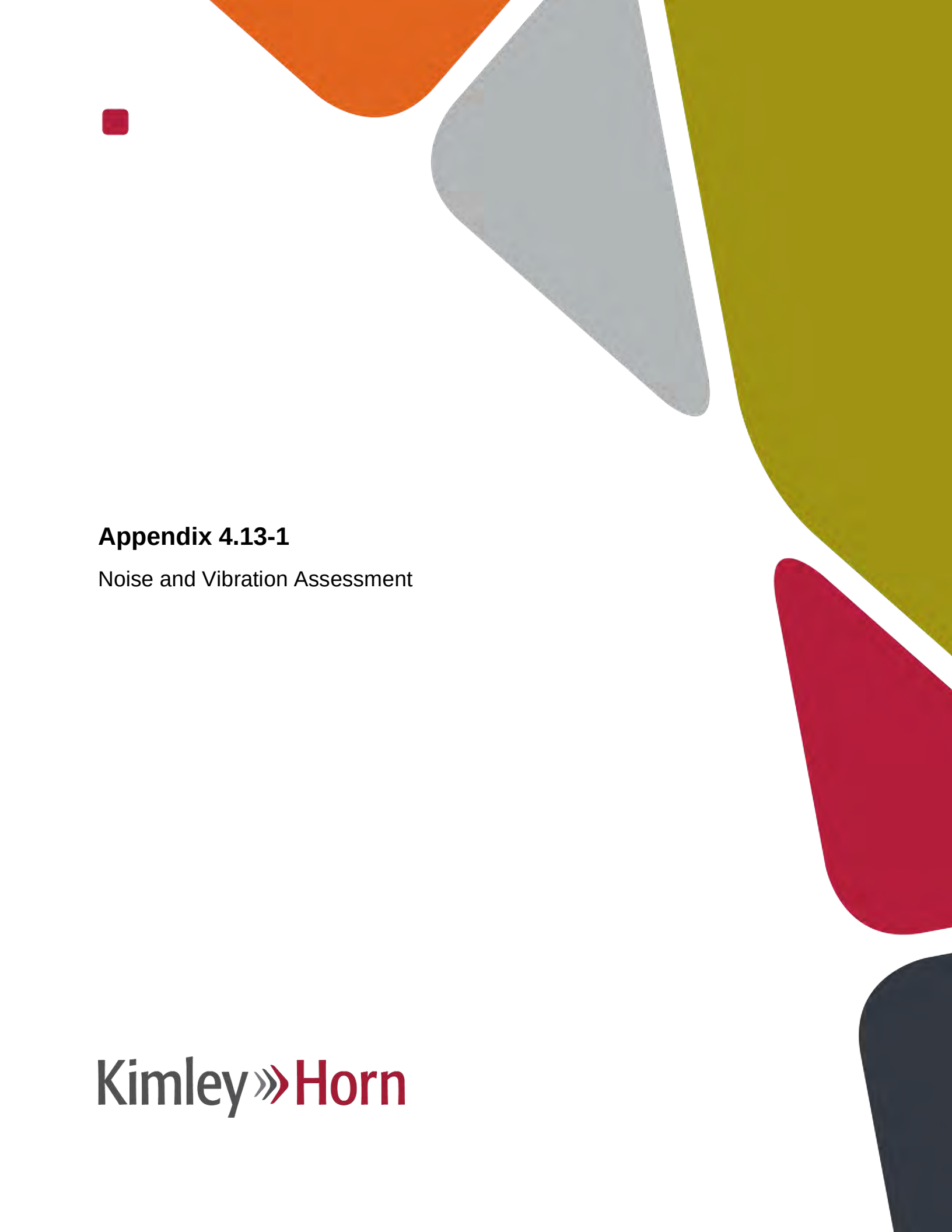
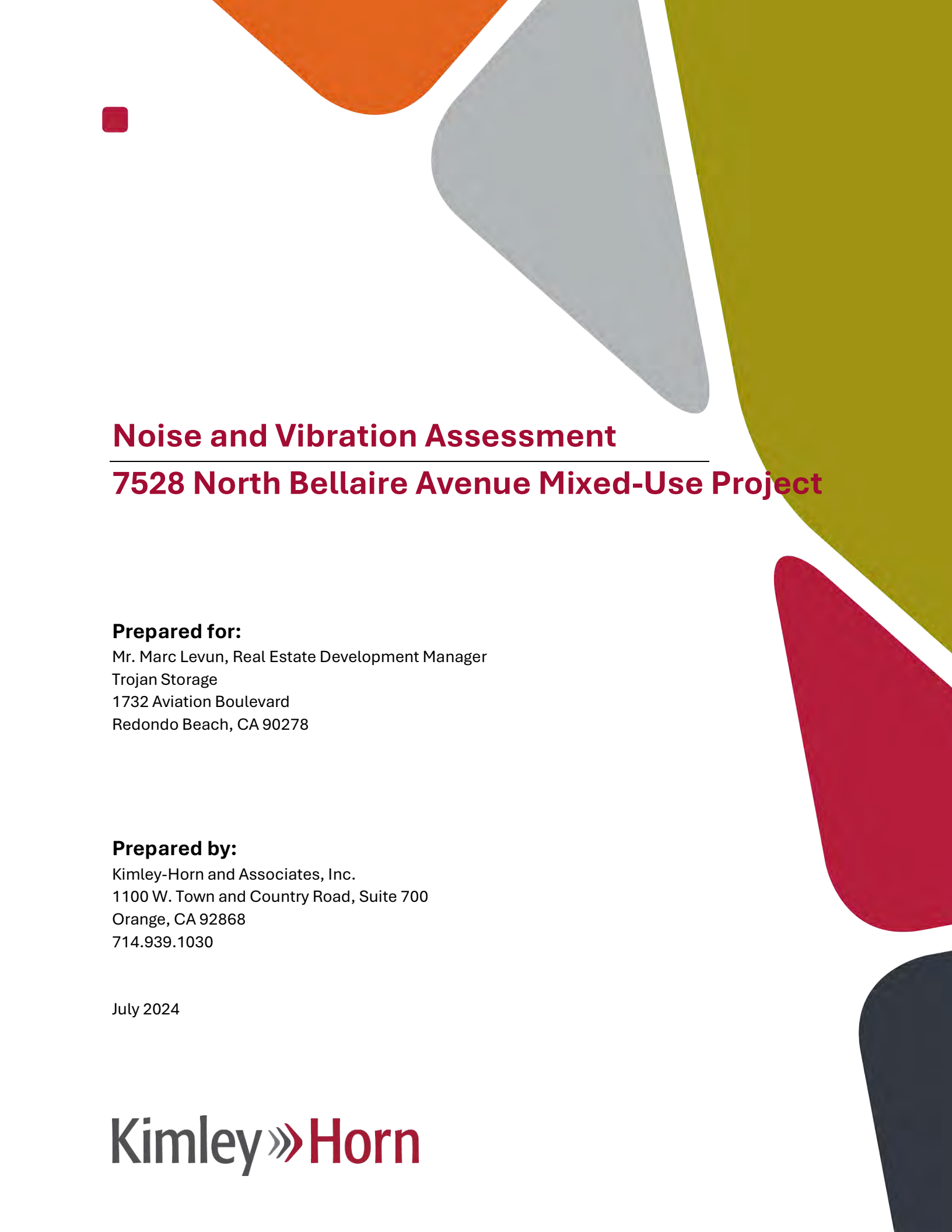




Appendix 4.13-1

Noise and Vibration Assessment



Noise and Vibration Assessment

7528 North Bellaire Avenue Mixed-Use Project

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July 2024

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Appendix A: Noise Data

List of Abbreviated Terms

APN	Assessor's Parcel Number
ADT	Average Daily Traffic
dBA	A-weighted sound level
CEQA	California Environmental Quality Act
CNEL	Community equivalent noise level
Cy	cubic yards
EPM	Environmental Protection Measure
L _{dn}	Day-night noise level
dB	Decibel
L _{eq}	Equivalent noise level
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HVAC	Heating ventilation and air conditioning
Hz	Hertz
in/sec	Inches per second
L _{max}	Maximum noise level
μPa	Micropascals
L _{min}	Minimum noise level
PPV	Peak particle velocity
RCNM	Roadway Construction Noise Model
RMS	Root mean square
STC	Sound Transmission Class
VdB	Vibration velocity level

1.0 INTRODUCTION

This report documents the results of a Noise and Vibration Assessment completed for the 7528 North Bellaire Avenue Mixed Use Project (“Project”). The purpose of this Noise and Vibration Assessment is to evaluate the Project’s potential construction and operational impacts.

1.1 Project Location

The Project site is in the County of Los Angeles (“County”), approximately 15 miles north of downtown Los Angeles, in the Sun Valley – La Tuna Canyon Community (“Community”) in the City of Los Angeles (“City”); see [Figure 1: Regional Vicinity Map](#).

The approximately 3.92-acre Project site is comprised of one parcel (APN 2305-024-030) situated northeast of the Saticoy Street at North Bellaire Avenue intersection, at 7528 North Bellaire Avenue; see [Figure 2: Local Vicinity Map](#).

1.2 Existing Onsite General Plan Land Use

The Project site’s existing land use designations are listed in [Table 1: Existing Land Use Designations](#). As indicated, most of the Project site is designated Commercial Manufacturing, with the remainder designated Parking Buffer and Low Residential.

Table 1: Existing Land Use Designations	
General Plan Designation ¹	Acres
Low Residential	0.59
Commercial Manufacturing	2.62
Parking Buffer	0.71
Total	3.92
1. City of Los Angeles, Community Planning App Sun Valley, available at: https://dcpgis.lacity.org/portal/apps/View/index.html?appid=c2368a7fdea240deba0e625dee7e29f7	

1.3 Project Description

The Project applicant proposes a mixed-use (commercial and residential) development comprised of two buildings with a total gross building area of approximately 233,632 square feet (SF), with approximately 220,232 SF of commercial (self-storage space), approximately 13,400 SF of residential space, and 22,285 SF of landscaping and open space. The proposed mixed-use development is depicted on [Figure 3: Preliminary Site Plan](#) and summarized in [Table 2: Summary of Proposed Project](#). To accommodate the proposed development, the Project proposes to remove all existing onsite land uses and improvements.

At the site’s eastern portion, the Project proposes a self-storage facility with approximately 1,584 storage units comprised of Building A1, which is a three-story, approximately 131,523 SF building with 130,823 SF of storage space (961 units) and 700 SF of office space, and Building A2, which is a three-story, approximately 88,709 SF building comprised entirely of storage space (623 units). The self-storage facility would provide interior storage space for personal and business goods- no outside storage is proposed. The hours of operation would be from 6:00 AM to 9:00 PM daily.

At the site's western portion, the Project proposes a nine-unit townhouse-style apartment development comprised of one two-story 13,400 SF building at a density of 2.3 DU/AC.

Table 2: Summary of Proposed Project				
Building	Level	Self-Storage (SF)	Self-Storage (Units)	Office (SF)
Commercial/ Storage: Building A1	Level 1	43,141	307	700
	Level 2	43,841	327	0
	Level 3	43,841	327	0
	Sub-Total Building A1	130,823	961	700
	Total Building A1 (SF)	131,523		
Commercial/ Storage Building A2	Level 1	30,486	208	0
	Level 2	30,486	219	0
	Level 3	27,737	196	0
	Sub-Total Building A2	88,709	623	0
	Total Building A2 (SF)	88,709		
Commercial	Building A Total (SF)	220,232		
	Building A Total (Units)	1,584		
	Floor Area Ratio	1.29		
Building	Level	Residential Living (SF)	Residential (DU)	Residential Garages (SF)
Residential: Building B	Level 1	0	0	6,700
	Level 2	6,700	9	0
	Sub-Total Building B	6,700	9	6,700
Residential	Total Building B (SF)	13,400		
	Total Building B (DU)	9		
	Density (DU/AC)	2.3		
TOTAL PROJECT	TOTAL BUILDING SF	233,632		
	COMMERCIAL SF	220,932		
	STORAGE UNITS	1,584		
	RESIDENTIAL SF	13,400		
	RESIDENTIAL DU	9		

Source: Jordan Architects, November 12, 2023.

Access, Circulation, and Parking

As shown in [Figure 3: Preliminary Site Plan](#), vehicular access to the Project site would be provided via one gated driveway on North Bellaire Avenue, and another gate at the southern parking lot. For circulation, the Project proposes drive aisles: along the Project site's northern boundary; west of Building A1; and south of Building B.

