NOISE AND VIBRATION IMPACT ANALYSIS

SAN VICENTE SELF STORAGE

LOS ANGELES, CALIFORNIA

LSA

October 2025

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LIST OF ABBREVIATIONS AND ACRONYMS

ALUCP	Airport Land Use Compatibility Plan
APN	Assessor's Parcel Number
CEQA	California Environmental Quality Act
City	City of Los Angeles
CNEL	Community Noise Equivalent Level
dB	decibel(s)
dBA	A-weighted decibel(s)
DWP	Department of Water and Power
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FTA Manual	Federal Transit Administration's 2018 *Transit Noise and Vibration Impact Assessment Manual*
HVAC	heating, ventilation, and air conditioning
in/sec	inches per second
L_{dn}	day-night average noise level
L_{eq}	equivalent continuous sound level
L_{max}	maximum instantaneous sound level
L_w	sound power levels
PPV	peak particle velocity
project	San Vicente Self Storage Project
RMS	root-mean-square
sf	square foot/feet
VdB	vibration velocity decibels

INTRODUCTION

This noise and vibration impact analysis has been prepared to evaluate the potential noise and vibration impacts and reduction measures associated with the San Vicente Self Storage Project (project) in Los Angeles, California. This report is intended to satisfy the City of Los Angeles (City) requirements for a project-specific noise and vibration impact analysis by examining the impacts of the project site and evaluating noise reduction measures that the project may require.

PROJECT LOCATION AND DESCRIPTION

The proposed project is located along San Vicente Boulevard in between Tremaine Avenue and Longwood Avenue. The Property is associated with addresses 4802-4828 West San Vicente Boulevard, Los Angeles California 90019, and assigned Assessor's Parcel Number (APN) 5070-004-026. The property is currently developed with one, one-story building as well associated surface parking. The property is zoned C2-1-O and within the boundaries of the Wilshire Community Plan area. The project location is shown on Figure 1.

The project is located along a major boulevard in an area with a mix of commercial and residential uses. To the east and south, the project is bordered by a mix of commercial uses including a grocery store, a furniture store, several restaurants, a gym and car oil change service, with these properties being zoned C2-1-O. To the west, the property is across the street from Los Angeles Department of Water and Power (DWP) Distribution Station, which is zoned PF-1XL-O. The properties to the north are zoned R3-1-O and contain a residential use with a mix of single-family homes and multi-family apartment buildings.

The proposed building is comprised of 175,047 square feet of floor area, seven (7) stories, an FAR of a maximum of 6:1 and is 85 feet tall. The building includes self-storage rooms on all seven (7) floors, as well as a 731 square-foot office and 608 square-foot lobby on the ground floor. The storage units range between 25 to 200 square-foot units across each floor. Proposed hours of operation are between 6:00 a.m. to 11:00 p.m., daily. The proposed use will meet the growing demand for quality storage space in an emerging residential market as a result of the continued production of medium- and high-density multi-family developments in the neighborhood. The site plan is shown on Figure 2.

LSA

Project Site

FIGURE 1

0 1000 2000
FEET

San Vicente Self Storage LA

Project Location

SOURCE: USGS The National Map (2025)

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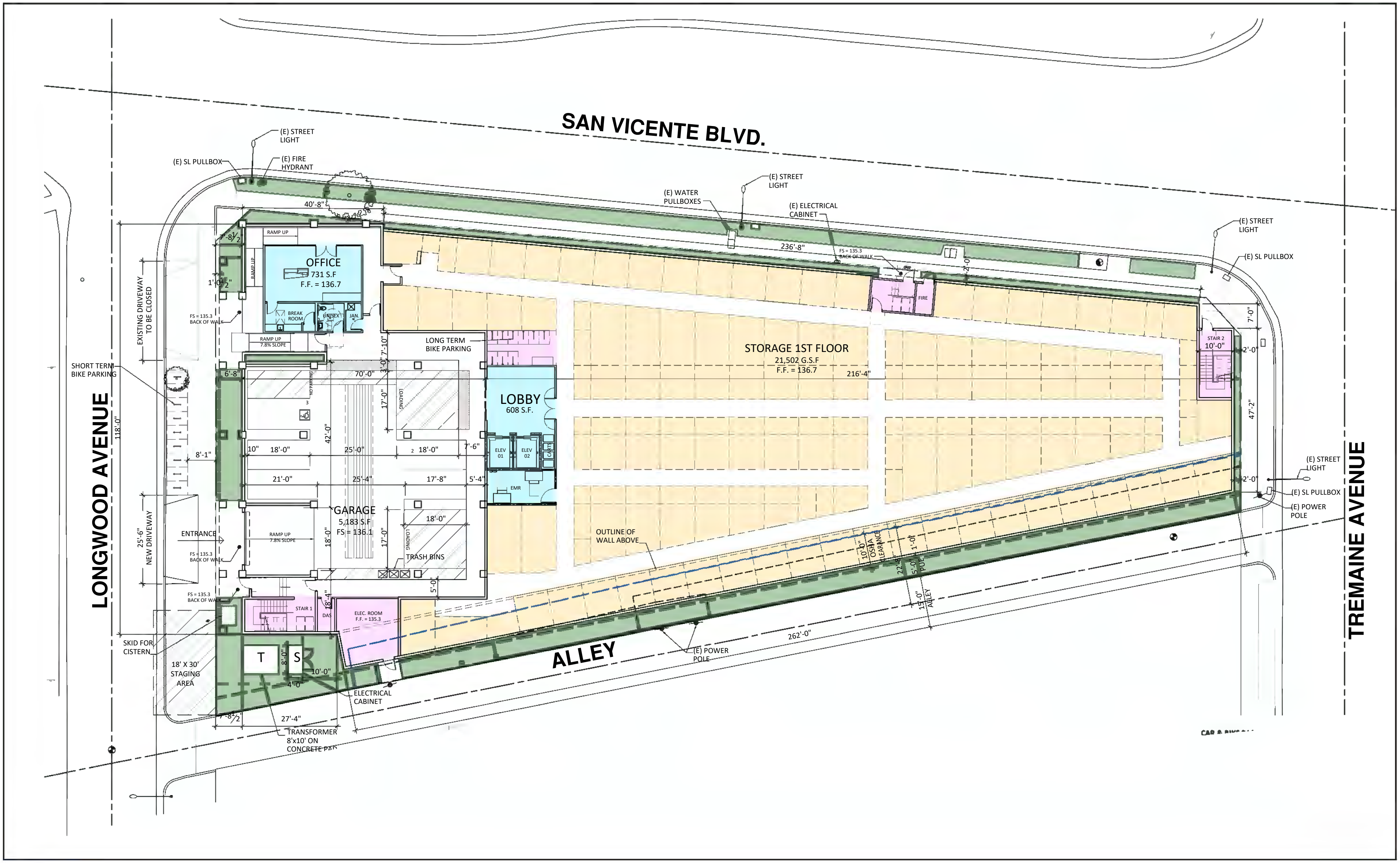

FIGURE 2

San Vicente Self Storage Project

Site Plan

SOURCE: KSP Studios

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EXISTING LAND USES IN THE PROJECT AREA

The project site is primarily surrounded by existing commercial and residential uses. The areas adjacent to the project site include the following uses:

- **North:** Existing residential uses opposite San Vicente Boulevard
- **East:** Existing commercial uses opposite Tremaine Avenue
- **South:** Existing commercial uses
- **West:** Existing commercial uses and Los Angeles DWP Distribution Station opposite Longwood Avenue

The nearest sensitive receptors are the existing multi-family residential uses, approximately 165 feet away from the northern project construction boundary.

