44	25	21	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Ogden Dr WB T Traffic direction: In entry direction							
	Total	2175	1320	1149	56		
	Automobiles	2132	1294	1126	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	44	26	23	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Ogden Dr EB T Traffic direction: In entry direction							
	Total	1012	1046	1924	56		
	Automobiles	992	1025	1886	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	20	21	38	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Curson Avenue EB T Traffic direction: In entry direction							
	Total	1028	1001	1801	56		
	Automobiles	1007	981	1765	56		
	Medium trucks	-	-	-	56		
	Heavy trucks	21	20	36	56	none	Average (of DGAC and PCC)
	Buses	-	-	-	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
6th Street-Curson Avenue EB T Traffic direction: In entry direction		-	-	-			
	Total				56		
	Automobiles	728	883	1548	56		
	Medium trucks	713	865	1517	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	15	18	31	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-6th Street NB W Traffic direction: In entry direction		-	-	-			
	Total				56		
	Automobiles	183	143	235	56		
	Medium trucks	179	140	230	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	4	3	5	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-6th Street SB W Traffic direction: In entry direction		-	-	-			
	Total				56		
	Automobiles	297	135	189	56		
	Medium trucks	291	132	185	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	6	3	4	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Dr-6th Street SB W Traffic direction: In entry direction		-	-	-			
	Total				56		
	Automobiles	100	26	41	56		
	Medium trucks	98	25	40	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	2	1	1	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Dr-6th Street NB W Traffic direction: In entry direction		-	-	-			
	Total				56		
	Automobiles	29	21	171	56		
	Medium trucks	28	21	168	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	1	0	3	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Curson Avenue-Wilshire Boulevard NB Traffic direction: In entry direction		-	-	-			
	Total				56		
	Automobiles	650	688	994	56		
	Medium trucks	637	674	974	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	13	14	20	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
Ogden Dr-6th Street EB S Traffic direction: In entry direction		-	-	-			
	Total				56		
	Automobiles	69	140	72	56		
	Medium trucks	68	137	71	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	1	3	1	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			

Roadway Traffic Noise Levels - Opening Year with Project Weekday

Station	Vehicles type	Traffic values				Control	Road surface
		AM	midday	PM	Speed		
		Veh/h	Veh/h	Veh/h	km/h		
Ogden Dr-6th Street NB E Traffic direction: In entry direction	-	-	-	-			
	Total				56		
	Automobiles	10	154	175	56		
	Medium trucks	10	151	172	56		
	Heavy trucks	-	-	-	56	none	Average (of DGAC and PCC)
	Buses	0	3	4	56		
	Motorcycles	-	-	-	56		
	Auxiliary vehicle	-	-	-			
		-	-	-			

Roadway Segment		Adjacent Land Use	Leq	Daytime	Evening	Nighttime	CNEL
			dBA	dBA	dBA	dBA	dBA
6th Street	Between Fairfax Ave. and Ogden Dr.	Residential	72.7	70.9	67.9	63.2	72.2
	Between Ogden Dr. and Curson Ave.	Residential	73.1	71.3	68.3	63.6	72.6
	East of Curson Ave.	Residential	72.1	70.3	67.3	62.6	71.6
Ogden Drive	North of 6th St.	Residential	64.2	62.4	59.4	54.7	63.7
	South of Wilshire Blvd.	Commercial	64.6	62.8	59.8	55.1	64.1
Spaulding Avenue	South of Wilshire Blvd.	Commercial	66.6	64.8	61.8	57.1	66.1
Curson Avenue	North of 6th St.	Residential	68.8	67.0	64.0	59.3	68.3
	Between 6th St. and Wilshire Blvd.	Residential	71.0	69.2	66.2	61.5	70.5
	South of Wilshire Blvd.	Residential	73.0	71.2	68.2	63.5	72.5
Wilshire Boulevard	Between Fairfax Ave. and Ogden Dr.	Museum	69.9	68.1	65.1	60.4	69.4
	Between Ogden Dr. and Spaulding Ave.	Commercial	68.9	67.1	64.1	59.4	68.4
	Between Spaulding. and Curson Ave.	Museum	71.0	69.2	66.2	61.5	70.5
	East of Curson Ave.	Commercial	69.8	68.0	65.0	60.3	69.3