The Project proposes 87 off-street vehicle parking spaces in total, including 18 spaces within the apartment garages and 69 surface parking

Construction

Project construction is anticipated to occur over approximately 18 months beginning January 2026 and ending July 2027. Approximately 7,781 cubic yards (cy) of export and 4,413 cy of import are anticipated. Project construction is assumed to occur in the following sequence:

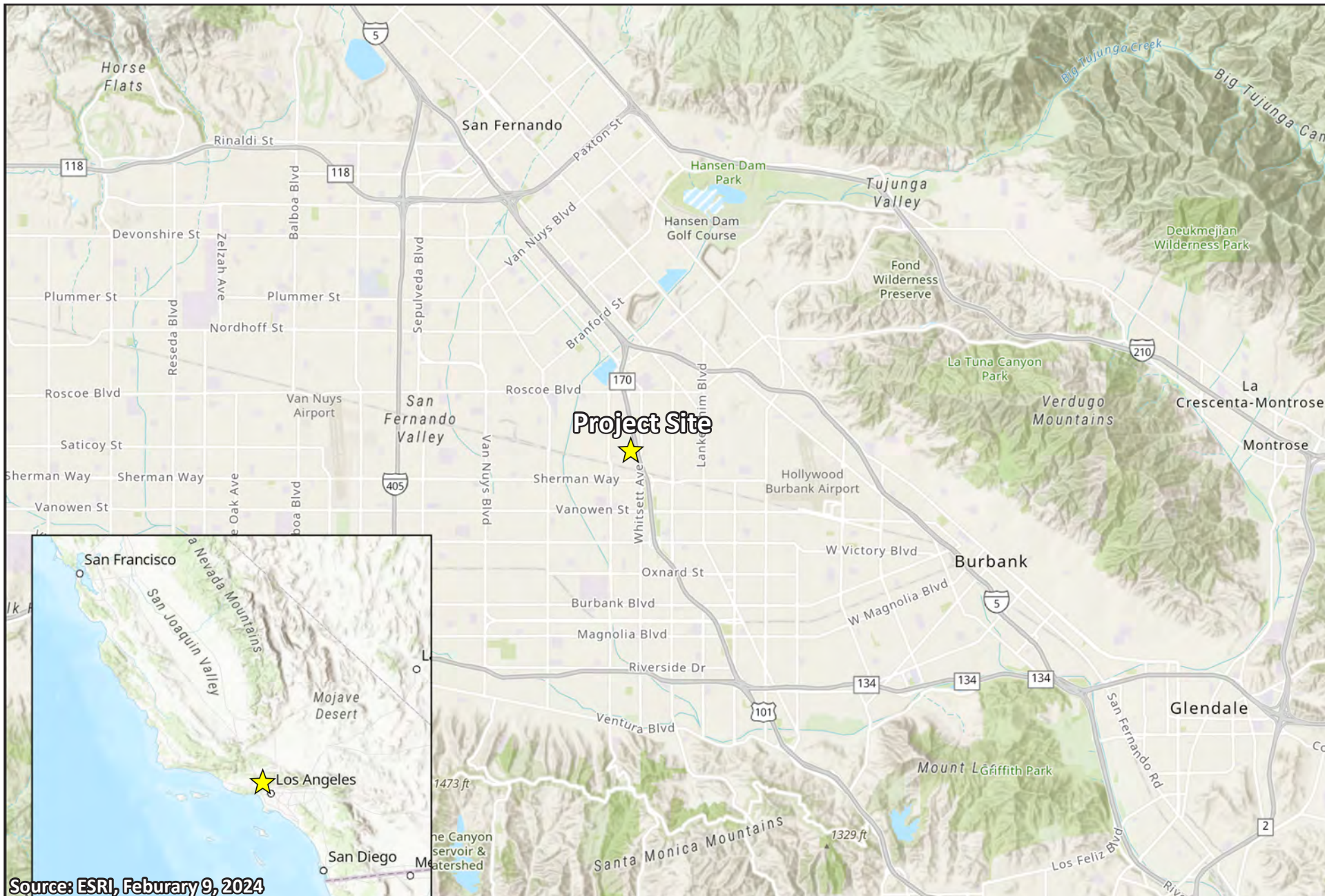
- Demolition: January 1, 2026 to January 29, 2026

- Site Preparation: January 30, 2026 to March 12, 2026
- Grading: March 13, 2026 to July 2, 2026
- Building Construction: July 6, 2026 to January 7, 2027
- Paving: January 8, 2027 to April 29, 2027
- Architectural Coating: April 30, 2027 to July 1, 2027

Approvals

The Project seeks approval of the following entitlements, among others:

- General Plan Amendment: To change the existing General Plan land use designations from Low Residential, Commercial Manufacturing, and Parking Buffer to Commercial Manufacturing to allow for the proposed self-storage and residential uses.
- Zone Change: To change the existing zoning from Tentative “R1” One-Family Zone ([T]R-1), “R2” Two-Family Zone (R2-1), and “RA” Suburban Zone (RA-1) to Commercial Manufacturing (CM-1) to allow for the proposed self-storage and residential uses.



Source: ESRI, February 9, 2024

FIGURE 1: REGIONAL VICINITY MAP
7528 North Bellaire Mixed-Use Project



FIGURE 2: LOCAL VICINITY MAP
7528 North Bellaire Mixed-Use Project

2.0 ACOUSTIC FUNDAMENTALS

2.1 Sound and Environmental Noise

Acoustics is the science of sound. Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a medium (e.g., air) to a human (or animal) ear. If the pressure variations occur frequently enough (at least 20 times per second), they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second, or hertz (Hz).

Noise is defined as loud, unexpected, or annoying sound. The fundamental acoustics model consists of a noise source, a receptor, and the propagation path between the two. The loudness of the noise source, obstructions, or atmospheric factors affecting the propagation path, determine the perceived sound level and noise characteristics at the receptor. Acoustics deals primarily with the propagation and control of sound. A typical noise environment consists of ambient noise that is the sum of many distant and indistinguishable noise sources. The sound from individual local sources is superimposed on this background noise. These sources can vary from an occasional aircraft or train passing by to continuous noise from traffic on a major highway. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a large range of numbers. To avoid this, the decibel (dB) scale was devised. The dB scale uses the hearing threshold of 20 micro-pascals (μPa) as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The dB scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels correspond closely to human perception of relative loudness. Table 3: Typical Noise Levels provides typical noise levels.

Table 3: Typical Noise Levels		
Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet fly-over at 1,000 feet	- 110 -	Rock Band
Gas lawnmower at 3 feet	- 100 -	
Diesel truck at 50 feet at 50 miles per hour	- 90 -	Food blender at 3 feet
Noisy urban area, daytime	- 80 -	Garbage disposal at 3 feet
Gas lawnmower, 100 feet	- 70 -	Vacuum cleaner at 10 feet
Commercial area		Normal Speech at 3 feet
Heavy traffic at 300 feet	- 60 -	
Quiet urban daytime	- 50 -	Large business office
Quiet urban nighttime	- 40 -	Dishwasher in next room
Quiet suburban nighttime	- 30 -	Theater, large conference room (background)
Quiet rural nighttime	- 20 -	Library
	- 10 -	Bedroom at night, concert hall (background)
		Broadcast/recording studio
Lowest threshold of human hearing	- 0 -	Lowest threshold of human hearing

Source: California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.

Noise Descriptors

The dB scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effects of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. Most commonly, environmental sounds are described in terms of the equivalent noise level (L_{eq}) that has the same acoustical energy as the summation of all the time-varying events. While L_{eq} represents the continuous sound pressure level over a given period, the day-night noise level (L_{dn}) and Community Equivalent Noise Level (CNEL) are measures of sound energy during a 24-hour period, with dB weighted sound levels from 7:00 p.m. to 7:00 a.m. Each is applicable to this analysis and defined in [Table 4: Definitions of Acoustical Terms](#).

Because sound levels can vary markedly over a short period of time, a method for describing either the sound's average character (L_{eq}) or the variations' statistical behavior (L_{xx}) must be utilized. The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within approximately plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The predicted models' accuracy depends on various factors, such as the distance between the noise receptor and the noise source, the character of the ground surface (e.g., hard or soft), and the presence or absence of structures (e.g., walls or buildings) or topography, and how well model inputs reflect these conditions.

Table 4: Definitions of Acoustical Terms	
Term	Definitions
Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in μPa (or 20 micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in dB as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g. 20 μPa). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sounds are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level (dBA)	The sound pressure level in dB is measured on a sound level meter using the A-weighting filter network. 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.
Equivalent Noise Level (L_{eq})	The average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
Maximum Noise Level (L_{max}) Minimum Noise Level (L_{min})	The maximum and minimum dBA during the measurement period.
Exceeded Noise Levels (L_{01} , L_{10} , L_{50} , L_{90})	The dBA values that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day-Night Noise Level (L_{dn})	A 24-hour average L_{eq} with a 10-dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity at nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn} .
Community Noise Equivalent Level (CNEL)	A 24-hour average L_{eq} with a 5-dBA weighting during the hours of 7:00 a.m. to 10:00 a.m. and a 10-dBA weighting added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, time of occurrence, and tonal or informational content as well as the prevailing ambient noise level.

A-Weighted Decibels

The perceived loudness of sounds is dependent on many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable and can be approximated by dBA values. There is a strong

correlation between dBA and the way the human ear perceives sound. For this reason, the dBA has become the standard tool for environmental noise assessment. All noise levels reported in this document are in terms of dBA but are expressed as dB unless otherwise noted.

Addition of Decibels

The dB scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10.¹ When the standard logarithmic dB is A-weighted, an increase of 10 dBA is generally perceived as a doubling in loudness.² For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than one source under the same conditions. Under the dB scale, three sources of equal loudness together would produce an increase of approximately 5 dBA.³

Sound Propagation and Attenuation

Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB for each doubling of distance from a stationary or point source.⁴ Sound from a line source, such as a highway, propagates outward in a cylindrical pattern. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics.⁵ No excess attenuation is assumed for hard surfaces like a parking lot or a water body. Soft surfaces, such as soft dirt or grass, can absorb sound, therefore, an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed when soft ground conditions exist between the source and receptor.⁶ For stationary and line sources, overall attenuation rates of 6 dB and 3 dB per doubling of distance, respectively, are assumed in this report.

Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the noise source and receptor reduces the noise level by approximately 5 dBA, while a solid wall or berm can reduce noise levels by 5 to 15 dBA.⁷ The way older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of approximately 20 to 25 dBA with closed windows.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from

¹ California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013.

² Ibid.

³ Ibid.

⁴ Ibid.

⁵ Ibid.

⁶ Federal Highway Administration, *FHWA Traffic Noise Model User's Guide*, January 1998.

⁷ Federal Highway Administration, *Highway Traffic and Construction Noise - Problem and Response*, April 2006.

interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA.⁸ Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in dBA, the following relationships should be noted:⁹

- Except in carefully controlled laboratory experiments, humans cannot perceive a 1-dBA change.
- Outside the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A minimum 5-dBA change is required before any noticeable change in community response would be expected. A 5-dBA increase is typically considered substantial.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Effects of Noise on People

Hearing Loss. While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise. The Occupational Safety and Health Administration has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over 8 hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.¹⁰

Annoyance. Attitude surveys are used for measuring the annoyance felt in a community by noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation between noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. A noise level of

⁸ Compiled from James P. Cowan, *Handbook of Environmental Acoustics*, 1994, and Cyril M. Harris, *Handbook of Noise Control*, 1979.

⁹ Compiled from California Department of Transportation, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013, and Federal Highway Administration, *Noise Fundamentals*, 2017.

¹⁰ U.S. Department of Labor, *Occupational Safety and Health Standards, 29 CFR 1910* (Occupational Noise Exposure).

approximately 55 dBA L_{dn} is the threshold at which a substantial percentage of people begin to report annoyance.¹¹

2.2 Ground-Borne Vibration

Sources of ground-borne vibrations include natural phenomena (earthquakes, volcanic eruptions, sea waves, landslides, etc.) or man-made causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions or heavy equipment used during construction). Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is vibration decibels (VdB) (the vibration velocity level in decibel scale). Other methods are the peak particle velocity (PPV) and the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave and is expressed in terms of inches-per-second (in/sec). The RMS velocity is defined as the average of the squared amplitude of the signal and is expressed in terms of vibration velocity decibels (VdB). The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

Table 5: Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibrations, displays people's reactions and the effects on buildings produced by continuous vibration levels. The human annoyance levels shown in Table 5 should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibrations, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where ground-borne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Ground vibration can be a concern in instances where buildings shake, and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. Common sources for ground-borne vibration are planes, trains, and construction activities such as earth-moving, which requires the use of heavy-duty earth-moving equipment. For the purposes of this analysis, a PPV descriptor with units of inches per second (in/sec) was used to evaluate construction-generated vibration for building damage and human complaints.

¹¹ Federal Interagency Committee on Noise, *Federal Agency Review of Selected Airport Noise Analysis Issues*, August 1992.

Table 5: Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibrations			
Maximum PPV (in/sec)	Caltrans Vibration Annoyance Potential Criteria	Caltrans Vibration Damage Potential Threshold Criteria	FTA Vibration Damage Criteria
0.008	--	Extremely fragile historic buildings, ruins, ancient monuments	--
0.08	Readily Perceptible	--	--
0.01	--	--	--
0.04	--	--	--
0.1	Begins to Annoy	Fragile buildings	--
0.12	--	--	Buildings extremely susceptible to vibration damage
0.2	Annoying	--	Non-engineered timber and masonry buildings
0.25	--	Historic and some old buildings	--
0.3	--	Older residential structures	Engineered concrete and masonry
0.4	Unpleasant	--	--
0.5	--	New residential structures, Modern industrial/commercial buildings	Reinforced concrete, steel, or timber (no plaster)
PPV = peak particle velocity; in/sec = inches per second; FTA = Federal Transit Administration			
Source: California Department of Transportation, <i>Transportation and Construction Vibration Guidance Manual</i> , 2020 and Federal Transit Administration, <i>Transit Noise and Vibration Assessment Manual</i> , 2018.			

2.3 Ground-Borne Noise

Ground-borne noise specifically refers to the rumbling noise emanating from the motion of building room surfaces due to the vibration of floors and walls; it is perceptible only inside buildings. The relationship between ground-borne vibration and ground-borne noise depends on the frequency content of the vibration and the acoustical absorption characteristics of the receiving room. For typical buildings, ground-borne vibration that causes low-frequency noise (i.e., the vibration spectrum peak is less than 30 Hz) results in a ground-borne noise level that is approximately 50 decibels lower than the velocity level. For ground-borne vibration that causes mid-frequency noise (i.e., the vibration spectrum peak is between 30 and 60 Hz), the ground-borne noise level will be approximately 35 dB lower than the velocity level. For ground-borne vibration that causes high-frequency noise (i.e., the vibration spectrum peak is greater than 60 Hz), the ground-borne noise level will be approximately 20 dB lower than the velocity level. Therefore, for typical buildings, the ground-borne noise level is lower than the ground-borne vibration velocity level.