NOISE AND VIBRATION FUNDAMENTALS

CHARACTERISTICS OF SOUND

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a sound wave, which results in the tone's range from high to low. Loudness is the strength of a sound, and it describes a noisy or quiet environment; it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity is the average rate of sound energy transmitted through a unit area perpendicular to the direction in which the sound waves are traveling. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

MEASUREMENT OF SOUND

Sound intensity is measured with the A-weighted decibel (dBA) scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound, similar to the human ear's de-emphasis of these frequencies. Decibels (dB), unlike the linear scale (e.g., inches or pounds), are measured on a logarithmic scale representing points on a sharply rising curve.

For example, 10 dB is 10 times more intense than 0 dB, 20 dB is 100 times more intense than 0 dB, and 30 dB is 1,000 times more intense than 0 dB. Thirty decibels (30 dB) represents 1,000 times as much acoustic energy as 0 dB. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the sound's loudness. Ambient sounds generally range from 30 dB (very quiet) to 100 dB (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound levels dissipate exponentially with distance from their noise sources. For a single point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source (e.g., highway traffic or railroad operations), the sound decreases 3 dB for each doubling of distance in a hard site environment. Line source sound levels decrease 4.5 dB for each doubling of distance in a relatively flat environment with absorptive vegetation.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and Community Noise Equivalent Level (CNEL) or the day-night average noise level (L_{dn}) based on A-weighted decibels. CNEL is the time-weighted average noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noises occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during the relaxation. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable. The City uses the CNEL noise scale for long-term traffic noise impact assessment.

Other noise rating scales of importance when assessing the annoyance factor include the maximum instantaneous noise level (L_{max}), which is the highest sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max}, which reflects peak operating conditions and addresses the annoying aspects of intermittent noise. It is often used together with another noise scale, or noise standards in terms of percentile noise levels, in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first category includes audible impacts, which are increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dB or greater because this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1 dB and 3 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category includes changes in noise levels of less than 1 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to sound levels higher than 85 dBA. Exposure to high sound levels affects the entire system, with prolonged sound exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of sound exposure above 90 dBA would result in permanent cell damage. When the sound level reaches 120 dBA, a tickling sensation occurs in the human ear, even with short-term exposure. This level of sound is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by a feeling of pain in the ear (i.e., the threshold of pain). A sound level of 160–165 dBA will result in dizziness or a loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less developed areas.

Table A lists definitions of acoustical terms, and Table B shows common sound levels and their sources.

Table A: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of sound measurement that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in 1 second (i.e., the number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. (All sound levels in this report are A-weighted unless reported otherwise.)
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1%, 10%, 50%, and 90% of a stated time period, respectively.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dBA to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 dBA to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dBA to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time. Usually a composite of sound from many sources from many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence, and tonal or informational content, as well as the prevailing ambient noise level.

Sources: *Technical Noise Supplement* (Caltrans 2013); *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
Caltrans = California Department of Transportation
FTA = Federal Transit Administration

Table B: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle at a Few Feet Away	110	Very Loud	16 times as loud
Pile Driver; Noisy Urban Street/ Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	—
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	—
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	—
Near Freeway Auto Traffic	70	Moderately Loud	Reference level
Average Office	60	Quiet	One-half as loud
Suburban Street	55	Quiet	—
Light Traffic; Soft Radio Music in Apartment	50	Quiet	One-quarter as loud
Large Transformer	45	Quiet	—
Average Residence without Stereo Playing	40	Faint	One-eighth as loud
Soft Whisper	30	Faint	—
Rustling Leaves	20	Very Faint	—
Human Breathing	10	Very Faint	Threshold of Hearing
—	0	Very Faint	—

Source: Compiled by LSA (2023).

FUNDAMENTALS OF VIBRATION

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may not be discernible, but without the effects associated with the shaking of a building there is less adverse reaction. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by occupants as the motion of building surfaces, the rattling of items sitting on shelves or hanging on walls, or a low-frequency rumbling noise. The rumbling noise is caused by the vibration of walls, floors, and ceilings that radiate sound waves. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 dB or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of ground-borne vibration are construction activities (e.g., blasting, pile-driving, and operating heavy-duty earthmoving equipment), steel-wheeled trains, and occasional traffic on rough roads. Problems with both ground-borne vibration and noise from these sources are usually localized to areas within approximately 100 feet from the vibration source, although there are examples of ground-borne vibration causing interference out to distances greater than 200 feet as detailed in the Federal Transit Administration's (FTA) 2018 *Transit Noise and Vibration Impact Assessment Manual* (FTA Manual). When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. It is assumed for most projects that the roadway surface will be smooth enough that ground-borne vibration from street traffic will not exceed the impact criteria; however, construction of the project could result in ground-borne vibration that may be perceptible and annoying.

Ground-borne noise is not likely to be a problem because noise arriving via the normal airborne path will usually be greater than ground-borne noise.

Ground-borne vibration has the potential to disturb people and damage buildings. Although it is very rare for train-induced ground-borne vibration to cause even cosmetic building damage, it is not uncommon for construction processes such as blasting and pile-driving to cause vibration of sufficient amplitudes to damage nearby buildings (FTA 2018). Ground-borne vibration is usually measured in terms of vibration velocity, either the root-mean-square (RMS) velocity or peak particle velocity (PPV). The RMS is best for characterizing human response to building vibration, and PPV is used to characterize the potential for damage. Decibel notation acts to compress the range of numbers required to describe vibration. Vibration velocity level in decibels is defined as

$$L_v = 20 \log_{10} [V/V_{ref}]$$

where "L_v" is the vibration velocity in decibels (VdB), "V" is the RMS velocity amplitude, and "V_{ref}" is the reference velocity amplitude, or 1×10^{-6} inches/second (in/sec) used in the United States.

REGULATORY SETTING

APPLICABLE NOISE STANDARDS

The applicable noise standards governing the project site include the criteria in the City's Noise Element of the General Plan and the City's Municipal Code.

City of Los Angeles

Noise Element of the General Plan

In California, cities and counties are required to adopt noise elements as part of their general plans. The purpose of a noise element is to establish a land use pattern that minimizes the exposure of residents of the community to excessive noise. The City of Los Angeles General Plan noise element provides planning guidance related to noise. It identifies goals, objectives, and an implementation program to ensure that Los Angeles residents will be protected from noise that may be detrimental to their physical and mental health and general welfare. In the noise element, the City has established an acceptable limit of noise exposure for various land use categories. The purpose of these criteria is to provide a guideline for the City to locate appropriate land uses within acceptable noise environments. Table C shows the City's land use compatibility standards for noise. Noise levels of 50 and 55 dBA CNEL are identified as being "normally acceptable" for single-family and multi-family residential land uses, respectively. Noise levels of 65 dBA CNEL are identified as being "normally acceptable" for office uses.

Municipal Code

Chapter XI of the Los Angeles Municipal Code (LAMC) establishes noise standards to limit noise affecting various land uses in the city. These standards apply to noise generated by "any machinery equipment, pump, fan, air-conditioning apparatus, or similar mechanical device." Table D summarizes the presumed ambient noise levels for various land use types as specified in Municipal Code Section 111.03.

Where the ambient noise level is less than the presumed ambient noise level designated, the presumed ambient noise level shall be deemed to be the minimum ambient noise level. At the boundary line between two zones, the presumed ambient noise level of the quieter zone shall be used. In accordance with the Noise Regulation, a noise level increase of 5 dBA over the existing average ambient noise level at an adjacent property line represents a noise violation.