APPENDIX D

Construction Vibration Calculations

La Brea Tar Pits Master Plan
Demolition - Construction
Vibration Impact Assessment
NSA: ST2

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST2	Residential	168

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Dozer	0.011	0.00275	68.79	168
Excavator	0.011	0.00275	68.79	168

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 168 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 168 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Dozer	0.0051	0.2	62	80
Excavator	0.0051		62	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Non-engineered timber and masonry buildings . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Demolition - Construction
Vibration Impact Assessment
NSA: ST3

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST3	Residential	300

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Dozer	0.011	0.00275	68.79	300
Excavator	0.011	0.00275	68.79	300

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 300 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 300 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Dozer	0.0021	0.2	54	80
Excavator	0.0021		54	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Non-engineered timber and masonry buildings . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Demolition - Construction
Vibration Impact Assessment
NSA: ST5

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST5	Residential	245

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Dozer	0.011	0.00275	68.79	245
Excavator	0.011	0.00275	68.79	245

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 245 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 245 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Dozer	0.0029	0.2	57	80
Excavator	0.0029		57	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Non-engineered timber and masonry buildings . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Demolition - Construction
Vibration Impact Assessment
NSA: ST6

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST6	Residential	137

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Dozer	0.011	0.00275	68.79	137
Excavator	0.011	0.00275	68.79	137

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 137 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 137 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Dozer	0.0069	0.5	65	80
Excavator	0.0069		65	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Reinforced-concrete, steel or timber (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Demolition - Construction
Vibration Impact Assessment
NSA: ST7

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST7	Residential	135

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Dozer	0.011	0.00275	68.79	135
Excavator	0.011	0.00275	68.79	135

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 135 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 135 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Dozer	0.0070	0.5	65	80
Excavator	0.0070		65	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Reinforced-concrete, steel or timber (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Demolition - Construction
Vibration Impact Assessment
NSA: ST8

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST8	Commercial	133

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Dozer	0.011	0.00275	68.79	133
Excavator	0.011	0.00275	68.79	133

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 133 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 133 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Dozer	0.0072	0.5	65	80
Excavator	0.0072		65	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Reinforced-concrete, steel or timber (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Demolition - Construction
Vibration Impact Assessment
NSA: ST9

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST9	Commercial	116

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Dozer	0.011	0.00275	68.79	116
Excavator	0.011	0.00275	68.79	116

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 116 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 116 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Dozer	0.0088	0.3	67	80
Excavator	0.0088		67	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Engineered concrete and masonry (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Demolition - Construction
Vibration Impact Assessment
NSA: ST10

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST10	Commercial	418

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Dozer	0.011	0.00275	68.79	418
Excavator	0.011	0.00275	68.79	418

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 418 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 418 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Dozer	0.0013	0.5	50	80
Excavator	0.0013		50	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Reinforced-concrete, steel or timber (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Site Preparation - Construction
Vibration Impact Assessment
NSA: ST2

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST2	Residential	168

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Dozer	0.011	0.00275	68.79	168
Backhoe	0.011	0.00275	68.79	168

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 168 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 168 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Dozer	0.0051	0.2	62	80
Backhoe	0.0051		62	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Non-engineered timber and masonry buildings . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Site Preparation - Construction
Vibration Impact Assessment
NSA: ST3

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST3	Residential	95

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Dozer	0.011	0.00275	68.79	95
Backhoe	0.011	0.00275	68.79	95

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 95 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 95 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Dozer	0.0119	0.2	69	80
Backhoe	0.0119		69	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Non-engineered timber and masonry buildings . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Site Preparation - Construction
Vibration Impact Assessment
NSA: ST5

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST5	Residential	146

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Dozer	0.011	0.00275	68.79	146
Backhoe	0.011	0.00275	68.79	146