3.0 REGULATORY SETTING

To limit population exposure to physically or psychologically damaging, as well as intrusive, noise levels, the Federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise.

3.1 Federal

Federal Transit Administration Noise and Vibration Guidance

The Federal Transit Administration (FTA) has published the Transit Noise and Vibration Impact Assessment Manual (FTA Transit Noise and Vibration Manual) to provide guidance on procedures for assessing impacts at different stages of transit project development.¹² The report covers both construction and operational noise impacts and describes a range of measures for controlling excessive noise and vibration. In general, the primary concern regarding vibration relates to potential physical damage from construction. The guidance document establishes criteria for evaluating the potential for damage to various structural categories from vibration.

3.2 State of California

California Government Code

California Government Code Section 65302(f) mandates that the legislative body of each county and city adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines established by the State Department of Health Services.¹³ The guidelines rank noise land use compatibility in terms of “normally acceptable,” “conditionally acceptable,” “normally unacceptable,” and “clearly unacceptable” noise levels for various land use types. Under these guidelines, single-family homes are located in “normally acceptable” exterior noise environments up to 60 CNEL and in “conditionally acceptable” exterior noise environments up to 70 CNEL. Multiple-family residential uses are located in “normally acceptable” exterior noise environments up to 65 CNEL and in “conditionally acceptable” exterior noise environments up to 70 CNEL. Schools, libraries, and churches are located in “normally acceptable” exterior noise environments up to 70 CNEL, as are office buildings and business, commercial, and professional uses.

Assembly Bill 1307

The First Appellate Court voted to uphold an appeal in the case of *Make UC A Good Neighbor et al. v. Regents of the University of California*. The published ruling states that the University of California’s EIR “failed to assess the potential noise impacts from loud student parties in residential neighborhoods near campus.”¹⁴ The Appellate Court decision received criticism due to the conflict between the need for student housing (and more broadly, affordable housing) and CEQA’s role in

¹² Federal Transit Administration, Transit Noise and Vibration Impact Assessment Manual, September 2018

¹³ State of California Governor’s Office of Planning and Research, General Plan Guidelines, Appendix D: Noise Element Guidelines, page 374, 2017, https://opr.ca.gov/docs/OPR_COMPLETE_7.31.17.pdf. Accessed October 5, 2023.

¹⁴ *Make UC a Good Neighbor v. Regents of University of California*. Available at: <https://casetext.com/case/make-uc-a-good-neighbor-v-regents-of-univ-of-cal-1>

facilitating such housing.¹⁵ In response, Governor Newsom signed AB 1307 on September 7, 2023, which states that “for residential projects, the effects of noise generated by project occupants and their guests on human beings is not a significant effect on the environment.”¹⁶

3.3 Local

City of Los Angeles General Plan

The City of Los Angeles General Plan Noise Element (Noise Element) provides guidance on controlling noise to protect residents, workers, and visitors from potentially adverse noise impacts. Its primary goal is to regulate long-term noise impacts to preserve acceptable noise environments for all land use types. The Noise Element defers regulation of temporary, point-source noises such as construction activities to the City’s Municipal Code Noise Ordinance. Concerning long-term noise impacts, the Noise Element contains stated goals, objectives, policies, and implementation programs for noise control.

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

Objective 2: Reduce or eliminate nonairport 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: 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.

Implementation P5: Continue to enforce, as applicable, city, state and federal regulations intended to abate or eliminate disturbances of the peace and other intrusive noise.

Implementation P11: For a proposed development project that is deemed to have a potentially significant noise impact on noise-sensitive uses, as defined by this chapter, require mitigation measures, as appropriate, in accordance with California Environmental Quality Act and city procedures.

Implementation P16: Use, as appropriate, the “Guidelines for Noise Compatible Land Use” (Exhibit I),¹⁷ or other measures that are acceptable to the city, to guide land use and zoning reclassification, subdivision, conditional use and use variance determinations and environmental assessment

¹⁵ Best Best & Krieger, *Governor Signs AB 1307, Clearing Roadblock to University Housing*, September 14, 2023. Available at: <https://bbklaw.com/resources/la-091423-governor-signs-ab-1307-clearing-roadblock-to-university-housing>

¹⁶ AB 1307, Public Resources Code Section 21085

¹⁷ City of Los Angeles, City of Los Angeles General Plan Noise Element, *Exhibit I: Guidelines for Noise Compatible Land Use* 1992.

considerations, especially relative to sensitive uses, as defined by this chapter, within a CNEL of 65 dB airport noise exposure areas and within a line-of-sight of freeways, major highways, railroads or truck haul routes.

City of Los Angeles Municipal Code

The City has adopted regulations to control unnecessary, excessive, and annoying noise, as set forth in the City's Noise Ordinance (Los Angeles Municipal Code [LAMC] Chapter XI, Noise Regulation). The City's Noise Ordinance establishes acceptable ambient sound levels to regulate intrusive noises (e.g., stationary mechanical equipment and vehicles other than those traveling on public streets) within specific land use zones and provides procedures and criteria for measuring the sound level of noise sources. These procedures recognize and account for differences in the perceived level of different types of noise/noise sources.

Concerning vibration, LAMC Section 91.3307.1, *Protection of Adjoining* states, "Adjoining public and private property shall be protected from damage during construction, remodeling, and demolition work. Protection must be provided for footings, foundations, party walls, chimneys, skylights, and roofs. Provisions shall be made to control water runoff and erosion during construction or demolition activities."

Concerning construction noise, LAMC Section 112.05, *Maximum Noise Level of Powered Equipment or Powered Hand Tools*, 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 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 the Los Angeles Board of Police Commissioners approves a temporary noise variance.

LAMC Section 111.02, Sound Level Measurement Procedure and Criteria provides procedures and criteria for the measurement of the sound level of "offending" noise sources. The provisions specify that a noise level increase of 5 dBA over the existing average ambient noise level at an adjacent property line is considered a noise violation. LAMC Section 112.01 (Radios, Television Sets, and Similar Devices) prohibits the production of noise from any radio, musical instrument, phonograph, television receiver, or other machine or device for the producing, reproducing or amplification of the human voice, music, or any other sound, in such a manner, as to disturb the peace, quiet, and comfort of neighbor occupants or any reasonable person residing or working in the area, or that exceeds the ambient noise level on the premises of any other occupied property, or if a condominium, apartment house, duplex, or attached business, within any adjoining unit, by more than 5 dBA.

LAMC Section 112.02, Air Conditioning, Refrigeration, Heating, Pumping, Filtering Equipment limits increase in ambient noise levels created by air conditioning, refrigeration, heating, pumping, and filtering equipment. Such equipment may not be operated in such manner as to create any noise which would cause the noise level on the premises of any other occupied property, or, if a

condominium, apartment house, duplex, or attached business, within any adjoining unit, to exceed the ambient noise level by more than 5 dBA.

L.A. CEQA Thresholds Guide

In 2006, the City set forth the L.A. CEQA Thresholds Guide (Thresholds Guide), which was intended to provide guidance, as a voluntary tool, for CEQA impact analyses. Today, these thresholds are only used as guidance in instances where City staff finds they are beneficial to use and supported with substantial evidence.¹⁸ In addition, the Thresholds Guide recognizes that its applicability and use may be re-evaluated after a period of use.

Construction Noise and Vibration Proposed Updates to Thresholds and Methodology

The City has released proposed updates to the Thresholds Guide for construction noise and vibration (Construction Noise and Vibration Proposed Updates to Thresholds and Methodology [Noise and Vibration Update]) and the City received public comments until February 19, 2024.¹⁹

The Noise and Vibration Update's proposed construction thresholds are intended to be suited to the generally urban nature of the City, while still recognizing the importance of human health, including sleep disruption. The proposed thresholds, which are discussed below, are intended to account for reasonable expectations regarding construction noise and vibration during daytime and nighttime hours and also include absolute maximum noise levels that are intended to protect human health. As part of the Noise and Vibration Update, the City would require environmental protection measures (EPMs) to be implemented as part of proposed development projects.

Proposed Daytime Construction Noise Thresholds

Increase Over Ambient. For construction activities that occur between 7:00 a.m. and 7:00 p.m. Monday through Friday, and between 8:00 a.m. and 6:00 p.m. on Saturdays, no numerical threshold above ambient noise levels is proposed.

Absolute Thresholds. On- and off-site construction noise during daytime hours (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) would be limited to a maximum 80 dBA L_{eq} (8-hour) absolute threshold at sensitive uses (at the property line with outdoor uses or at the exterior of the building), including outdoor public recreational areas.

This threshold applies to residential uses (at the property line with outdoor uses or at the exterior of the building); including expansive upper-level deck/open spaces areas that provide for the recreational use of residents. Examples include large patios or decks that are the primary outdoor use area in an apartment complex. However, this standard does not apply to private residential balconies, which may or may not extend past the exterior of a building.

Proposed Nighttime Construction Noise Thresholds

Nighttime construction activities shall not be permitted unless the City of Los Angeles Police Commission approves a variance. If such variance is granted, the following thresholds shall apply.

¹⁸ City of Los Angeles, Construction Noise and Vibration Proposed Updates to Thresholds and Methodology, Draft December 2023.

¹⁹ City of Los Angeles, Proposed Updates to Thresholds and Methodology for Construction Noise and Vibration, 2023.

Increase Over Ambient. For construction activities that occur between 7:00 p.m. and 7:00 a.m. Monday through Friday, between 6:00 p.m. and 8:00 a.m. on Saturdays, and anytime on Sundays or national holidays, noise levels at sensitive uses would not exceed 5 dBA above the ambient noise level at the receptor.

Mat pour activities (and other types of concrete pour, which require an extended continuous pour beyond the allowable construction hours) that are required to occur during nighttime hours for less than five days are exempt from this provision.

Absolute Noise. For construction activities that occur between 7:00 p.m. and 7:00 a.m. Monday through Friday, between 6:00 p.m. and 8:00 a.m. on Saturdays, and anytime on Sundays or national holidays, the maximum exterior noise level at sensitive uses where sleep is expected may not exceed the following:

- 55 dBA L_{eq} for sensitive uses within older buildings that would have operable windows that may be open.
- 65 dBA L_{eq} for sensitive uses with windows closed that are not operable and are single-glazed.
- 70 dBA L_{eq} for sensitive uses that have newer construction (i.e., the structures have been designed to ensure that an interior 45 dBA is obtained with double-paned windows)

Mat pour activities (and other types of concrete pour, which require an extended continuous pour beyond the allowable construction hours) that are required to occur during nighttime hours for less than seven days are exempt from this provision).

Proposed Vibration Thresholds for Human Annoyance

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, no numerical threshold is proposed 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 0.80 VdB at the exterior of a sensitive use building.

Proposed Vibration Thresholds for Building Damage

Architectural Building Damage—Construction activities shall not exceed the following building damage thresholds for the identified structures:

- Fragile Buildings: 0.1 PPV
- Historic Buildings: 0.25 PPV
- Older²⁰ Residential Structures: 0.3 PPV

²⁰ A building over 50 years can be considered an “older” residential structure. Source: City of Los Angeles, Proposed Updates to Thresholds and Methodology for Construction Noise and Vibration, 2023

- New Residential Structures: 0.5 PPV
- Modern Industrial/Commercial Buildings: 0.5 PPV

4.0 EXISTING CONDITIONS

4.1 Existing Noise Sources

The Project site is currently impacted by various noise sources. Mobile noise sources, including traffic along State Route 170 (SR-170), Bellaire Avenue, and Saticoy Street are the most common and prominent existing noise sources in the Project site area. Other noticeable existing noise sources on and near the Project site include parking lots, mechanical equipment (e.g., heating, ventilation, and air conditioning [HVAC] units), nearby industrial and residential uses, and other urban-related activities (e.g., idling cars/trucks, pedestrians, car radios and music playing, dogs barking, etc.).

4.2 Noise Measurements

To quantify existing ambient noise levels in the Project site area, Kimley-Horn conducted four short-term (10-minute) measurements on Tuesday, April 2, 2024; see Appendix A: Noise Data for additional details regarding how the ambient noise measurements were taken. The noise measurement sites were selected to be representative of the existing ambient noise levels at the noise-sensitive uses immediately adjacent to the Project site. The 10-minute daytime measurements were taken between 7:25 a.m. and 8:23 a.m. Measurements of L_{eq} are considered representative of the noise levels throughout the day. The average noise levels measured at each location are listed [Table 6: Existing Noise Measurement Locations and Measurements](#) and shown on

Figure 4: Noise Measurement Locations.

Table 6: Existing Noise Measurement Locations and Measurements				
Site	Location	Measurement Period	Duration	Daytime Average L_{eq} (dBA) ¹
ST-1	Teesdale Avenue adjacent to the Project site's northern boundary	8:06 a.m.	10 min	67.4
ST-2	N. Bellaire Avenue between Cohasset Street and Lull Street, adjacent to the Project site's western boundary	7:44 a.m.	10 min	54.1
ST-3	Cul-de-sac at the end of Lull Street	7:25 a.m.	10 min	54.6
ST-4	Bluebell Avenue between Cohasset Street and Stagg Street	8:23 a.m.	10 min	58.0
Source: Noise measurements taken by Kimley-Horn and Associates, April 2, 2024. See Appendix A for noise measurement results.				