Table C: City of Los Angeles Noise and Land Use Compatibility Guidelines

Land Use Category	Day-Night Average Exterior Sound Level (CNEL dB) 50	55	60	65	70	75	80
Residential Single Family, Duplex, Mobile Home	A	C	C	C	N	U	U
Residential Multi-Family	A	A	C	C	N	U	U
Transient Lodging, Motel, Hotel	A	A	C	C	N	U	U
School, Library, Church, Hospital, Nursing Home	A	A	C	C	N	N	U
Auditorium, Concert Hall, Ampitheater	C	C	C	C/N	U	U	U
Sports Arena, Outdoor Spectator Sports	C	C	C	C	C/U	U	U
Playground, Neighborhood Park	A	A	A	A/N	N	N/U	U
Golf Course, Riding Stable, Water Recreation, Cemetery	A	A	A	A	N	A/N	U
Office Building, Business, Commercial, Professional	A	A	A	A/C	C	C/N	N
Agriculture, Industrial, Manufacturing, Utilities	A	A	A	A	A/C	C/N	N

A = Normally acceptable. Specified land use is satisfactory, based upon assumption buildings involved are conventional construction, without any special noise insulation.

C = Conditionally acceptable. New construction or development only after a detailed analysis of noise mitigation is made and needed noise insulation features are included in project design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning normally will suffice.

N = Normally unacceptable. New construction or development generally should be discouraged. A detailed analysis of noise reduction requirements must be made and noise insulation features included in the design of a project.

U = Clearly unacceptable. New construction or development generally should not be undertaken.

Source: City of Los Angeles General Plan Noise Element (February 1999).
CNEL dB = Community Noise Equivalent Level in decibels

Table D: Exterior Presumed Ambient Noise Levels

Zone	Presumed Ambient Noise Level (dBA)	
	Day	Night
A1, A2, RA, RE, RS, RD, RW1, RW2, R1, R2, R3, R4, and R5	50	40
P, PB, CR, C1, C1.5, C2, C4, C5, and CM	60	55
M1, MR1, and MR2	60	55
M2 and M3	65	65

Source: City of Los Angeles (2025).
dBA = A-weighted decibels

Construction Noise and Vibration – Updates to Thresholds and Methodology

The Construction Noise and Vibration document (City of Los Angeles, 2024) updates the construction noise and vibration thresholds to be used by the Department of City Planning in assessing the environmental impacts of projects in accordance with the California Environmental Quality Act (CEQA).

With regards to construction noise, the City's Noise Ordinance (LAMC Section 112.05) sets forth a maximum noise level for construction equipment of 75 dBA at a distance of 50 feet when operated within 500 feet of a residential zone. Compliance with this standard does not apply where compliance therewith is technically infeasible. In addition, LAMC Section 41.40 prohibits construction between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. and after 6:00 p.m. on Saturday or any national holiday, and at any time on Sunday (i.e., construction is allowed Monday through Friday between 7:00 a.m. and 9:00 p.m. and Saturdays and national holidays between 8:00 a.m. and 6:00 p.m.). Construction may be permitted outside of these hours if a temporary noise variance is approved by the Los Angeles Board of Police Commissioners.

Recognizing the overly sensitive construction noise threshold in the L.A. CEQA Thresholds Guide and the FTA guidance for construction vibration, the following new thresholds are more suited to the generally urban nature of the City yet still recognize the importance of human health, including sleep disruption:

- For construction activities that occur between 7:00 a.m. and 7:00 p.m. Monday through Friday, and between 8:00 a.m. and 6:00 p.m. on Saturdays, there is no numerical threshold above ambient noise levels.
- On- and off-site construction noise during daytime hours (7:00 a.m. and 7:00 p.m. Monday through Friday, and 8:00 a.m. to 6:00 p.m. on Saturdays) are limited to a maximum 80 dBA $L_{eq(8\text{-hour})}$ absolute threshold at sensitive uses (at the property line or at the exterior of the building), including outdoor public recreational areas owned or maintained by a public agency. This standard does not apply to private residential balconies which may or may not extend past the exterior of a building, or to private residential recreational areas.
- For construction activities that occur between 7:00 a.m. and 7:00 p.m. Monday through Friday, and between 8:00 a.m. and 6:00 p.m. on Saturdays, there is no numerical threshold related to human annoyance.
- During nighttime hours (between 7:00 p.m. and 7:00 a.m. Monday through Friday, and between 6:00 p.m. and 8:00 a.m. on Saturdays), and anytime on Sundays or national holidays, construction activities shall not generate groundborne vibration levels that exceed 80 VdB at the exterior of a sensitive use building.
- Architectural Building Damage—Construction activities shall not exceed the following building damage thresholds for the identified structures:
    - Fragile Buildings: 0.1 PPV (in/sec)

- Historic Buildings: 0.25 PPV (in/sec)
- Older Residential Structures: 0.3 PPV (in/sec)
- New Residential Structures: 0.5 PPV (in/sec)
- Modern Industrial/Commercial Buildings: 0.5 PPV (in/sec)

Therefore, for construction noise analysis, a threshold of 80 dBA L_{eq} will be used. For vibration annoyance, a threshold of 80 VdB will be used, and for vibration damage, a threshold of 0.5 PPV (in/sec) will be used as the criteria.

OVERVIEW OF THE EXISTING NOISE ENVIRONMENT

The primary existing noise sources in the project area include vehicle traffic from San Vicente Boulevard and commercial uses in the vicinity of the project site.

AMBIENT NOISE MEASUREMENTS

Long-Term Noise Measurements

To assess existing noise levels, LSA conducted two long-term noise measurements in the vicinity of the project site. The long-term (24-hour) noise level measurements were conducted on July 15 through July 16, 2025, using two Larson Davis Spark 706RC Dosimeters. Table E provides a summary of the measured hourly noise levels and calculated CNEL level from the long-term noise level measurements. As shown in Table E, the calculated CNEL levels reached 70.2 dBA CNEL. Hourly noise levels at surrounding uses are as low as 51.2 dBA L_{eq} during nighttime hours and 60.8 dBA L_{eq} during daytime hours. Noise measurement sheets are provided in Appendix A. Figure 3 shows the long-term monitoring locations.

Table E: Long-Term 24-Hour Ambient Noise Monitoring Results

Location		Daytime Noise Levels[1] (dBA L_{eq})	Evening Noise Levels[2] (dBA L_{eq})	Nighttime Noise Levels[3] (dBA L_{eq})	Daily Noise Levels (dBA CNEL)
LT-1	On the northwest corner of Longwood Avenue and San Vicente Boulevard, on a utility pole approximately 90 feet from the San Vicente Boulevard centerline.	67.1-69.5	64.1-66.8	54.8-67.2	70.2
LT-2	4876 San Vicente Blvd, Los Angeles, CA. On a utility pole near the southeastern corner of the property, approximately 140 feet from the San Vicente Boulevard centerline.	60.8-63.3	60.5-61.9	51.2-59.6	65.0

Source: Compiled by LSA (2025).
Note: Noise measurements were conducted from July 15 to July 16, 2025, starting at 11:00 a.m.
1 Daytime Noise Levels = noise levels during the hours from 7:00 a.m. to 7:00 p.m.
2 Evening Noise Levels = noise levels during the hours from 7:00 p.m. to 10:00 p.m.
3 Nighttime Noise Levels = noise levels during the hours from 10:00 p.m. to 7:00 a.m.
CNEL = Community Noise Equivalent Level
ft = foot/feet
dBA = A-weighted decibels
L_{eq} = equivalent continuous sound level

EXISTING AIRCRAFT NOISE

Airport-related noise levels are primarily associated with aircraft engine noise made while aircraft are taking off, landing, or running their engines while still on the ground. The closest airport to the proposed project site is Santa Monica Municipal Airport located approximately 6.5 miles west of the project site. Based on Figure 3-9, Calendar Year 2023 CNEL Noise Contours (City of Santa Monica 2023), the project is located outside the 65 dBA CNEL noise contour. Because the project site is located outside the 65 dBA CNEL airport noise contour, the project would not be adversely affected by airport/airfield noise, nor would the project contribute to or result in adverse airport/airfield noise impacts. No further analysis is required.