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 146 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 146 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Dozer	0.0062	0.2	64	80
Backhoe	0.0062		64	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Non-engineered timber and masonry buildings . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Site Preparation - Construction
Vibration Impact Assessment
NSA: ST6

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST6	Residential	102

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Dozer	0.011	0.00275	68.79	102
Backhoe	0.011	0.00275	68.79	102

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 102 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 102 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Dozer	0.0107	0.3	69	80
Backhoe	0.0107		69	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Engineered Concrete and Masonry. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Site Preparation - Construction
Vibration Impact Assessment
NSA: ST7

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST7	Residential	85

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Dozer	0.011	0.00275	68.79	85
Backhoe	0.011	0.00275	68.79	85

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 85 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 85 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Dozer	0.0140	0.3	71	80
Backhoe	0.0140		71	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Engineered Concrete and Masonry. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Site Preparation - Construction
Vibration Impact Assessment
NSA: ST8

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST8	Commercial	133

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Dozer	0.011	0.00275	68.79	133
Backhoe	0.011	0.00275	68.79	133

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 133 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 133 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Dozer	0.0072	0.3	65	80
Backhoe	0.0072		65	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Engineered Concrete and Masonry. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Site Preparation - Construction
Vibration Impact Assessment
NSA: ST9

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST9	Commercial	116

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Dozer	0.011	0.00275	68.79	116
Backhoe	0.011	0.00275	68.79	116

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 116 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 116 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Dozer	0.0088	0.3	67	80
Backhoe	0.0088		67	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Engineered concrete and masonry (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Site Preparation - Construction
Vibration Impact Assessment
NSA: ST10

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST10	Commercial	418

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Dozer	0.011	0.00275	68.79	418
Backhoe	0.011	0.00275	68.79	418

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 418 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 418 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Dozer	0.0013	0.3	50	80
Backhoe	0.0013		50	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Engineered Concrete and Masonry. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Grading - Construction
Vibration Impact Assessment
NSA: ST2

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST2	Residential	168

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Grader	0.011	0.00275	68.79	168
Excavator	0.011	0.00275	68.79	168
Backhoe	0.011	0.00275	68.79	168
Dozer	0.011	0.00275	68.79	168
Scraper	0.000375	0.00009375	39.44	168

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 168 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 168 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Grader	0.0051	0.2	62	80
Excavator	0.0051		62	
Backhoe	0.0051		62	
Dozer	0.0051		62	
Scraper	0.0002		33	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Non-engineered timber and masonry buildings . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Grading - Construction
Vibration Impact Assessment
NSA: ST3

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST3	Residential	95

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Grader	0.011	0.00275	68.79	95
Excavator	0.011	0.00275	68.79	95
Backhoe	0.011	0.00275	68.79	95
Dozer	0.011	0.00275	68.79	95
Scraper	0.000375	0.00009375	39.44	95

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 95 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 95 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Grader	0.0119	0.2	69	80
Excavator	0.0119		69	
Backhoe	0.0119		69	
Dozer	0.0119		69	
Scraper	0.0004		40	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Non-engineered timber and masonry buildings . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Grading - Construction
Vibration Impact Assessment
NSA: ST5

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST5	Residential	146

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Grader	0.011	0.00275	68.79	146
Excavator	0.011	0.00275	68.79	146
Backhoe	0.011	0.00275	68.79	146
Dozer	0.011	0.00275	68.79	146
Scraper	0.000375	0.00009375	39.44	146

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 146 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 146 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Grader	0.0062	0.2	64	80
Excavator	0.0062		64	
Backhoe	0.0062		64	
Dozer	0.0062		64	
Scraper	0.0002		35	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Non-engineered timber and masonry buildings . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Grading - Construction
Vibration Impact Assessment
NSA: ST6

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST6	Residential	102

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Grader	0.011	0.00275	68.79	102
Excavator	0.011	0.00275	68.79	102
Backhoe	0.011	0.00275	68.79	102
Dozer	0.011	0.00275	68.79	102
Scraper	0.000375	0.00009375	39.44	102