FIGURE 4: NOISE MEASUREMENT LOCATIONS

7528 North Bellaire Avenue Mixed-Use Project



Kimley»Horn

4.3 Sensitive Receptors

Noise exposure standards and guidelines for various types of land uses reflect the varying noise sensitivities associated with each of these uses. The General Plan Noise Element defines noise-sensitive receptors as residences, long-term care facilities, dormitories, motels, hotels, transient lodging, houses of worship, hospitals, libraries, schools, auditoriums, concert halls, outdoor theaters, nature and wildlife preserves, and parks.²¹ Sensitive receptors near the Project site are shown in [Table 7: Sensitive Receptors](#) (see

²¹ City of Los Angeles, General Plan Noise Element, 1999.

Figure 4), along with the Noise Measurement Location that represents each sensitive receptor.

Table 7: Sensitive Receptors	
Receptor Description	Distance ¹ and Direction from the Project
Sensitive Receptor 1 - Residential (represented by noise measurement ST-1)	Adjacent to the Project site's northern boundary
Sensitive Receptor 2 – Candelabra Ministries (represented by noise measurement ST-1)	Adjacent to the Project site's northern boundary
Sensitive Receptor 3 – Whitssett Tiny Home Village (Residential) (represented by noise measurement ST-3)	Adjacent to the Project site's southern and eastern boundary
Sensitive Receptor 4 - Residential (represented by noise measurement ST-4)	50 feet west of the Project site
1. Distance measured from the property line of the Project site to the nearest sensitive receptor property line.	
Source: Google Earth, 2024.	

5.0 SIGNIFICANCE CRITERIA AND METHODOLOGY

5.1 CEQA Thresholds

California Environmental Quality Act (CEQA) Guidelines Appendix G contains analysis guidelines related to noise and vibration. The City has determined to use these guidelines as thresholds of significance for this analysis. A project would create a significant environmental impact if it would:

- Generate 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;
- Generate excessive ground-borne vibration or ground-borne noise levels; and
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the Project area to excessive noise levels.

Construction Noise

On-Site and Off-Site Construction. Pursuant to the proposed Noise and Vibration Update, on-site construction noise occurring between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday and between the hours of 8:00 a.m. and 6:00 p.m. on Saturdays would be limited to a maximum 80 dBA L_{eq} absolute threshold at sensitive uses and no numerical threshold above ambient noise levels has been proposed.

Operational Noise

On-Site Operations. Concerning on-site operational noise, the significance criteria used in the noise analysis is an increase in the ambient noise level of 5 dBA (hourly L_{eq}) at the noise-sensitive uses, in accordance with the City of Los Angeles CEQA Thresholds Guide (Noise Regulations).

Off-Site Operations. The Noise Regulations do not apply to off-site traffic (i.e., vehicles traveling on public roadways). Therefore, the City has determined to assess the significance of the Project's off-site traffic noise based on whether the Project creates, or contributes to, an increase in the ambient noise level of 3 dBA in CNEL if the plus Project noise levels fall within the "normally unacceptable" or "clearly unacceptable" category, as specified in the City's Noise Element, or an increase of 5 dBA in CNEL if the plus Project noise levels fall within the "conditionally acceptable" or "normally acceptable" category at noise-sensitive uses.

Composite Operational Noise. In addition, the City has determined to assess the significance of the Project's composite noise levels (on-site and off-site sources) based on whether the Project's composite noise levels create an increase in the ambient noise level of 3 dBA or 5 dBA in CNEL (depending on where in the acceptable/unacceptable categories the noise levels fall as discussed above) at noise-sensitive uses.

Vibration

Increases in groundborne vibration levels attributable to the Project would be primarily associated with short-term construction-related activities. Project construction could result in varying degrees

of temporary groundborne vibration, depending on the specific construction equipment used, the location of that equipment relative to the receptor, and the operations involved.

Structural Damage. Heavy construction equipment (e.g., a large bulldozer), which would generate the highest vibration level of the equipment expected to be used for Project construction, would generate a vibration level of up to 0.089 in/sec PPV at a distance of 50 feet from the equipment. Concerning potential building damage, construction vibration shall not exceed the following thresholds for the identified class of structures:

- Fragile Buildings: 0.1 PPV
- Historic Buildings: 0.25 PPV
- Older Residential Structures: 0.3 PPV
- New Residential Structures: 0.5 PPV
- Modern Industrial/Commercial Buildings: 0.5 PPV

There are no historical resources/buildings present in the vicinity of the Project site.²² This evaluation uses the City's Noise and Vibration Update structural damage criteria of 0.3 in/sec PPV at older residential structures (residential homes 20 feet to the north, Whitsett Tiny Home Village to the south, and residential homes 40 feet to the west), and 0.5 in/sec PPV at new residential structures and modern industrial/commercial buildings (and industrial uses 80 feet to the south).

Human Annoyance. In accordance with the Noise and Vibration Update, no numerical threshold is proposed related to human annoyance for construction activities occurring between the hours of 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. According to the City, intermittent human annoyance from construction activity is commonplace during daytime hours.

5.2 Methodology

Construction

Construction noise levels were based on typical noise levels generated by construction equipment published by the FTA and FHWA. Construction noise is assessed in dBA L_{eq} . This unit is appropriate because L_{eq} can be used to describe the noise level from the operation of each piece of equipment separately, and the levels can be combined to represent the noise level from all equipment operating concurrently during a given period.

Reference noise levels are used to estimate operational noise levels at nearby sensitive receptors based on a standard noise attenuation rate of 6 dB per doubling of distance (line-of-sight method of sound attenuation for point sources of noise). Noise level estimates do not account for the presence of intervening structures or topography, which may reduce noise levels at receptor locations. Therefore, the noise levels presented herein represent a conservative, reasonable worst-case estimate of actual temporary construction noise.

²² Kimley-Horn and Associates, Inc.(2024). Phase 1 Historic Resource Assessment Report for 7528 N. Bellaire Avenue, Los Angeles, Los Angeles County, California.

Operations

The analysis of the Existing and Existing Plus Project noise environments is based on noise prediction modeling and empirical observations. Reference noise level data are used to estimate the Project operational noise impacts from stationary sources. Noise levels were collected from published sources from similar types of activities and used to estimate noise levels expected with the Project's stationary sources. The reference noise levels are used to represent a worst-case noise environment as noise levels from stationary sources can vary throughout the day. Operational noise is evaluated based on the standards within the City's noise standards.

Vibration

Ground-borne vibration levels associated with construction activities for the Project were evaluated utilizing typical ground-borne vibration levels associated with construction equipment, obtained from FTA-published data for construction equipment. Potential ground-borne vibration impacts related to building/structure damage and interference with sensitive existing operations were evaluated, considering the distance from construction activities to nearby land uses and typically applied criteria for structural damage.

Ground-borne noise levels associated with construction activities for the Project were evaluated utilizing conversion factors obtained from FTA-published data. Potential ground-borne noise impacts related were evaluated and compared against FTA criteria.

6.0 POTENTIAL IMPACTS AND MITIGATION

6.1 Project Level Impacts

Threshold 5.1 **Would the Project generate 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?**

Construction

On-Site Construction Noise

Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., land clearing, grading, excavation). Noise generated by construction equipment, including earth movers and material handlers, can reach high levels that can affect noise-sensitive uses near the construction site. The Project's construction activities would include demolition, site preparation, grading, building construction, paving, and architectural coating. Noise levels associated with individual construction equipment to be used during Project construction are listed in [Table 8: Project Construction Equipment Noise Levels](#).

It is noted that the values shown in [Table 8](#) are for the equipment when operating at full power 50 feet from the sensitive receptor, without any intervening structures or topography that may reduce noise levels. Construction noise was calculated by accounting for each piece of equipment's usage factor, or the fraction of time that the equipment would be in use at full power over a specific period. Other primary sources of acoustical disturbance may include random incidents, which would last less than one minute (such as the dropping of materials or the hydraulic movement of machinery lifts). It is also noted that due to the Project site constraints and standard construction practices, only a limited amount of equipment can operate on the Project site at a particular time. Following the City's proposed Noise and Vibration Update, construction noise was predicted at the nearest noise-sensitive receptors utilizing the Federal Highway Administration's (FHWA's) Roadway Construction Noise Model (RCNM). Following the City's Noise and Vibration Update, when calculating construction noise, the loudest piece of equipment is assumed to operate at the property line nearest to the studied sensitive receptor while all other equipment anticipated for each construction phase is assumed to operate at the Project site's center. This methodology accounts for equipment operating throughout the Project site and not at a fixed location for extended periods. Therefore, the distance used in the RCNM model was measured from the Project site property line to the nearest sensitive receptor property line (or 10 feet for adjacent sensitive receptors) for the loudest piece of equipment and measured from the center of the Project construction area to the sensitive receptor property line for all other pieces of equipment.

Table 8: Project Construction Equipment Noise Levels			
Construction Phase	Equipment ¹	Typical Noise Level (dBA L _{max}) at 50 feet from Source	Usage Factor (%)
Demolition	Concrete Saw	90	20
	Excavator	81	40
	Dozer	82	40
Site Preparation	Dozer	82	40
	Tractors/Loaders/Backhoes	78	40
Grading	Excavator	81	40
	Grader	85	40
	Dozer	82	40
	Tractor/Loaders/Backhoes	78	40
Building Construction	Crane	81	16
	Forklift	85	50
	Generator	81	50
	Tractors/Loaders/Backhoes	78	40
	Welder	74	40
Paving	Cement and Mortar Mixers	79	40
	Pavers	77	50
	Paving Equipment	85	50
	Rollers	80	20
	Tractors/Loaders/Backhoes	84	40
Architectural Coating	Compressor	78	40
Source: Noise level and usage factor source: Federal Highway Association, Roadway Construction Noise Model, User Guide 2005			
1. Equipment compiled based on air quality modeling defaults and contractor input.			

Table 9: Project Construction Noise Levels

shows the estimated maximum exterior construction noise levels at the sensitive receptor nearest the Project site.²³ A combination of the following City of Los Angeles Environmental Protection Measures (EPMs) will be included in Project construction plans to minimize construction noise to the extent feasible. EPM-1 includes the proper maintenance of construction equipment and the installation of noise shielding/muffling devices. The FHWA indicates that muffler systems can reduce noise levels by 10 dBA or more.²⁴ Other noise shielding may include the use of sound aprons/shields attached to construction equipment to dampen/shield noise emanating from equipment engines, providing noise level reductions of between 10 and 20 dBA.²⁵ EPM-2 allows the use of driven (impact) pile systems only where underlying geology renders other methods infeasible. The proposed Project does not assume the use of drilled piles or impact piles. EPM-3 includes the enclosure or screening of outdoor mechanical equipment. Consistent with EPM-4, the construction staging areas would be located as far away from sensitive receptors as reasonably possible. EPM-5 requires the use of temporary noise barriers such as plywood walls with a minimum ½-inch thickness or sound blankets meeting a sound transmission class (STC) rating of 25. Sound blankets meeting an STC 25 rating can achieve a minimum 7 to 10 dBA reduction for construction equipment with 200 Hz or lower frequency.²⁶ With the implementation of EPM-1, EPM-3, EMP-4, and EPM-5, an up to 20 dBA reduction in noise is achievable and it is reasonable and feasible to assume that construction noise levels would not exceed the applicable daytime construction noise threshold of 80 dBA L_{eq}. See [Appendix A](#) for predicted construction noise for each construction phase.

- EPM-1 Noise Shielding and Muffling.** Power construction equipment (including combustion engines), fixed or mobile, will be equipped with noise shielding and muffling devices consistent with manufacturers' standards or the Best Available Control Technology. All equipment will be properly maintained, and the Applicant or Owner will require any construction contractor to keep documentation on-site during any earthwork or construction activities demonstrating that the equipment has been maintained in accordance with manufacturer's specifications.
- EPM-2 Use of Driven Pile Systems.** Driven (impact) pile systems not be used, except in locations where the underlying geology renders drilled piles, sonic, or vibratory pile drivers infeasible, as determined by a soils or geotechnical engineer and documented in a soils report.
- EPM-3 Enclosure or Screening of Outdoor Mechanical Equipment.** All outdoor mechanical equipment (e.g., generators, compressors) will be enclosed or visually screened. The equipment enclosure or screen will be impermeable (i.e., solid material with minimum weight of 2 pounds per square feet) and break the line of sight between the equipment and off-site receptors.

²³ For predicted construction noise levels for all construction phases, see [Appendix A](#).

²⁴ Federal Highway Administration, *Special Report - Measurement, Prediction, and Mitigation, Chapter 4 Mitigation*, 2017.

²⁵ Federal Highway Administration, *Special Report - Measurement, Prediction, and Mitigation, Chapter 4 Mitigation*, 2017. Available at: https://www.fhwa.dot.gov/Environment/noise/construction_noise/special_report/hcn04.cfm.

²⁶ Environmental Noise Control. *Portable Acoustic Panels*, 2024. Available at: [Portable Acoustic Panels - Environmental Noise Control \(environmental-noise-control.com\)](https://www.environmental-noise-control.com)

- EPM-4** **Location of Construction Staging Areas.** Construction staging areas shall be located as far from noise-sensitive uses as reasonably possible and technically feasible in consideration of site boundaries, topography, intervening roads and uses, and operational constraints. The burden of proving what constitutes “as far as possible” shall be upon the Applicant or Owner, in consideration of the above factors.
- EPM-5** **Temporary Walls.** Noise barriers, such as temporary walls (minimum ½-inch thick plywood) or sound blankets (minimum STC 25 rating), that are a minimum of eight feet tall, shall be erected between construction activities and noise-sensitive uses as reasonably possible and technically feasible in consideration of site boundaries, topography, intervening roads and uses, and operational constraints. The burden of proving that compliance is technically infeasible shall be upon the Applicant or Owner. Technical infeasibility shall mean that noise barriers cannot be located between construction activities and noise-sensitive uses due to site boundaries, topography, intervening roads and uses, and/or operational constraints.