LSA

FIGURE 3

LEGEND

Project Site Boundary

LT-1 Long-term Noise Monitoring Location

N

0 50 100
FEET

SOURCE: Google Earth 2025

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Town Center Car Wash Project

Noise Monitoring Locations

PROJECT IMPACTS

SHORT-TERM CONSTRUCTION NOISE IMPACTS

Two types of short-term noise impacts could occur during the construction of the proposed project. First, construction crew commutes and the transport of construction equipment and materials to the site for the proposed project would incrementally increase noise levels on access roads leading to the site. Although there would be a relatively high single-event noise-exposure potential causing intermittent noise nuisance (passing trucks at 50 feet would generate up to 84 dBA L_{max}), the effect on longer-term ambient noise levels would be small when compared to the existing average daily traffic (ADT) volume on San Vicente Boulevard. Based on the *LADOT Traffic Counts Summary* (City of Los Angeles 2015), the existing ADT on San Vicente Boulevard is approximately 26,266 ADT in the vicinity of the project. Although the current ADT volume on San Vicente is likely higher, using the 2015 volume is considered a conservative approach. During construction, approximately 442 acoustically equivalent trips would occur during an average day from worker and delivery activities resulting in a traffic noise increase of approximately 0.1 dBA, as shown in Appendix B. The acoustically equivalent traffic volume is used in order to account for the additional noise a heavy truck creates as compared to automobile traffic and does not represent the actual number of vehicles associated with construction activities. A noise level increase of less than 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, short-term construction-related impacts associated with worker commutes and equipment transport to the project site would be less than significant. Additionally, there would be concrete pour during the nighttime hours. However, it would be for less than five days and therefore exempt.

The second type of short-term noise impact is related to noise generated during construction, which includes demolition, site preparation, grading, building construction, paving, architectural coating, and trenching on the project site. Construction is completed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table H lists typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor, taken from the Federal Highway Administration's (FHWA) *FHWA Roadway Construction Noise Model* (FHWA 2006).

In addition to the reference maximum noise level, the usage factor provided in Table F is used to calculate the hourly noise level impact for each piece of equipment based on the equation on the following page.

Table F: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor (%)[1]	Maximum Noise Level (L_{max}) at 50 Ft[2]
Auger Drill Rig	20	85
Backhoes	40	80
Compactor (Ground)	20	80
Compressor	40	80
Cranes	16	85
Dozers	40	85
Dump Trucks	40	84
Excavators	40	85
Flat Bed Trucks	40	84
Forklift	20	85
Front-End Loaders	40	80
Graders	40	85
Impact Pile Drivers	20	95
Jackhammers	20	85
Paver	50	85
Pickup Truck	40	55
Pneumatic Tools	50	85
Pumps	50	77
Rock Drills	20	85
Rollers	20	85
Scrapers	40	85
Tractors	40	84
Trencher	50	82
Welder	40	73

Source: *FHWA Roadway Construction Noise Model User's Guide,* Table 1 (FHWA 2006).
Note: Noise levels reported in this table are rounded to the nearest whole number.
[1] Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.
[2] Maximum noise levels were developed based on Specification 721.560 from the Central Artery/Tunnel program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.
FHWA = Federal Highway Administration
ft = foot/feet
L_{max} = maximum instantaneous sound level

$$L_{eq}(equip) = E.L. + 10\log(U.F.) - 20\log\left(\frac{D}{50}\right)$$

where: *L_{eq} (equip)* = L_{eq} at a receiver resulting from the operation of a single piece of equipment over a specified time period.

E.L. = noise emission level of the particular piece of equipment at a reference distance of 50 feet.

U.F. = usage factor that accounts for the fraction of time that the equipment is in use over the specified period of time.

D = distance from the receiver to the piece of equipment.

Each piece of construction equipment operates as an individual point source. Using the following equation, a composite noise level can be calculated when multiple sources of noise operate simultaneously:

$$Leq\ (composite) = 10 * \log_{10}\left(\sum_{1}^{n} 10^{\frac{Ln}{10}}\right)$$

Using the equations from the methodology above, the reference information in Table F, and the construction equipment list provided, the composite noise levels of each construction phase were calculated. The project construction composite noise levels at a distance of 50 feet would range from 76 dBA L_{eq} to 90 dBA L_{eq}, with the highest noise levels occurring during the paving and building construction phases.

Once composite noise levels are calculated, reference noise levels can then be adjusted for distance using the following equation:

$$Leq\ (at\ distance\ X) = Leq\ (at\ 50\ feet) - 20 * \log_{10}\left(\frac{X}{50}\right)$$

In general, this equation shows that doubling the distance would decrease noise levels by 6 dBA while halving the distance would increase noise levels by 6 dBA.

Table G shows the nearest sensitive uses to the project site, their distance from the center of construction activities, and composite noise levels expected during construction. These noise level projections do not consider intervening topography or barriers. Construction equipment calculations are provided in Appendix B.

Table G: Potential Construction Noise Impacts at Nearest Receptor

Receptor (Location)	Composite Noise Level (dBA L_{eq}) at 50 ft[1]	Distance (ft)	Composite Noise Level (dBA L_{eq})
Commercial (South)	90	65	87
Residential (North)		215	77
Commercial (East)		220	77
Commercial (West)		250	76

Source: Compiled by LSA (2025).

1 The composite construction noise level represents the overlap of paving and building construction phases which are expected to result in the greatest noise level as compared to other phases.

2 The assessment distance is associated with the average condition, identified by the distance from the center of construction activities to surrounding uses.

dBA L_{eq} = average A-weighted hourly noise level

ft = foot/feet

While construction noise will vary, it is expected that composite noise levels during construction would reach 87 dBA L_{eq} at the nearest commercial uses to the south and 77 dBA L_{eq} at the nearest residential uses to the north during daytime hours. These predicted noise levels would only occur when all construction equipment is operating simultaneously and, therefore, are assumed to be rather conservative in nature. While construction-related short-term noise levels have the potential to be higher than existing ambient noise levels in the project area under existing conditions, the noise impacts would no longer occur once project construction is completed.

As stated above, the City's Noise Ordinance regulates noise impacts associated with construction activities. The proposed project would comply with the construction hours specified in the City's Noise Ordinance, which states that construction activities are not allowed between the hours of 9 p.m. and 7 a.m. on any given day. The code also prohibits noise from construction equipment within 500 ft of a residential zone before 8 a.m. or after 6 p.m. on any Saturday or national holiday nor at any time on any Sunday.

As it relates to off-site uses, construction-related noise impacts would remain below the 80 dBA construction noise level criteria for daytime construction noise level criteria as established by the City for residential uses; therefore, the impact would be considered less than significant.

SHORT-TERM CONSTRUCTION VIBRATION IMPACTS

This construction vibration impact analysis discusses the level of human annoyance using vibration levels in RMS (VdB) and assesses the potential for building damages using vibration levels in PPV (in/sec). This is because vibration levels calculated in RMS are best for characterizing human response to building vibration, while vibration level in PPV is best for characterizing potential for damage.

Table H shows the PPV and VdB values at 25 feet from the construction vibration source. As shown in Table H, bulldozers, and other heavy-tracked construction equipment (expected to be used for this project) generate approximately 0.089 PPV in/sec or 87 VdB of ground-borne vibration when measured at 25 feet, based on the FTA Manual. The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings and the project construction boundary (assuming the construction equipment would be used at or near the project setback line).