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 102 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 102 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Grader	0.0107	0.2	69	80
Excavator	0.0107		69	
Backhoe	0.0107		69	
Dozer	0.0107		69	
Scraper	0.0004		39	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Reinforced-concrete, steel or timber (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Grading - Construction
Vibration Impact Assessment
NSA: ST7

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST7	Residential	85

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Grader	0.011	0.00275	68.79	85
Excavator	0.011	0.00275	68.79	85
Backhoe	0.011	0.00275	68.79	85
Dozer	0.011	0.00275	68.79	85
Scraper	0.000375	0.00009375	39.44	85

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 85 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 85 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Grader	0.0140	0.2	71	80
Excavator	0.0140		71	
Backhoe	0.0140		71	
Dozer	0.0140		71	
Scraper	0.0005		42	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Reinforced-concrete, steel or timber (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Grading - Construction
Vibration Impact Assessment
NSA: ST8

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST8	Commercial	133

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Grader	0.011	0.00275	68.79	133
Excavator	0.011	0.00275	68.79	133
Backhoe	0.011	0.00275	68.79	133
Dozer	0.011	0.00275	68.79	133
Scraper	0.000375	0.00009375	39.44	133

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 133 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 133 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Grader	0.0072	0.2	65	80
Excavator	0.0072		65	
Backhoe	0.0072		65	
Dozer	0.0072		65	
Scraper	0.0002		36	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Reinforced-concrete, steel or timber (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Grading - Construction
Vibration Impact Assessment
NSA: ST9

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST9	Commercial	116

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Grader	0.011	0.00275	68.79	116
Excavator	0.011	0.00275	68.79	116
Backhoe	0.011	0.00275	68.79	116
Dozer	0.011	0.00275	68.79	116
Scraper	0.000375	0.00009375	39.44	116

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 116 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 116 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Grader	0.0088	0.2	67	80
Excavator	0.0088		67	
Backhoe	0.0088		67	
Dozer	0.0088		67	
Scraper	0.0003		38	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Engineered concrete and masonry (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Grading - Construction
Vibration Impact Assessment
NSA: ST10

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST10	Commercial	418

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Grader	0.011	0.00275	68.79	418
Excavator	0.011	0.00275	68.79	418
Backhoe	0.011	0.00275	68.79	418
Dozer	0.011	0.00275	68.79	418
Scraper	0.000375	0.00009375	39.44	418

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 418 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 418 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Grader	0.0013	0.2	50	80
Excavator	0.0013		50	
Backhoe	0.0013		50	
Dozer	0.0013		50	
Scraper	0.0000		21	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Reinforced-concrete, steel or timber (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Building Construction - Construction
Vibration Impact Assessment
NSA: ST2

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST2	Residential	1094

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Paver	0.01	0.0025	67.96	1094
Vibratory Roller (large)	0.059	0.01475	83.38	1094

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 1094 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 1094 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Paver	0.0003	0.2	37	80
Vibratory Roller (large)	0.0016		52	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Non-engineered timber and masonry buildings . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Building Construction - Construction
Vibration Impact Assessment
NSA: ST3

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST3	Residential	622

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Paver	0.01	0.0025	67.96	622
Vibratory Roller (large)	0.059	0.01475	83.38	622

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 622 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 622 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Paver	0.0006	0.2	44	80
Vibratory Roller (large)	0.0038		60	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Non-engineered timber and masonry buildings . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Building Construction - Construction
Vibration Impact Assessment
NSA: ST5

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST5	Residential	338

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Paver	0.01	0.0025	67.96	338
Vibratory Roller (large)	0.059	0.01475	83.38	338

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 338 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 338 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Paver	0.0016	0.2	52	80
Vibratory Roller (large)	0.0095		68	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Non-engineered timber and masonry buildings . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Building Construction - Construction
Vibration Impact Assessment
NSA: ST6

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST6	Residential	346

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Paver	0.01	0.0025	67.96	346
Vibratory Roller (large)	0.059	0.01475	83.38	346