Table 9: Project Construction Noise Levels				
Receptor	Maximum Noise Level at Receptor Prior to EPMs (L _{eq}) ^{1, 2}	Maximum Noise Level at Receptor with EPMs (L _{eq}) ^{1, 2}	Noise Threshold (dBA L _{eq}) ³	Exceeded?
Sensitive Receptor 1 – Residential (North)	93.2	73.2	80	No
Sensitive Receptor 2 – Candelabra Ministries (North)	82.1	62.1		No
Sensitive Receptor 3 – Whitsett Tiny Home Village (Residential) (Southeast)	84.7	64.7		No
Sensitive Receptor 4 – Residential (West)	82.7	62.7		No
1. Per the methodology described in the City’s Construction Noise and Vibration Thresholds Update, it is assumed that the loudest piece of equipment would be operated near the Project property boundary and all other equipment would operate at the center of the Project site. 2. Assumes noise level reductions (up to 20 dBA) provided by EPM-1 (Noise Shielding and Muffling), EPM-3 (Enclosure or Screening of Outdoor Mechanical Equipment), EMP 4 (location of construction staging areas) and EPM-5 (Temporary Walls). 3. Per the City’s Construction Noise and Vibration Thresholds Update, daytime construction noise shall be limited to a maximum of 80 dBA L_{eq} at sensitive uses.				
Source: Federal Highway Administration, <i>Roadway Construction Noise Model</i> , 2006. Refer to Appendix A for noise modeling results for each construction phase.				

As shown in

Table 9: Project Construction Noise Levels

, Project construction noise would not exceed the City's Noise and Vibration Update significance criterion of 80 dBA L_{eq} . In addition, construction-related noise would be temporary and would not result in a permanent increase in ambient noise levels in the area. Construction activities would also be prohibited between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday and 6:00 p.m. to 8:00 a.m. on Saturdays, and at any time on Sunday.²⁷ The City's permitted hours of construction are required in recognition that construction activities undertaken during daytime hours are a typical part of living in an urban environment and do not cause a significant impact. Therefore, the Project would not result in the generation of a substantial temporary increase in ambient noise levels in the Project site vicinity in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies during construction. Construction noise impacts would be less than significant, and no mitigation is required.

Off-Site Construction Noise

In addition to onsite construction noise, Project construction activities would generate mobile source noise from delivery/haul trucks and construction workers traveling to and from the Project site. Haul trucks would travel to and from the Project site using Satcoy Street and Bellaire Avenue. Haul and delivery trucks and construction workers are expected to arrive at the Project site before construction starts and leave when construction ends, and thus, would not overlap with the Project's construction equipment. In addition, construction workers would come from various directions to the Project site. According to modeling assumptions included in the Air Quality Assessment,²⁸ the construction phase with the highest assumed number of haul trucks is grading. There would be up to 6 daily haul truck trips accessing the Project site during the grading phase. Assuming all 6 haul trucks would pass through the same roadway segment within a 15-minute period, the estimated noise level from grading haul truck trips would be 57.9 dBA L_{eq} at 25 feet from the roadway centerline. This worst-case noise level would not exceed the City's Noise and Vibration Update significance criterion of 80 dBA L_{eq} for on- and off-site construction activities. Therefore, the Project's potential off-site construction mobile source traffic noise impact would be less than significant, and no mitigation measures are required.

Operations

The Proposed Project consists of a mixed-use (commercial and residential) development comprised of two buildings with approximately 220,232 SF of commercial (self-storage space) and approximately 13,400 SF of residential space (nine DU). Project operations would generate noise from mechanical equipment (e.g., HVAC, etc.), activities associated with loading/unloading storage items, parking areas (i.e., car door slamming, car radios, engine start-up, and car pass-by); and off-site traffic noise. Although these noise sources would be consistent with existing noise sources in the Project site vicinity, existing operational noise has not been accounted for in the analysis below to provide a conservative analysis.

²⁷ Note that the City's Noise and Vibration Thresholds Update designates daytime hours as between the hours of 7:00 a.m. to 7:00 p.m. Monday through Friday. Project construction is not anticipated to occur after 7:00 p.m. Monday through Friday.

²⁸ Kimley-Horn and Associates, Inc. (2024 7528 N. Bellaire Avenue Mixed-Use Project). Air Quality Assessment; **Appendix 4.3-1**.

On-Site Mechanical Equipment Noise

Potential stationary noise sources related to long-term Project operations would include mechanical equipment (e.g., HVAC equipment) located on the rooftops of the self-storage buildings and residential units. Mechanical equipment (e.g., HVAC equipment) typically generates noise levels of approximately 52 dBA at 50 feet.²⁹ Pursuant to LAMC Section 112.02 (Air Conditioning, Refrigeration, Heating, Pumping, Filtering Equipment), the operation of any air conditioning, refrigeration, or heating equipment shall not create any noise that would cause the noise level of another occupied property to exceed the ambient noise level by more than 5 dBA. Assuming that the mechanical equipment would be located within that portion of the rooftop nearest each sensitive receptor and not accounting for shielding provided by potential screening or architectural features, noise levels have been calculated and provided in

²⁹ Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, *Noise Navigator Sound Level Database with Over 1700 Measurement Values*, July 6, 2010

Table 10: Mechanical Equipment Noise Levels

. As shown, mechanical equipment noise levels would not increase ambient noise levels beyond the acceptable levels (5 dBA over ambient). Project mechanical equipment would not generate a substantial permanent increase in ambient noise levels in the Project vicinity in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Therefore, the Project would result in a less than significant noise impact related to on-site mechanical equipment operations, and no mitigation measures are required.

Table 10: Mechanical Equipment Noise Levels

Receptor	Distance to Receptor (feet) ¹	Level at Receptor (dBA) ²	Ambient Level (dBA) ³	Ambient + Project Noise at Receptor (dBA)	Incremental Increase (dBA)	Incremental Increase Threshold (dBA)	Significant?
1 – Residential (North)	80	47.9	67.4	67.4	0.0	5.0	No
2 – Candelabra Ministries (North)	155	42.2	67.4	67.4	0.0	5.0	No
3 – Whitsett Tiny Home Village (Southeast)	70	49.1	54.6	55.7	1.1	5.0	No
4 – Residential (West)	85	47.4	58.0	58.4	0.4	5.0	No
- Distance estimated assuming equipment location in the center of the self-storage rooftop for Receptors 1, 2, and 3 and the center of the residential dwelling unit rooftop for Receptor 4. - Distance attenuation calculated assuming reference noise level of 52 dBA Leq at 50 feet: Source for reference level: Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, <i>Noise Navigator Sound Level Database with Over 1700 Measurement Values</i>, July 6, 2010. - See Table 6 and Table 7 for representative ambient noise levels.							

Storage Loading/Unloading Activities

Self-storage unit patrons/leasers would commute to the Project site via private vehicles or small single-unit truck rentals to drop off or pick up their items from the storage units and then exit the site. Access to the site would occur via Bellaire Avenue. Loading/unloading activities would generate noise levels up to approximately 61 dBA at a distance of 50 feet.³⁰ The noise-sensitive receptors (i.e., residential land uses) nearest the proposed self-storage facility loading/unloading activities would be approximately 155 feet to the southeast.

As shown in Table 11: Storage Loading/Unloading Noise Levels, noise levels from the storage loading/unloading activities would not increase ambient noise levels beyond the acceptable levels (5 dBA over ambient pursuant to the City’s Noise Regulations). In addition, individuals would use the facility periodically and storage loading/unloading activities would occur throughout the Project site, resulting in lower noise levels than these estimates. Project storage loading/unloading activities would not generate a substantial permanent increase in ambient noise levels in the Project vicinity in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Therefore, the Project would result in a less than significant impact due to noise from storage loading/unloading activities, and no mitigation is required.

³⁰ Kariel, H. G., Noise in Rural Recreational Environments, Canadian Acoustics 19(5), 3-10, 1991.

Table 11: Storage Loading/Unloading Noise Levels

Receptor	Distance to Receptor (feet) ¹	Level at Receptor (dBA) ²	Ambient Level (dBA) ³	Ambient + Project Noise at Receptor (dBA)	Incremental Increase (dBA)	Incremental Increase Threshold (dBA)	Significant?
1 – Residential (North)	50	61.0	67.4	68.3	0.9	5.0	No
2 – Candelabra Ministries (North)	65	58.7	67.4	68.0	0.6	5.0	No
3 – Whitsett Tiny Home Village (Southeast) ⁴	50	46.0	54.6	55.2	0.6	5.0	No
4 – Residential (West)	340	44.3	58.0	58.2	0.2	5.0	No
- Distance measured from storage truck loading/unloading areas to sensitive receptor property line. - Distance attenuation calculated assuming reference noise level of 61 dBA L_{eq} at 50 feet: Source for reference level: Kariel, H. G., Noise in Rural Recreational Environments, Canadian Acoustics 19(5), 3-10, 1991. - See Table 6 and Table 7 for representative ambient noise levels. - The Whitsett Tiny Home Village (residential) sensitive receptors assumed a minimum 15 dBA reduction due to the self-storage building that stands between the noise source (truck loading/unloading areas) and the sensitive receptor which completely shields the noise source.							

On-Site Parking

Vehicles would access the Project site's parking lot via one gated driveway on North Bellaire Avenue, and another gated driveway at the southern parking lot. The Project proposes 18 spaces within the apartment garages and 69 surface parking spaces. Of the 69 surface parking spaces, 66 spaces would be provided for the self-storage facility while 3 spaces would be provided for apartment guests. Noises associated with parking activities include noise associated with vehicles starting and stopping, vehicle doors closing, car horns and alarms, loading and unloading, and conversations. The noise levels from these activities range from 53 to 61 dBA at 50 feet and are short-term.³¹

As shown in [Table 12: On-Site Parking Noise Levels](#), noise levels from the on-site parking activities would not increase ambient noise levels beyond the acceptable levels (5 dBA over ambient pursuant to the City's Noise Regulations). Therefore, noise levels generated by Project parking activities would not generate a substantial permanent increase in ambient noise levels in the Project vicinity in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. The potential impacts would be less than significant, and no mitigation is required.

³¹ Kariel, H. G., *Noise in Rural Recreational Environments*, Canadian Acoustics 19(5), 3-10, 1991.

Table 12: On-Site Parking Noise Levels

Receptor	Distance to Receptor (feet) ¹	Level at Receptor (dBA) ²	Ambient Level (dBA) ³	Ambient + Project Noise at Receptor (dBA)	Incremental Increase (dBA)	Incremental Increase Threshold (dBA)	Significant?
1 – Residential (North)	50	61.0	67.4	68.3	0.9	5.0	No
2 – Candelabra Ministries (North)	50	61.0	67.4	68.3	0.9	5.0	No
3 – Whitsett Tiny Home Village (Southeast)	475	41.4	54.6	54.8	0.2	5.0	No
4 – Residential (West)	60	59.4	58.0	61.8	3.8	5.0	No
1. Distance measured from parking areas for the self-storage building for Receptors 1, 2, and 3 and the parking areas for the residential dwelling units for Receptor 4. 2. Distance attenuation calculated assuming reference noise level of Kariel, H. G., <i>Noise in Rural Recreational Environments</i> , Canadian Acoustics 19(5), 3-10, 1991. 3. See Table 6 and Table 7 for representative ambient noise levels.							

On-Site Composite Noise

An evaluation of the Project's composite noise levels, including all on-site Project-related noise sources discussed above plus the existing ambient level, was conducted to identify the potential maximum Project-related noise level increase that may occur at noise-sensitive receptor locations. The overall sound environment of the areas surrounding the Project site would include contributions from each on-site noise source associated with Project operations. The Project's onsite noise sources would include the use of mechanical equipment, storage loading/unloading activities, and on-site parking. [Table 13: Composite On-Site Noise Levels](#), presents the estimated composite noise from on-site Project-related operational noise sources at the nearest noise-sensitive receptors. As reported in [Table 13](#), the Project would result in a maximum increase of 4.0 dBA at the residential receptors located to the west of the Project Site). Composite Project noise levels would be below the 5 dBA significance threshold. Composite operational noise would not generate a substantial permanent increase in ambient noise levels in the Project vicinity in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Therefore, the on-site composite operational noise level impacts would be less than significant, and no mitigation is required.

Table 13: Composite On-Site Noise Levels

Receptor ¹	Mechanical Equipment (dBA)	Storage Loading/ Unloading (dBA)	On-Site Parking (dBA)	Ambient Level (dBA) ¹	Ambient + Project Noise at Receptor (dBA)	Incremental Increase (dBA)	Incremental Increase Threshold (dBA)	Significant?
1 – Residential (North)	47.9	61.0	61.0	67.4	69.1	1.7	5.0	No
2 – Candelabra Ministries (North)	42.2	58.7	61.0	67.4	68.8	1.4	5.0	No
3 – Whitsett Tiny Home Village (Southeast)	49.1	46.0	41.4	54.6	56.3	1.7	5.0	No
4 – Residential (West)	47.4	44.3	59.4	58.0	62.0	4.0	5.0	No
1. See Table 6 and Table 7 for representative ambient noise levels.								

Off-Site Traffic Noise

The Project would generate increased traffic volumes along nearby roadway segments. According to the Project's average daily traffic (ADT) volumes(see Appendix A)³², the Project would increase the ADT volumes resulting in mobile source noise level increases on Project site area roadways. Traffic noise levels for roadways primarily affected by the Project were calculated using the FHWA's Highway Noise Prediction Model (FHWA-RD-77-108). Traffic noise modeling was conducted for conditions with and without the Project, based on the Project's traffic volumes.³³ As shown in [Table 14: Existing and Existing Plus Project Traffic Noise Levels](#), Existing Plus Project traffic-generated noise levels on Project site area roadways would range between 50.8 dBA CNEL and 63.1 dBA CNEL at 100 feet from the roadway centerline, and the Project would result in a maximum increase of 0.3 dBA CNEL along Saticoy Street west of Bellaire Avenue. Traffic noise increases would not exceed acceptable levels as shown below. Therefore, noise levels generated by Project ADT would not generate a substantial permanent increase in ambient noise levels in the Project vicinity in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. The potential impacts would be less than significant, and no mitigation is required.