The formulae for vibration transmission are provided below and Tables I and J below provide a summary of off-site construction vibration levels.

$$L_v dB\ (D) = L_v dB\ (25\ ft) - 30\ Log\ (D/25)$$

$$PPV_{equip} = PPV_{ref}\ x\ (25/D)^{1.5}$$

Table H: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV/L_V at 25 ft	
	PPV (in/sec)	L_V (VdB)[1]
Pile Driver (Impact), Typical	0.644	104
Pile Driver (Sonic), Typical	0.170	93
Vibratory Roller	0.210	94
Hoe Ram	0.089	87
Large Bulldozer[2]	**0.089**	**87**
Caisson Drilling	0.089	87
Loaded Trucks[2]	**0.076**	**86**
Jackhammer	0.035	79
Small Bulldozer	0.003	58

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).

1 RMS vibration velocity in decibels (VdB) is 1 µin/sec.

2 Equipment shown in **bold** is expected to be used on site.

µin/sec = microinches per second
ft = foot/feet
FTA = Federal Transit Administration
in/sec = inch/inches per second
L_V = velocity in decibels
PPV = peak particle velocity
RMS = root-mean-square
VdB = vibration velocity decibels

Table I: Potential Construction Vibration Annoyance Impacts at Nearest Receptor

Receptor (Location)	Reference Vibration Level (VdB) at 25 ft[1]	Distance (ft)[2]	Vibration Level (VdB)
Commercial (South)	87	65	76
Residential (North)		215	59
Commercial (East)		220	59
Commercial (West)		250	57

Source: Compiled by LSA (2025).

1 The reference vibration level is associated with a large bulldozer, which is expected to be representative of the heavy equipment used during construction.

2 The assessment distance is associated with the average condition, identified by the distance from the center of construction activities to surrounding uses.

ft = foot/feet
VdB = vibration velocity decibels

Table J: Potential Construction Vibration Damage Impacts at Nearest Receptor

Receptor (Location)	Reference Vibration Level (PPV) at 25 ft[1]	Distance (ft)[2]	Vibration Level (PPV)
Commercial (South)	0.089	15	0.191
Residential (North)		165	0.005
Commercial (East)		70	0.019
Commercial (West)		100	0.011

Source: Compiled by LSA (2025).

1 The reference vibration level is associated with a large bulldozer, which is expected to be representative of the heavy equipment used during construction.

2 The assessment distance is associated with the peak condition, identified by the distance from the perimeter of construction activities to surrounding structures.

ft = foot/feet
PPV = peak particle velocity

Based on the information provided in Table I, vibration levels are expected to approach 76 VdB at the closest commercial uses to the south and 59 VdB at the nearest residential use to the north and would not exceed the annoyance threshold of 80 VdB.

Based on the information provided in Table L, vibration levels are expected to approach 0.191 in/sec PPV at the nearest surrounding structures to the south and would not exceed the 0.5 PPV in/sec damage threshold considered safe for modern commercial buildings, which would result in a less than significant impact. Vibration levels at all other buildings would be lower. Therefore, construction would not result in any vibration damage, and impacts would be less than significant.

Because the proposed project would comply with the construction hours specified in the City's Noise Ordinance, which states that construction activities are not allowed between the hours of 9 p.m. and 7 a.m. on any given day, vibration impacts would not occur during the more sensitive nighttime hours.

LONG-TERM OFF-SITE TRAFFIC NOISE IMPACTS

As a result of the implementation of the proposed project, off-site traffic volumes on surrounding roadways have the potential to increase. According to the *San Vicente Trip Generation Document* (EPD Solutions, Inc. 2025), the proposed project would result in an increase of 194 daily trips. According to the *LADOT Traffic Counts Summary* (City of Los Angeles 2015), the existing ADT on San Vicente Boulevard is approximately 26,266 ADT in the vicinity of the project. Although the current traffic volume on San Vicente is likely higher, using the 2015 volume is considered a conservative approach. The following equation was used to determine the potential impacts of the project:

$$\text{Change in CNEL} = 10\ log_{10}\ [V_{(e+p)}/V_{(existing)}]$$

where:
$V_{existing}$ = existing daily volumes
V_{e+p} = existing daily volumes plus project
Change in CNEL = increase in noise level due to the project

The results of the calculations show that an increase of approximately 0.1 dBA CNEL is expected along San Vicente Boulevard. A noise level increase of less than 1 dBA would not be perceptible to the human ear; therefore, the traffic noise increase in the vicinity of the project site resulting from the proposed project would be less than significant.

LONG-TERM TRAFFIC-RELATED VIBRATION IMPACTS

The proposed project would not generate vibration levels related to on-site operations. In addition, vibration levels generated from project-related traffic on the adjacent roadways are unusual for on-road vehicles because the rubber tires and suspension systems of on-road vehicles provide vibration isolation. Based on a reference vibration level of 0.076 in/sec PPV, structures greater than 20 feet from the roadways that contain project trips would experience vibration levels below the most conservative standard of 0.12 in/sec PPV, and therefore vibration levels generated from project-related traffic on the adjacent roadways would be less than significant and no mitigation is required.

LONG-TERM OFF-SITE STATIONARY NOISE IMPACTS

Adjacent off-site land uses would be potentially exposed to stationary-source noise impacts from rooftop heating, ventilation, and air conditioning (HVAC) equipment and loading and unloading activities. The potential noise impacts to off-site sensitive land uses from the proposed operations are discussed below. While there could be noise impacts associated with loading and unloading activities, due to the site plan layout, the proposed buildings would provide shielding and noise associated with loading and unloading activities would be minimal.

Heating, Ventilation, and Air Conditioning Equipment

The project would have various rooftop mechanical equipment, including HVAC units on the proposed self-storage building. Based on the project site plan, the project is assumed to have three (3) rooftop HVAC units and assumed to operate 24 hours per day. The HVAC equipment would generate sound power levels (L_w) of up to 87 dBA L_w or a sound pressure level of 72 dBA L_{eq} at 5 feet, based on manufacturer data (Trane n.d.). This level is used as a reference level and is not indicative of the level at surrounding receptors.

Cumulative Operations Noise Assessment

Tables K and L below show the hourly noise levels generated by HVAC equipment at the closest off-site land uses. The results indicate that operational noise levels would be below the daytime hourly noise level standard of 50 dBA L_{eq} for residential uses. Additionally, operational noise levels would be below the lowest nighttime ambient noise level at the nearest residential uses to the north. Therefore, operations of the proposed project would be less than significant. No mitigation is required.

Table K: Daytime Exterior Noise Level Impacts

Receptor	Direction	Existing Quietest Daytime Noise Level (dBA L_{eq})	Project Generated Noise Levels (dBA L_{eq})	Potential Operational Noise Impact?[1]
Residential	North	67.1	45.3	No

Source: Compiled by LSA (2025).

[1] A potential operational noise impact would occur if (1) the quietest daytime ambient hour is less than 50 dBA L_{eq} at the nearest residential uses and project noise impacts are greater than 50 dBA L_{eq} at the nearest residential uses, or (2) the quietest daytime ambient hour is greater than 50 dBA L_{eq} at the nearest residential uses and project noise impacts are 3 dBA greater than the quietest daytime ambient hour.

dBA L_{eq} = average A-weighted hourly noise level

Table L: Nighttime Exterior Noise Level Impacts

Receptor	Direction	Existing Quietest Nighttime Noise Level (dBA L_{eq})	Project Generated Noise Levels (dBA L_{eq})	Potential Operational Noise Impact?[1]
Residential	North	54.8	45.3	No

Source: Compiled by LSA (2025).