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 346 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 346 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Paver	0.0016	0.2	52	80
Vibratory Roller (large)	0.0092		67	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Reinforced-concrete, steel or timber (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Building Construction - Construction
Vibration Impact Assessment
NSA: ST7

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST7	Residential	571

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Paver	0.01	0.0025	67.96	571
Vibratory Roller (large)	0.059	0.01475	83.38	571

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 571 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 571 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Paver	0.0007	0.2	45	80
Vibratory Roller (large)	0.0043		61	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Reinforced-concrete, steel or timber (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Building Construction - Construction
Vibration Impact Assessment
NSA: ST8

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST8	Commercial	836

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Paver	0.01	0.0025	67.96	836
Vibratory Roller (large)	0.059	0.01475	83.38	836

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 836 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 836 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Paver	0.0004	0.2	40	80
Vibratory Roller (large)	0.0024		56	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Reinforced-concrete, steel or timber (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Building Construction - Construction
Vibration Impact Assessment
NSA: ST9

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST9	Commercial	824

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Paver	0.01	0.0025	67.96	824
Vibratory Roller (large)	0.059	0.01475	83.38	824

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 824 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 824 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Paver	0.0004	0.2	40	80
Vibratory Roller (large)	0.0025		56	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Engineered concrete and masonry (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Building Construction - Construction
Vibration Impact Assessment
NSA: ST10

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST10	Commercial	1264

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Paver	0.01	0.0025	67.96	1264
Vibratory Roller (large)	0.059	0.01475	83.38	1264

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 1264 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 1264 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Paver	0.0002	0.2	35	80
Vibratory Roller (large)	0.0013		50	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Reinforced-concrete, steel or timber (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Building Construction - Construction
Vibration Impact Assessment
NSA: ST2

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST2	Residential	540

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Crane	0.001	0.00025	47.96	540
Backhoe	0.011	0.00275	68.79	540

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 540 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 540 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Crane	0.0001	0.2	26	80
Backhoe	0.0009		47	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Non-engineered timber and masonry buildings . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Building Construction - Construction
Vibration Impact Assessment
NSA: ST3

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST3	Residential	271

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Crane	0.001	0.00025	47.96	271
Backhoe	0.011	0.00275	68.79	271

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 271 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 271 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Crane	0.0002	0.2	35	80
Backhoe	0.0025		56	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Non-engineered timber and masonry buildings . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Building Construction - Construction
Vibration Impact Assessment
NSA: ST5

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST5	Residential	422

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Crane	0.001	0.00025	47.96	422
Backhoe	0.011	0.00275	68.79	422

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 422 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 422 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Crane	0.0001	0.2	29	80
Backhoe	0.0013		50	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Non-engineered timber and masonry buildings . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Building Construction - Construction
Vibration Impact Assessment
NSA: ST6

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST6	Residential	265

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Crane	0.001	0.00025	47.96	265
Backhoe	0.011	0.00275	68.79	265

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 265 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 265 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Crane	0.0002	0.2	35	80
Backhoe	0.0025		56	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Reinforced-concrete, steel or timber (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Building Construction - Construction
Vibration Impact Assessment
NSA: ST7

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST7	Residential	405

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Crane	0.001	0.00025	47.96	405
Backhoe	0.011	0.00275	68.79	405

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 405 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 405 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Crane	0.0001	0.2	30	80
Backhoe	0.0013		51	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Reinforced-concrete, steel or timber (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Building Construction - Construction
Vibration Impact Assessment
NSA: ST8

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST8	Commercial	668

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Crane	0.001	0.00025	47.96	668
Backhoe	0.011	0.00275	68.79	668

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 668 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 668 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Crane	0.0001	0.2	23	80
Backhoe	0.0006		44	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Reinforced-concrete, steel or timber (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Building Construction - Construction
Vibration Impact Assessment
NSA: ST9

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST9	Commercial	671

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Crane	0.001	0.00025	47.96	671
Backhoe	0.011	0.00275	68.79	671