Table 14: Existing and Existing Plus Project Traffic Noise Levels						
Roadway Segment	Existing		Existing + Project		Incremental Increase	Significant Impact?
	ADT	dBA CNEL ¹	ADT	dBA CNEL ¹		
Saticoy Street west of Bellaire Avenue	1,306	51.8	1,395	52.1	0.3	No
Saticoy Street east of Coldwater Canyon Avenue	16,557	62.9	16,646	62.9	0.0	No
Bellaire Avenue north of Saticoy Street	3,811	50.7	3,900	50.8	0.1	No
Bellaire Avenue south of Saticoy Street S.	6,087	57.6	6,158	57.7	0.1	No
Saticoy Street S. east of Bellaire Avenue	17,514	63.1	17,620	63.1	0.0	No
ADT = average daily trips; dBA = A-weighted decibels; CNEL= Community Equivalent Noise Level						
1. Traffic noise levels are at 100 feet from the roadway centerline.						
Source: Based on traffic data provided by Kimley-Horn and Associates, Inc., February 2024. Refer to Appendix A for traffic noise modeling results.						

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

Threshold 5.2 Would the Project generate excessive ground-borne vibration or ground-borne noise levels?

Construction

On-Site Construction Vibration

The Project's increases in ground-borne vibration levels would be primarily associated with short-term construction-related activities. Project construction would have the potential to result in

³² Kimley-Horn and Associates, Inc., *Existing and Existing Trips + Projects Trips*, 7528 N. Bellaire Avenue Project Technical Memo, 2024.

³³ Kimley-Horn and Associates, Inc., *Trip Generation and VMT Technical Memo for the 7528 North Bellaire Avenue Mixed-Use Project*, June 2024.

varying degrees of temporary ground-borne vibration, depending on the specific construction equipment used and the operations involved.

The FTA and Caltrans have published standard vibration velocities for construction equipment operations. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience any cosmetic damage (e.g., plaster cracks) at distances beyond 30 feet. This distance can vary substantially depending on the soil composition and underground geological layer between the vibration source and receiver. In addition, not all buildings respond similarly to vibration generated by construction equipment. Receptors susceptible to building damage include all structures located adjacent to the Project site. This evaluation uses the structural damage criteria proposed by the City's Noise and Vibration Update of 0.3 in/sec PPV at older residential structures and 0.5 in/sec for new residential, and modern industrial and commercial structures.

Table 15: Typical Construction Equipment Vibration Levels lists the reference vibration levels for typical construction equipment (measured at 25 feet). Vibratory equipment expected to be used at the Project site would include large bulldozers, loaded haul trucks, jackhammers, and small bulldozers/trucks. The ground-borne vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. As shown in Table 15, based on FTA data, vibration velocities from typical heavy construction equipment that would be used during Project construction range from 0.003 to 0.089 in/sec PPV at 25 feet from the source of activity. As shown in Table 15, at 20 feet, the operation of large bulldozers, loaded haul trucks, jackhammers, and small bulldozers/trucks would not exceed the City's threshold of 0.3 in/sec PPV for older residential uses or 0.5 in/sec PPV for new residential, and modern industrial and commercial structures. The Project's onsite construction vibration impacts would be less than significant, and no mitigation is required.

Table 15: Typical Construction Equipment Vibration Levels		
Equipment	Reference Level PPV at 25 Feet (in/sec)	PPV at 20 Feet (in/sec)
Large bulldozer	0.089	0.12
Loaded Trucks	0.076	0.11
Jackhammer	0.035	0.05
Small Bulldozer/Tractors	0.003	0.00
Structural Damage Threshold	0.30	0.30
Exceeds Thresholds?	No	No
Source: Federal Transit Administration, <i>Transit Noise and Vibration Impact Assessment Manual</i> , September 2018. * Equipment not anticipated to be required at this distance.		

Off-Site Construction Vibration

Concerning construction trucks, Project construction would involve truck travel along nearby roadways, generating vibration events with each passing truck. Due to the size constraints of the Project site, it is assumed that one truck would be arriving/leaving the Project site at a time. According to the FTA's Transit Noise and Vibration Impact Assessment, a truck rarely creates vibration levels that exceed 70 VdB (equivalent to 0.012 inches per second PPV) when on a roadway. The factors influencing levels of ground-borne vibration include vehicle speed, vehicle suspension, and wheel condition and type. The frequency of vibration events is not listed as an influencing factor

for vibration velocity by the FTA. As such, multiple trucks traveling along the roadway would increase the frequency of vibration events but would not affect the vibration velocity experienced by receptors. Therefore, the Project's off-site construction vibration impacts would be less than significant and no mitigation is required.

On-Site Ground-Borne Noise

According to the FTA, airborne noise levels would be higher than ground-borne noise levels. Unless indoor receptors have substantial sound insulation (e.g., recording studio) and would be exposed to vibration velocities great enough to cause substantial levels of ground-borne noise, ground-borne noise does not need to be assessed. Ground-borne noise is typically assessed for locations where subway or tunnel operations, where there is no airborne noise path, are present. The Project would not include a subway or tunnel, and all construction equipment would be located at grade. In addition, there are no substantially insulated indoor noise receptors located within the area surrounding the Project site. Therefore, the effects of airborne noise would still be higher than ground-borne noise levels.

According to the FTA, ground-borne A-weighted noise levels can be estimated utilizing the average vibration velocity level. For low-frequency ground vibration such as that generated by construction equipment, the ground-borne noise level is estimated by subtracting 50 dB from the vibration velocities (VdB). The use of a large bulldozer³⁴ at approximately 20 feet from the residential buildings to the north would generate vibration velocities of up to 90 VdB and ground-borne noise levels of up to 40 dBA. This level would not exceed the FTA's standard of 43 dBA at Category 2 Buildings (residences and buildings where people normally sleep) for infrequent vibration events. Therefore, impacts related to ground-borne noise during Project construction would be less than significant and no mitigation is required.

Operation

Concerning vibration-generating activities, Project operations would primarily involve personal automobiles used by employees, customers, and residents accessing the surface parking, and automobiles used during loading and unloading. Due to the rapid drop-off rate of ground-borne vibration and the short duration of the associated events, vehicular traffic-induced ground-borne vibration is rarely perceptible beyond the roadway right-of-way, and rarely results in vibration levels that cause damage to buildings in the vicinity. According to the FTA's Transit Noise and Vibration Impact Assessment, trucks rarely create vibration levels that exceed 70 VdB (equivalent to 0.012 inches per second PPV) when they are on roadways. Therefore, Project operations would result in less than significant ground-borne vibration impacts, and no mitigation is required.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

³⁴ The large bulldozer was chosen for this portion of the analysis because it is the piece of equipment that generates the highest rate of ground-borne vibration; see [Table 14](#).

Threshold 5.3 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 2.0 miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?

The Project site is located approximately 2.2 miles southeast of the Hollywood-Burbank Airport and is not located within the Airport's Planning Boundary/Influence Area. The Project site is not within an existing or projected noise contour associated with any private or public airport. The Project would not expose people residing or working in the Project area to excessive noise levels. Therefore, no impacts would occur, and no mitigation is required.

Mitigation Measures: No mitigation is required.

Level of Significance: No impact.

6.2 Cumulative Noise Impacts

Cumulative Noise Impacts

For the reasons set forth in the discussions above, the Project's construction activities would not result in a substantial temporary increase in ambient noise levels. Construction noise would be periodic and temporary noise impacts that would cease upon completion of construction activities. The Project would contribute to other proximate construction project noise impacts if construction activities were conducted concurrently. However, based on the noise analysis above, the Project's construction-related noise impacts would be less than significant.

Construction activities at other planned and approved projects near the Project site would be required to comply with applicable City noise regulations and would take place during daytime hours on the days permitted by the applicable municipal code, and projects requiring discretionary City approvals would require the respective jurisdictions to evaluate construction noise impacts, comply with the city's standard conditions of approval, and implement mitigation, if necessary, to minimize noise impacts. Construction noise impacts are by nature localized. Given that noise dissipates as it travels away from its source, noise impacts would be limited to the Project site and vicinity. Therefore, Project construction would not result in a cumulatively considerable contribution to significant cumulative impacts, assuming such a cumulative impact existed, and impacts in this regard are not cumulatively considerable.

Cumulative Operational Noise

Cumulative Off-Site Traffic Noise. The Project would generate a maximum of approximately 353 daily trips. The surrounding roadways analyzed above include Saticoy Street, Bellaire Avenue, and Saticoy Street South. As shown in [Table 14](#), Existing Plus Project traffic-generated noise levels on Project site area roadways would range between 50.8 dBA CNEL and 63.1 dBA CNEL at 100 feet from the roadway centerline, and the Project would result in a maximum increase of 0.3 dBA CNEL along Saticoy Street west of Bellaire Avenue, which is a less than perceptible level increase. The incremental increase on each of the analyzed roadways would not increase ambient noise levels

beyond the acceptable levels (5 dBA over ambient). No known past, present, or reasonably foreseeable projects would combine with the traffic noise levels generated by the Project to increase noise levels above levels acceptable by the City because each project must comply with City regulations. Therefore, the Project's contribution to traffic noise would not be cumulatively considerable.

Cumulative Stationary Noise. Stationary noise sources of the Project would result in an incremental increase in non-transportation noise sources in the Project site vicinity. However, as discussed above, the Project's operational noise would be less than significant. Similar to the Project, other planned and approved projects would be required to mitigate stationary noise impacts at nearby sensitive receptors, if necessary. As stationary noise sources are generally localized, there is a limited potential for other projects to contribute to cumulative noise impacts.

No known past, present, or reasonably foreseeable projects would combine with the operational noise levels generated by the Project to increase noise levels above acceptable standards because each project must comply with applicable City regulations that limit operational noise. Therefore, the Project, together with other projects, would not create a significant cumulative impact, and even if there were such a significant cumulative impact, the Project would not make a cumulatively considerable contribution to significant cumulative operational noises.

Given that noise dissipates as it travels away from its source, operational noise impacts from on-site activities and other stationary sources would be limited to the Project site and vicinity. Thus, cumulative operational noise impacts from related projects, when combined with project-specific noise impacts, would not be cumulatively significant.

Mitigation Measures: No mitigation is required.

Level of Significance: Less than significant impact.

7.0 REFERENCES

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6. City of Los Angeles, *City of Los Angeles General Plan Noise Element, Exhibit I: Guidelines for Noise Compatible Land Use*, 1992.
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11. Federal Highway Administration, *FHWA Traffic Noise Model User's Guide*, January 1998.
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15. Federal Interagency Committee on Noise, *Federal Agency Review of Selected Airport Noise Analysis Issues*, August 1992.
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17. James P. Cowan, *Handbook of Environmental Acoustics*, 1994, and Cyril M. Harris, *Handbook of Noise Control*, 1979.
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20. Kimley-Horn and Associates, Inc., *Existing and Existing Trips + Projects Trips, 7528 N. Bellaire Avenue Project Technical Memo*, 2024.
21. Kimley-Horn and Associates, Inc., *Trip Generation and VMT Technical Memo for the 7528 North Bellaire Avenue Mixed-Use Project*, June 2024.
22. *Make UC a Good Neighbor v. Regents of University of California*. Available at: <https://casetext.com/case/make-uc-a-good-neighbor-v-regents-of-univ-of-cal-1>
23. State of California Governor's Office of Planning and Research, *General Plan Guidelines*, Appendix D: Noise Element Guidelines, page 374, 2017, https://opr.ca.gov/docs/OPR_COMPLETE_7.31.17.pdf. Accessed October 5, 2023.
24. U.S. Department of Labor, *Occupational Safety and Health Standards*, 29 CFR 1910 (Occupational Noise Exposure).