[1] A potential operational noise impact would occur if (1) the quietest nighttime ambient hour is less than 40 dBA L_{eq} at the nearest residential uses and Project noise impacts are greater than 40 dBA L_{eq} at the nearest residential uses, or (2) the quietest nighttime ambient hour is greater than 40 dBA L_{eq} at the nearest residential uses and Project noise impacts are 3 dBA greater than the quietest nighttime ambient hour.

dBA L_{eq} = average A-weighted hourly noise level

In conclusion, the proposed project would not generate noise levels from operations above the quietest ambient noise levels during daytime and nighttime hours. Furthermore, due to the relatively high ambient noise levels, the project would not contribute to the overall ambient noise levels. The project is also not anticipated to generate vibration levels above the FTA limits to off-site receptors. Therefore, the proposed project would comply with the City's standards.

REFERENCES

California Department of Transportation (Caltrans). 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol.* September.

City of Los Angeles. 1999. *Noise Element of the Los Angeles City General Plan*. September 13.

_______. 2015. *Department of Transportation – Traffic Counts*. June 16.

_______. 2024. *Construction Noise and Vibration – Updates to Thresholds and Methodology.* August.

_______. 2025. *Municipal Code*. June 30. Website: https://codelibrary.amlegal.com/codes/los_angeles/latest/lamc/0-0-0-107363 (accessed October 2025).

EPD Solutions, Inc. 2025. *San Vicente Trip Generation.* July 11.

Federal Highway Administration (FHWA). 2006. *Roadway Construction Noise Model User's Guide.* January. Washington, D.C. Website: www.fhwa.dot.gov/environment/noise/construction_noise/rcnm/rcnm.pdf (accessed October 2025).

Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment Manual*. Office of Planning and Environment. Report No. 0123. September.

Santa Monica Municipal Airport. 2023. *Calendar Year 2023 CNEL Noise Contours*. December.

Trane. n.d. *Fan Performance – Product Specifications RT-PRC023AU-EN.*

APPENDIX A

NOISE MONITORING DATA

Noise Measurement Survey – 24 HR

Project Number: ESL2201.112
Project Name: 4800 San Vicente Blvd

Test Personnel: Corey Knips
Equipment: LD Spark 706RC (SN:17814)

Site Number: LT-1 Start Date: 7/15/2025

Time: From 11:00 a.m. To 11:00 a.m.

Site Location: On the northwest corner of Longwood Avenue and San Vicente Boulevard, on a utility pole approximately 90 feet from the San Vicente Boulevard centerline.

Primary Noise Sources: Traffic on San Vicente Boulevard.

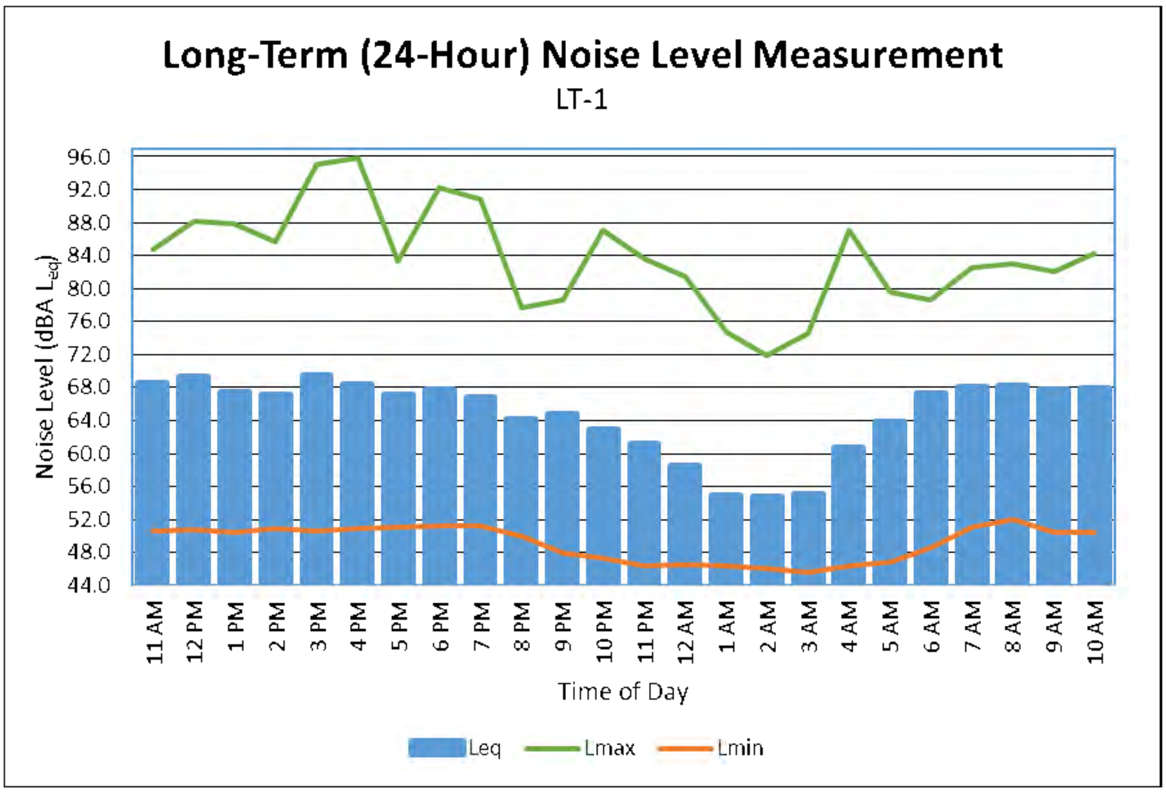
Comments:

Photo:

Long-Term (24-Hour) Noise Level Measurement Results at LT-1

Start Time	Date	Noise Level (dBA)		
		L_{eq}	L_{max}	L_{min}
11:00 AM	7/15/2025	68.6	84.8	50.6
12:00 PM	7/15/2025	69.3	88.1	50.8
1:00 PM	7/15/2025	67.4	87.8	50.4
2:00 PM	7/15/2025	67.1	85.7	50.9
3:00 PM	7/15/2025	69.5	95.0	50.7
4:00 PM	7/15/2025	68.3	95.9	51.0
5:00 PM	7/15/2025	67.1	83.3	51.1
6:00 PM	7/15/2025	67.8	92.2	51.3
7:00 PM	7/15/2025	66.8	90.8	51.2
8:00 PM	7/15/2025	64.1	77.7	50.0
9:00 PM	7/15/2025	64.7	78.7	47.9
10:00 PM	7/15/2025	63.0	87.0	47.4
11:00 PM	7/15/2025	61.1	83.7	46.4
12:00 AM	7/16/2025	58.5	81.4	46.6
1:00 AM	7/16/2025	55.0	74.7	46.4
2:00 AM	7/16/2025	54.8	71.9	46.1
3:00 AM	7/16/2025	55.1	74.6	45.6
4:00 AM	7/16/2025	60.7	87.0	46.4
5:00 AM	7/16/2025	63.9	79.6	46.8
6:00 AM	7/16/2025	67.2	78.7	48.6
7:00 AM	7/16/2025	68.1	82.6	51.1
8:00 AM	7/16/2025	68.2	83.0	52.0
9:00 AM	7/16/2025	67.7	82.0	50.4
10:00 AM	7/16/2025	68.0	84.3	50.5

Source: Compiled by LSA Associates, Inc. (2025).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level
L_{min} = minimum measured sound level



Noise Measurement Survey – 24 HR

Project Number: ESL2201.112
Project Name: 4800 San Vicente Blvd

Test Personnel: Corey Knips
Equipment: LD Spark 706RC (SN:17637)