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 671 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 671 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Crane	0.0001	0.2	23	80
Backhoe	0.0006		44	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Engineered concrete and masonry (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

La Brea Tar Pits Master Plan
Building Construction - Construction
Vibration Impact Assessment
NSA: ST10

Receiver

Description	Land Use	Equipment Receptor Distance
		(feet)
ST10	Commercial	660

Construction Equipment - Model Inputs

Description	Reference PPV @ 100 ft.	Reference Vibration Amplitude, Lv,rms *	Reference Vibration Velocity Level, Lv	Equipment Receptor Distance
	(in/sec) [1]	(mm/s) [2]	(VdB)	(feet)
Crane	0.001	0.00025	47.96	660
Backhoe	0.011	0.00275	68.79	660

[1] Reference PPV taken from the final Construction Noise and Vibration Report SR 520, West Connection Bridge Project, Washington State Department of Transportation, and based on measurements from several projects including the Central Artery/Tunnel Project in Boston and from several published sources including the FTA Manual and Dowding's Textbook.

[2] Assumes a crest factor of 4.

Construction Equipment - Model Results

Description	Projected Peak Particle Velocity @ 660 feet	Vibration Impact Criteria: Architectural Damage [2]	Projected Vibration Velocity Level @ 660 feet, Lv	Vibration Impact Criteria: Human annoyance from building vibration
	(in/sec) [1]	(in/sec)	(VdB) [1]	(VdB) [3]
Crane	0.0001	0.2	23	80
Backhoe	0.0006		44	

[1] Bolded values indicate potential exceedance over Criteria

[2] FTA Construction Vibration Damage Criteria for Reinforced-concrete, steel or timber (no plaster) . Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 12, Table 12-3.

[3] Ground-Borne Vibration Impact Criteria for residences and buildings where people normally sleep for infrequent vibration events. Source: Transit Noise and Vibration Impact Assessment, FTA, May 2006, Chapter 8, Table 8-1.

Vibration Impact Assessment
Construction

Equipment Vibration Emission Levels

Equipment Description	Vibration Type Steady or transient	Ref PPV at 100 ft.
3-ton truck at 35 mph	Steady	0.0002
Auger Drill Rig	Steady	0.011125
Backhoe	Steady	0.011
Bar Bender	Steady	N/A
Blasting	Transient	0.75
Boring Jack Power Unit	Steady	N/A
Chain Saw	Steady	N/A
Clam Shovel	Transient	0.02525
Compactor	Steady	0.03
Compressor	Steady	N/A
Concrete Batch Plant	Steady	N/A
Concrete Mixer	Steady	0.01
Concrete Pump	Steady	0.01
Concrete Saw	Steady	N/A
Crane	Steady	0.001
Dozer	Steady	0.011
Dump Truck	Steady	0.01
Excavator	Steady	0.011
Flat Bed Truck	Steady	0.01
Front End Loader	Steady	0.011
Generator	Steady	N/A
Gradall	Steady	0.011
Grader	Steady	0.011
Horizontal Boring Hydraulic Jack	Steady	0.003
Hydra Break Ram	Transient	0.05
Impact Pile Driver	Transient	0.2
Insitu Soil Sampling Rig	Steady	0.011125
Jackhammer	Steady	0.003
Mounted Hammer hoe ram	Transient	0.18975
Paver	Steady	0.01
Pickup Truck	Steady	0.01
Pneumatic Tools	Steady	N/A
Pumps	Steady	N/A
Rock Drill	Steady	0.011125
Scraper	Steady	0.000375
Slurry Trenching Machine	Steady	0.002125
Soil Mix Drill Rig	Steady	0.011125
Tractor	Steady	0.01
Tunnel Boring Machine (rock)	Steady	0.0058
Tunnel Boring Machine (soil)	Steady	0.003
Vibratory Pile Driver	Steady	0.14
Vibratory Roller (large)	Steady	0.059
Vibratory Roller (small)	Steady	0.022
Welder	Steady	N/A