Appendix A

Noise Data

Noise Measurement Field Data			
Project:	7528 N Bellaire Avenue	Job Number:	194421006
Site No.:	ST-1	Date:	4/2/2024
Analyst:	Alice Cao & Kennedy Caudle	Time:	8:06 AM
Location:	Corner of Bellaire Avenue near cross section of Cohasset Street		
Noise Sources:	Ongoing traffic, people talking, birds, passing plane, school buses, garbage truck		
Comments:			
Results (dBA):			
	Leq:	Lmin:	Lmax:
	67.4	50.1	87.2
			Peak:
			100.3
Equipment		Weather	
Sound Level Meter:	LD SoundExpert LxT	Temp. (degrees F):	58
Calibrator:	CAL200	Wind (mph):	2
Response Time:	Slow	Sky:	Clear
Weighting:	A	Bar. Pressure:	30.23
Microphone Height:	5 feet	Humidity:	63%
Photo: 			

Measurement Report

Report Summary

Meter's File Name	ST_.017.s	Computer's File Name	LxTse_0005586-20240402 080607-ST_.ldbin		
Meter	LxT SE 0005586	Firmware	2.404		
User		Location			
Job Description					
Note					
Start Time	2024-04-02 08:06:07	Duration	0:10:00.0		
End Time	2024-04-02 08:16:07	Run Time	0:10:00.0	Pause Time	0:00:00.0
Pre-Calibration	2024-04-01 14:17:40	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA _{eq}	67.4 dB		
LAE	95.2 dB	SEA	--- dB
EA	366.4 µPa²h		
LA _{peak}	100.3 dB	2024-04-02 08:12:38	
LAS _{max}	87.2 dB	2024-04-02 08:12:39	
LAS _{min}	50.1 dB	2024-04-02 08:06:09	
LA _{eq}	67.4 dB		
LC _{eq}	75.7 dB	LC _{eq} - LA _{eq}	8.3 dB
LA _{eq}	70.0 dB	LA _{eq} - LA _{eq}	2.6 dB

Exceedances

	Count	Duration
--	-------	----------

LAS > 85.0 dB	1	0:00:03.5
LAS > 115.0 dB	0	0:00:00.0
LApk > 135.0 dB	0	0:00:00.0
LApk > 137.0 dB	0	0:00:00.0
LApk > 140.0 dB	0	0:00:00.0

Community Noise

L _{DN}	L _{Day}	L _{Night}	
67.4 dB	67.4 dB	0.0 dB	
L _{DEN}	L _{Day}	L _{Eve}	L _{Night}
67.4 dB	67.4 dB	--- dB	--- dB

Any Data

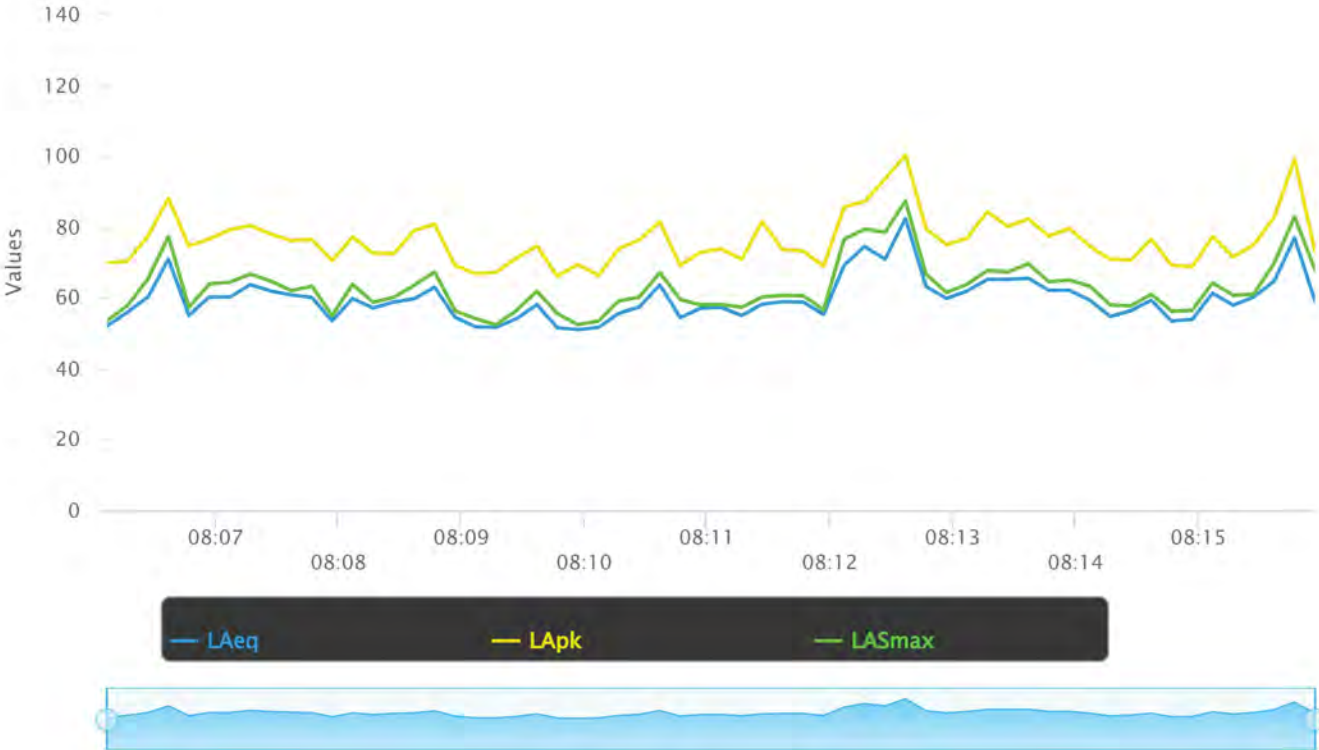
A		C		Z	
Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	67.4 dB	75.7 dB		--- dB	
L _{ξ(max)}	87.2 dB	--- dB	None	--- dB	None
L _{ξ(min)}	50.1 dB	--- dB	None	--- dB	None
L _{Peak(max)}	100.3 dB	--- dB	None	--- dB	None

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	69.7 dB
LAS 10.0	65.3 dB
LAS 33.3	60.5 dB
LAS 50.0	58.0 dB
LAS 66.6	55.9 dB
LAS 90.0	52.5 dB

Time History



Noise Measurement Field Data

Project:	7528 N Bellaire Avenue	Job Number:	194421006
Site No.:	ST-2	Date:	4/2/2024
Analyst:	Alice Cao & Kennedy Caudle	Time:	7:44 AM

Location: In front of 1560 Teesdale Avenue

Noise Sources: Ongoing traffic, people talking, birds, passing plane, school buses, garbage truck

Comments: Passing plane, birds, on-going traffic, dogs barking

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
54.1	48.7	66.4	86.0

Equipment

Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather

Temp. (degrees F):	57
Wind (mph):	2
Sky:	Clear
Bar. Pressure:	30.23
Humidity:	65%

Photo:



Kimley»Horn

Measurement Report

Report Summary

Meter's File Name	ST_.016.s	Computer's File Name	LxTse_0005586-20240402 074428-ST_.016.ldbin		
Meter	LxT SE 0005586	Firmware	2.404		
User		Location			
Job Description					
Note					
Start Time	2024-04-02 07:44:28	Duration	0:10:00.0		
End Time	2024-04-02 07:54:28	Run Time	0:10:00.0	Pause Time	0:00:00.0
Pre-Calibration	2024-04-01 14:17:40	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA _{eq}	54.1 dB		
LAE	81.9 dB	SEA	--- dB
EA	17.1 µPa²h		
LA _{peak}	86.0 dB	2024-04-02 07:54:27	
LAS _{max}	66.4 dB	2024-04-02 07:48:40	
LAS _{min}	48.7 dB	2024-04-02 07:50:24	
LA _{eq}	54.1 dB		
LC _{eq}	65.5 dB	LC _{eq} - LA _{eq}	11.4 dB
LA _{eq}	56.4 dB	LA _{eq} - LA _{eq}	2.3 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LApk > 135.0 dB	0	0:00:00.0
LApk > 137.0 dB	0	0:00:00.0
LApk > 140.0 dB	0	0:00:00.0

Community Noise

L _{DN}	L _{Day}	L _{Night}	
54.1 dB	54.1 dB	0.0 dB	
L _{DEN}	L _{Day}	L _{Eve}	L _{Night}
54.1 dB	54.1 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	54.1 dB		65.5 dB		--- dB	
L _{ξ(max)}	66.4 dB	2024-04-02 07:48:40	--- dB	None	--- dB	None
L _{ξ(min)}	48.7 dB	2024-04-02 07:50:24	--- dB	None	--- dB	None
L _{Peak(max)}	86.0 dB	2024-04-02 07:54:27	--- dB	None	--- dB	None

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	59.5 dB
LAS 10.0	55.5 dB
LAS 33.3	52.0 dB
LAS 50.0	51.5 dB
LAS 66.6	50.9 dB
LAS 90.0	49.8 dB

Noise Measurement Field Data

Project:	7528 N Bellaire Avenue	Job Number:	194421006
Site No.:	ST-3	Date:	4/2/2024
Analyst:	Alice Cao & Kennedy Caudle	Time:	7:25 AM

Location: End of Lull Street in cul de sac

Noise Sources: On-going traffic, birds, gardeners/garden activity, passing plane

Comments:

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
54.6	52.0	60.3	90.1

Equipment

Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather

Temp. (degrees F):	54
Wind (mph):	3
Sky:	Clear
Bar. Pressure:	30.22
Humidity:	67%

Photo:



Measurement Report

Report Summary

Meter's File Name	ST_.015.s	Computer's File Name	LxTse_0005586-20240402 072535-ST_.015.ldbin		
Meter	LxT SE 0005586	Firmware	2.404		
User		Location			
Job Description					
Note					
Start Time	2024-04-02 07:25:35	Duration	0:10:00.0		
End Time	2024-04-02 07:35:35	Run Time	0:10:00.0	Pause Time	0:00:00.0
Pre-Calibration	2024-04-01 14:17:40	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA _{eq}	54.6 dB		
LAE	82.4 dB	SEA	--- dB
EA	19.2 µPa²h		
LA _{peak}	90.1 dB	2024-04-02 07:34:44	
LAS _{max}	60.3 dB	2024-04-02 07:34:45	
LAS _{min}	52.0 dB	2024-04-02 07:29:12	
LA _{eq}	54.6 dB		
LC _{eq}	66.0 dB	LC _{eq} - LA _{eq}	11.4 dB
LA _{eq}	55.6 dB	LA _{eq} - LA _{eq}	1.0 dB

Exceedances

	Count	Duration
--	-------	----------

LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LApk > 135.0 dB	0	0:00:00.0
LApk > 137.0 dB	0	0:00:00.0
LApk > 140.0 dB	0	0:00:00.0

Community Noise

L _{DN}	L _{Day}	L _{Night}	
54.6 dB	54.6 dB	0.0 dB	
L _{DEN}	L _{Day}	L _{Eve}	L _{Night}
54.6 dB	54.6 dB	--- dB	--- dB

Any Data		A	C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	54.6 dB		66.0 dB		--- dB	
L _{S(max)}	60.3 dB	2024-04-02 07:34:45	--- dB	None	--- dB	None
L _{S(min)}	52.0 dB	2024-04-02 07:29:12	--- dB	None	--- dB	None
L _{Peak(max)}	90.1 dB	2024-04-02 07:34:44	--- dB	None	--- dB	None

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	56.7 dB
LAS 10.0	56.0 dB
LAS 33.3	54.6 dB
LAS 50.0	54.1 dB
LAS 66.6	53.7 dB
LAS 90.0	53.1 dB

Noise Measurement Field Data

Project:	7528 N Bellaire Avenue	Job Number:	194421006
Site No.:	ST-4	Date:	4/2/2024
Analyst:	Alice Cao & Kennedy Caudle	Time:	8:23 AM

Location: Bluebell Ave near Cohasset Street

Noise Sources: Gardening equipment, passing plane, passing cars

Comments:

Results (dBA):

Leq:	Lmin:	Lmax:	Peak:
58.0	46.0	73.3	87.2

Equipment

Sound Level Meter:	LD SoundExpert LxT
Calibrator:	CAL200
Response Time:	Slow
Weighting:	A
Microphone Height:	5 feet

Weather

Temp. (degrees F):	60
Wind (mph):	2
Sky:	Clear
Bar. Pressure:	30.23
Humidity:	59%

Photo:



Measurement Report

Report Summary

Meter's File Name	ST_.018.s	Computer's File Name	LxTse_0005586-20240402 082346-ST_.ldbin		
Meter	LxT SE 0005586	Firmware	2.404		
User		Location			
Job Description					
Note					
Start Time	2024-04-02 08:23:46	Duration	0:10:00.0		
End Time	2024-04-02 08:33:46	Run Time	0:10:00.0	Pause Time	0:00:00.0
Pre-Calibration	2024-04-01 14:17:40	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA _{eq}	58.0 dB		
LAE	85.8 dB	SEA	--- dB
EA	42.1 µPa²h		
LA _{peak}	87.2 dB	2024-04-02 08:27:06	
LAS _{max}	73.3 dB	2024-04-02 08:27:06	
LAS _{min}	46.0 dB	2024-04-02 08:31:59	
LA _{eq}	58.0 dB		
LC _{eq}	68.0 dB	LC _{eq} - LA _{eq}	10.0 dB
LA _{eq}	59.9 dB	LA _{eq} - LA _{eq}	1.9 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LApk > 135.0 dB	0	0:00:00.0
LApk > 137.0 dB	0	0:00:00.0
LApk > 140.0 dB	0	0:00:00.0

Community Noise

L _{DN}	L _{Day}	L _{Night}	
58.0 dB	58.0 dB	0.0 dB	
L _{DEN}	L _{Day}	L _{Eve}	L _{Night}
58.0 dB	58.0 dB	--- dB	--- dB