Site Number: LT-2 Start Date: 7/15/2025

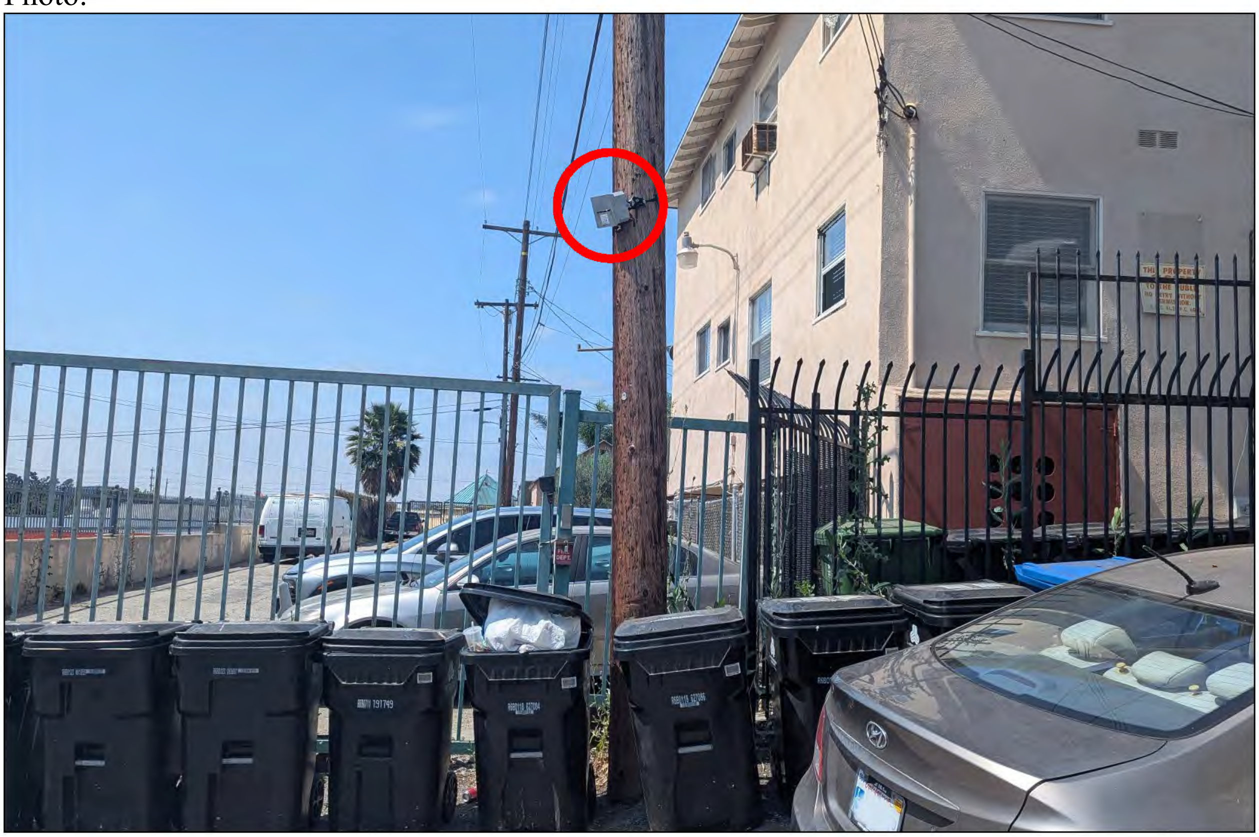
Time: From 11:00 a.m. To 11:00 a.m.

Site Location: 4876 San Vicente Blvd, Los Angeles, CA. On a utility pole near the southeastern corner of the property, approximately 140 feet from the San Vicente Boulevard centerline.

Primary Noise Sources: Traffic on San Vicente Boulevard.

Comments:

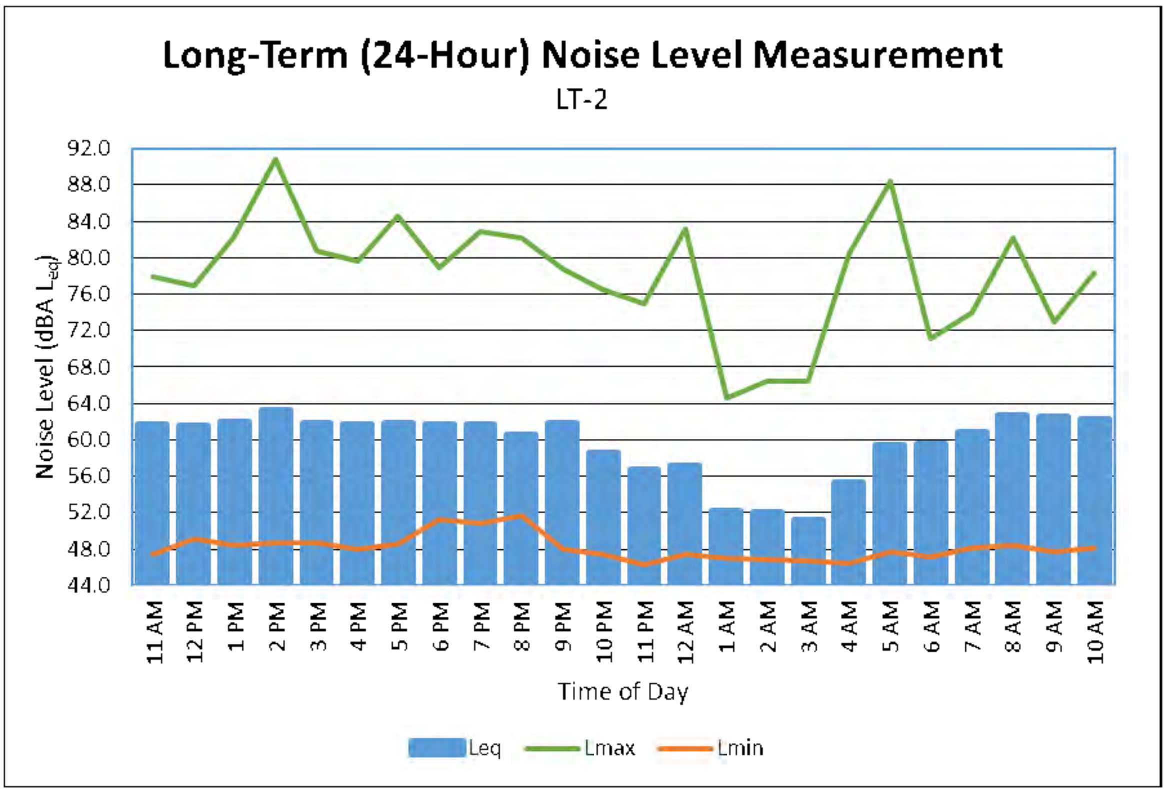
Photo:



Long-Term (24-Hour) Noise Level Measurement Results at LT-2

Start Time	Date	Noise Level (dBA)		
		L_{eq}	L_{max}	L_{min}
11:00 AM	7/15/2025	61.7	77.9	47.4
12:00 PM	7/15/2025	61.6	76.9	49.1
1:00 PM	7/15/2025	62.0	82.3	48.4
2:00 PM	7/15/2025	63.3	90.8	48.7
3:00 PM	7/15/2025	61.8	80.7	48.7
4:00 PM	7/15/2025	61.7	79.6	48.0
5:00 PM	7/15/2025	61.8	84.5	48.6
6:00 PM	7/15/2025	61.8	78.9	51.3
7:00 PM	7/15/2025	61.6	82.8	50.8
8:00 PM	7/15/2025	60.5	82.1	51.7
9:00 PM	7/15/2025	61.9	78.8	48.0
10:00 PM	7/15/2025	58.6	76.5	47.4
11:00 PM	7/15/2025	56.7	74.9	46.3
12:00 AM	7/16/2025	57.1	83.1	47.4
1:00 AM	7/16/2025	52.2	64.6	47.0
2:00 AM	7/16/2025	52.1	66.5	46.9
3:00 AM	7/16/2025	51.2	66.5	46.8
4:00 AM	7/16/2025	55.3	80.5	46.5
5:00 AM	7/16/2025	59.4	88.4	47.7
6:00 AM	7/16/2025	59.6	71.1	47.2
7:00 AM	7/16/2025	60.8	73.9	48.2
8:00 AM	7/16/2025	62.6	82.1	48.4
9:00 AM	7/16/2025	62.5	73.0	47.7
10:00 AM	7/16/2025	62.3	78.4	48.1

Source: Compiled by LSA Associates, Inc. (2025).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level
L_{min} = minimum measured sound level



APPENDIX B

CONSTRUCTION NOISE LEVEL CALCULATIONS

Construction Calculations

Phase: Demolition

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Concrete Saw	1	90	20	50	0.5	90	83
Dozer	1	85	40	50	0.5	85	81
Tractor	2	84	40	50	0.5	84	83
					Combined at 50 feet	**92**	**87**
					Combined at Receptor 65 feet	**90**	**85**
					Combined at Receptor 215 feet	**79**	**75**
					Combined at Receptor 220 feet	**79**	**74**

Phase: Site Preparation

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Grader	1	85	40	50	0.5	85	81
Tractor	1	84	40	50	0.5	84	80
					Combined at 50 feet	**88**	**84**
					Combined at Receptor 65 feet	**85**	**81**
					Combined at Receptor 215 feet	**75**	**71**
					Combined at Receptor 220 feet	**75**	**71**
					Combined at Receptor 250 feet	**74**	**70**

Phase: Grading

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Grader	1	85	40	50	0.5	85	81
Dozer	1	85	40	50	0.5	85	81
Tractor	1	84	40	50	0.5	84	80
					Combined at 50 feet	**89**	**85**
					Combined at Receptor 65 feet	**87**	**83**
					Combined at Receptor 215 feet	**77**	**73**
					Combined at Receptor 220 feet	**77**	**73**
					Combined at Receptor 250 feet	**75**	**72**

Phase:Building Construction

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Crane	1	85	16	50	0.5	85	77
Man Lift	2	85	20	50	0.5	85	81
Tractor	2	84	40	50	0.5	84	83
					Combined at 50 feet	**89**	**86**
					Combined at Receptor 65 feet	**87**	**83**
					Combined at Receptor 215 feet	**77**	**73**
					Combined at Receptor 220 feet	**77**	**73**
					Combined at Receptor 250 feet	**75**	**72**

Phase: Paving

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Tractor	1	84	40	50	0.5	84	80
Drum Mixer	4	80	50	50	0.5	80	83
Roller	1	85	20	50	0.5	85	78
Paver	1	85	50	50	0.5	85	82
					Combined at 50 feet	**90**	**87**
					Combined at Receptor 65 feet	**88**	**85**
					Combined at Receptor 215 feet	**77**	**75**
					Combined at Receptor 220 feet	**77**	**74**
					Combined at Receptor 250 feet	**76**	**73**

Building Construction & Paving

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Crane	1	85	16	50	0.5	85	77
Man Lift	2	85	20	50	0.5	85	81
Tractor	2	84	40	50	0.5	84	83
Tractor	1	84	40	50	0.5	84	80
Drum Mixer	4	80	50	50	0.5	80	83
Roller	1	85	20	50	0.5	85	78
Paver	1	85	50	50	0.5	85	82
					Combined at 50 feet	**93**	**90**
					Combined at Receptor 65 feet	**90**	**87**
					Combined at Receptor 215 feet	**80**	**77**
					Combined at Receptor 220 feet	**80**	**77**
					Combined at Receptor 250 feet	**79**	**76**

Phase:Architectural Coating

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
Compressor (air)	1	80	40	50	0.5	80	76
					Combined at 50 feet	**80**	**76**
					Combined at Receptor 65 feet	**78**	**74**
					Combined at Receptor 215 feet	**67**	**63**
					Combined at Receptor 220 feet	**67**	**63**
					Combined at Receptor 250 feet	**67**	**63**

Phase: Trenching

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA)	
						Lmax	Leq
All Other Equipment > 5 hp	2	85	50	50	0.5	85	85
Compactor (ground)	1	80	20	50	0.5	80	73
Tractor	1	84	40	50	0.5	84	80
Excavator	1	85	40	50	0.5	85	81
Front End Loader	1	80	40	50	0.5	80	76
					Combined at 50 feet	**90**	**88**
					Combined at Receptor 65 feet	**88**	**86**
					Combined at Receptor 215 feet	**78**	**75**
					Combined at Receptor 220 feet	**77**	**75**
					Combined at Receptor 250 feet	**76**	**74**

Sources: RCNM

[1]- Percentage of time that a piece of equipment is operating at full power.
dBA – A-weighted Decibels
Lmax- Maximum Level
Leq- Equivalent Level

Construction Traffic Noise Calculator

Construction Phase	One-Way Worker Trip/Day	One Way Vendor Trip/Day	One Way Hauling Trip Number	Total
Demolition	10	0	23.6	33.6
Site Preparation	5	0	0	5
Grading	7.5	0	7.93	15.43
Building Construction	73.5	28.7	0	102.2
Paving	17.5	0	0	17.5
Architectural Coating	14.7	0	0	14.7
Trenching	15	0	0	15
Maximum				**102**

Phase Number	Phase Name	Number of Days
1	Demolition	22
2	Site Preparation	9
3	Grading	15
4	Building Construction	306
5	Paving	5
6	Architectural Coating	65
7	Trenching	35

Roadway	Speed	Existing Volume	MT Factor	HT Factor
San Vicente Blvd	50	26,266	4.5	11.5

Speed	MT Factor	HT Factor
25	12.6	39.8
30	8.9	26.3
35	7.1	19.1
40	5.8	15.1
45	5	12.9
50	4.5	11.5
55	4.1	10.4
60	3.7	9.6
65	3.5	8.9

	Worker Trip/Day	Vendor Trip/Day	Hauling Trip Number	Total	Overlap?
Demolition	**10**	**0**	**272**	282	
Site Preparation	**5**	**0**	**0**	5	
Grading	**8**	**0**	**92**	100	x
Building Construction	**74**	**230**	**0**	304	x
Paving	**18**	**0**	**0**	18	x
Architectural Coating	**15**	**0**	**0**	15	x
Trenching	**15**	**0**	**0**	15	x

Total Equivalent Vehicles	**442**
Noise Increase (dBA)	**0.1**

APPENDIX C

STATIONARY SOURCE NOISE LEVEL CALCULATIONS

Stationary Noise

	Land Use	Direction	Noise Source	Peak Hour Daytime Reference Noise Level (dBA Leq)	Off-Peak Nighttime Reference Noise Level (dBA Leq)	Reference Distance (ft)	Distance (ft)	Distance Attenuation (dBA)	Peak Hour Daytime Reference Noise Level at Receptor (dBA Leq)	Off-Peak Nighttime Reference Noise Level at Receptor (dBA Leq)
1	Residential	North	HVAC 1	72.0	72.0	5	215	32.7	39.3	39.3
			HVAC 2	72.0	72.0	5	230	33.3	38.7	38.7
			HVAC 3	72.0	72.0	5	245	33.8	37.2	37.2
								Combined	**45.3**	**45.3**