Any Data

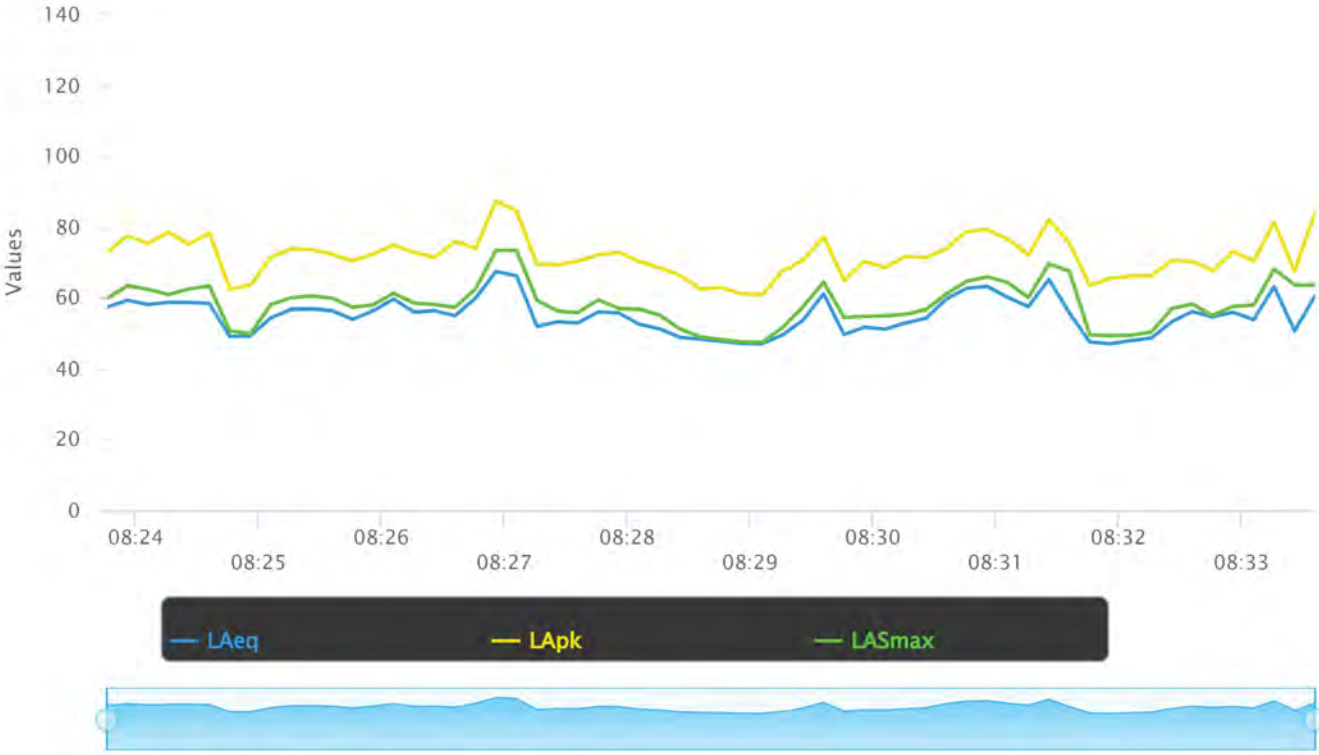
	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	58.0 dB		68.0 dB		--- dB	
L _{ξ(max)}	73.3 dB	2024-04-02 08:27:06	--- dB	None	--- dB	None
L _{ξ(min)}	46.0 dB	2024-04-02 08:31:59	--- dB	None	--- dB	None
L _{Peak(max)}	87.2 dB	2024-04-02 08:27:06	--- dB	None	--- dB	None

Overloads	Count	Duration	OBA Count	OBA Duration
	0	0:00:00.0	0	0:00:00.0

Statistics

LAS 5.0	63.5 dB
LAS 10.0	61.5 dB
LAS 33.3	56.5 dB
LAS 50.0	54.5 dB
LAS 66.6	51.3 dB
LAS 90.0	47.8 dB

Time History



Project:
Construction Noise Impact on Sensitive Receptors

<i>Parameters</i>		
Construction Hours:	Daytime hours (7 am to 7 pm)	8
	Evening hours (7 pm to 10 pm)	0
	Nighttime hours (10 pm to 7 am)	0
Leq to L10 factor		3

		Average Distance (feet)	Distance to Property Line (feet)	Shielding	Direction								
1	Residential	125	15	0	N								
2	Residential (Candelabra Ministries)	150	60	0	N								
3	Residential (Whissett Tiny Home Village)	280	40	0	S								
4	Residential	440	50	0	W								
						RECEPTOR 1	RECEPTOR 2	RECEPTOR 3	RECEPTOR 4				
Construction Phase		Equipment Type	No. of Equip.	Reference Acoustical Usage Factor	Noise Level at 50ft per Unit, Lmax	Noise Level at Receptor 1, Lmax	Noise Level at Receptor 1, Leq	Noise Level at Receptor 2, Lmax	Noise Level at Receptor 2, Leq	Noise Level at Receptor 3, Lmax	Noise Level at Receptor 3, Leq	Noise Level at Receptor 4, Lmax	Noise Level at Receptor 4, Leq
Demolition													
	* Concrete Saw	1	20%	90	100.1	93.1		88.0	81.0	91.5	84.5	89.6	82.6
	Excavator	3	40%	81	77.5	73.5		75.9	71.9	70.5	66.5	66.6	62.6
	Dozer	2	40%	82	76.8	72.8		75.2	71.2	69.7	65.8	65.8	61.8
	Combined LEQ						93.2		81.9		84.7		82.7
Site Preparation													
	Dozer	2	40%	82	76.8	72.8		75.2	71.2	69.7	65.8	65.8	61.8
	* Dozer	1	40%	82	92.2	88.2		80.1	76.1	83.6	79.7	81.7	77.7
	Backhoe	1	40%	78	69.6	65.7		68.1	64.1	62.6	58.7	58.7	54.7
	Combined LEQ						88.3		77.5		79.9		77.9
Grading													
	Excavator	1	40%	81	72.7	68.8		71.2	67.2	65.7	61.8	61.8	57.8
	* Grader	1	40%	85	95.5	91.5		83.4	79.4	86.9	83.0	85.0	81.0
	Dozer	1	40%	82	73.7	69.8		72.2	68.2	66.7	62.8	62.8	58.8
	Backhoe	3	40%	78	74.4	70.4		72.8	68.8	67.4	63.4	63.5	59.5
	Combined LEQ						91.6		80.3		83.1		81.1
Building Construction													
	Crane	1	16%	81	72.6	64.7		71.1	63.1	65.6	57.7	61.7	53.8
	Forklift All Other Equipment > 5 HP	2	50%	85	80.1	77.0		78.5	75.5	73.0	70.0	69.1	66.1
	Generator	1	50%	81	72.6	69.6		71.1	68.0	65.6	62.6	61.7	58.7
	Backhoe	3	40%	78	74.4	70.4		72.8	68.8	67.4	63.4	63.5	59.5

Welder/Torch	1	40%	74	66.0	62.1	64.5	60.5	59.0	55.1	55.1	51.1
* All Other Equipment > 5 HP	1	50%	85	95.5	92.4	83.4	80.4	86.9	83.9	85.0	82.0
Combined LEQ					92.6		82.1		84.2		82.2
Paving											
Concrete Mixer Truck	2	40%	79	73.9	69.9	72.3	68.3	66.8	62.9	62.9	58.9
Paver	1	50%	77	69.2	66.2	67.7	64.6	62.2	59.2	58.3	55.3
Paving Equipment All Other Equipment > 5 HP	1	50%	85	77.0	74.0	75.5	72.4	70.0	67.0	66.1	63.1
Roller	2	20%	80	75.1	68.1	73.5	66.5	68.0	61.1	64.1	57.1
Tractor	1	40%	84	76.0	72.1	74.5	70.5	69.0	65.1	65.1	61.1
Paving Equipment All Other Equipment > 5 HP	1	50%	85	95.5	92.4	83.4	80.4	86.9	83.9	85.0	82.0
Combined LEQ					92.6		81.8		84.1		82.1
Architectural Coating											
Compressor (air)	1	40%	78	69.7	65.8	68.2	64.2	62.7	58.8	58.8	54.8
Combined LEQ					65.8		64.2		58.8		54.8
Maximum Noise Level					93.2		82.1		84.7		82.7
Maximum Noise Level with EPMs					73.2		62.1		64.7		62.7

Source for Ref. Noise Levels: RCNM, 2005

* Loudest piece of equipment measured from the construction boundary nearest to the receptor.
Source: City of Los Angeles, Construction Noise and Vibration, Proposed Updates to Thresholds and Methodology, 2023.

Project: 7528 N Bellaire Ave Self Storage Project
Mechanical Equipment Noise Calculations

Receptor	Reference Level (dBA)	Reference Distance (feet) ¹	Distance to Receptor (feet) ²	Level at Receptor (dBA) ³	Ambient Level (dBA)	Combined Noise at Receptor (dBA)	Incremental Increase (dBA)	Significant?
1 - Residential (North)	52	50	80	47.9	67.4	67.4	0.0	No
2 - Candelabra Ministries (North)	52	50	155	42.2	67.4	67.4	0.0	No
3 - Whitssett Tiny Home Village (Residential) (Southeast)	52	50	70	49.1	54.6	55.7	1.1	No
4 - Residential (West)	52	50	85	47.4	58.0	58.4	0.4	No

1. Source for reference level: Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, *Noise Navigator Sound Level Database with Over 1700 Measurement Values* , July 6, 2010.

2. Distance estimated using location of rooftop equipment as indicated on Roof Plan

3. Calculated using the inverse square law formula for sound attenuation: $dBA_2 = dBA_1 + 20\text{Log}(d_1/d_2)$, where dBA_2 = estimated noise level at receptor; dBA_1 = reference noise level; d_1 = reference distance; d_2 = receptor location distance.

Project: 7528 N Bellaire Ave Self Storage Project
Storage Loading/Unloading Activities

Receptor	Reference Level (dBA)	Reference Distance (feet) ¹	Distance to Receptor (feet) ²	Level at Receptor (dBA) ³	Ambient Level (dBA)	Combined Noise at Receptor (dBA)	Incremental Increase (dBA)	Significant?
1 - Residential (North)	61	50	50	61.0	67.4	68.3	0.9	No
2 - Candelabra Ministries (North)	61	50	65	58.7	67.4	68.0	0.6	No
3 - Whitssett Tiny Home Village (Residential) (Southeast)4	61	50	50	46.0	54.6	55.2	0.6	No
4 - Residential (West)	61	50	340	44.3	58.0	58.2	0.2	No

1. Source for reference level: Kariel, H. G., Noise in Rural Recreational Environments, Canadian Acoustics 19(5), 3-10, 1991.

2. Distance estimated using location of truck loading docks on the Projet conceptual site plan

3. Calculated using the inverse square law formula for sound attenuation: $dBA_2 = dBA_1 + 20\text{Log}(d_1/d_2)$, where dBA_2 = estimated noise level at receptor; dBA_1 = reference noise level; d_1 = reference distance; d_2 = receptor location distance.

4. The Whitssett Tiny Hme Village (residential) receptors assumed a minimum 15 dBA reduction due to the self-storage building that stands between the noise source 9truck loading/unloading areas) and the receptor which completely shields the noise source (Federal Highway Administration, Roadway Construction Noise Model User's Guide Final Report, 2006).

Project: 7528 N Bellaire Ave Self Storage Project
On-Site Parking

Receptor	Reference Level (dBA)	Reference Distance (feet) ¹	Distance to Receptor (feet) ²	Level at Receptor (dBA) ³	Ambient Level (dBA)	Combined Noise at Receptor (dBA)	Incremental Increase (dBA)	Significant?
1 - Residential (North)	61	50	50	61.0	67.4	68.3	0.9	No
2 - Candelabra Ministries (North)	61	50	50	61.0	67.4	68.3	0.9	No
3 - Whitssett Tiny Home Village (Residential) (Southeast)	61	50	475	41.4	54.6	54.8	0.2	No
4 - Residential (West)	61	50	60	59.4	58.0	61.8	3.8	No

1. Source for reference level: Elliott H. Berger, Rick Neitzel, and Cynthia A. Kladden, *Noise Navigator Sound Level Database with Over 1700 Measurement Values* , July 6, 2010.

2. Distance estimated using location of rooftop equipment as indicated on Roof Plan

3. Calculated using the inverse square law formula for sound attenuation: $dBA_2 = dBA_1 + 20\log(d_1/d_2)$, where dBA_2 = estimated noise level at receptor; dBA_1 = reference noise level; d_1 = reference distance; d_2 = receptor location distance.

Project: 7528 N Bellaire Ave Self Storage Project

Composite Noise

Receptor	Mechanical Equipment (Leq)	Storage Loading/Unloading (Leq)	On-Site Parking (Leq)	Combined Noise at Receptor (Leq)	Ambient Level (dBA)	Combined Noise at Receptor (dBA Leq)	Incremental Increase (dBA)	Significant?
1 - Hotel (N)	47.9	61.0	61.0	64.1	67.4	69.1	1.7	No
2 - Sunset Montessori (S)	42.2	58.7	61.0	63.1	67.4	68.8	1.4	No
3 - Residential (SE)	49.1	46.0	41.4	51.3	54.6	56.3	1.7	No
4 - Residential (S)	47.4	44.3	59.4	59.8	58.0	62.0	4.0	No

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name: 7528 N Bellaire Avenue
Project Number: 194421006
Scenario: Existing
Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

#	Roadway	Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Vehicle Mix		Distance from Centerline of Roadway				
								Medium Trucks	Heavy Trucks	CNEL at 100 Feet	Distance to Contour			
										70 CNEL	65 CNEL	60 CNEL	55 CNEL	
1	Saticoy Street	West of Bellaire Avenue	2	10	1,306	35	0	2.0%	1.0%	51.8	-	-	-	48
2	Saticoy Street	East of Coldwater Canyon Avenue	2	20	16,557	35	0	2.0%	1.0%	62.9	-	61	194	615
3	Bellaire Avenue	North of Saticoy Street	2	0	3,811	15	0	2.0%	1.0%	50.7	-	-	-	37
4	Bellaire Avenue	South of Saticoy Street South	2	0	6,087	30	0	2.0%	1.0%	57.6	-	-	58	183
5	Saticoy Street South	East of Bellaire Avenue	2	10	17,514	35	0	2.0%	1.0%	63.1	-	65	204	646

¹ Distance is from the centerline of the roadway segment to the receptor location.

"-" = contour is located within the roadway right-of-way.

FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels

Project Name:

Project Number:

Scenario: Existing Plus Project

Ldn/CNEL: CNEL

Assumed 24-Hour Traffic Distribution:

	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

#	Roadway	Segment	Lanes	Median Width	ADT Volume	Speed (mph)	Alpha Factor	Vehicle Mix		Distance from Centerline of Roadway				
								Medium Trucks	Heavy Trucks	CNEL at 100 Feet	70 CNEL	65 CNEL	60 CNEL	55 CNEL
1	Saticoy Street	West of Bellaire Avenue	2	10	1,395	35	0	2.0%	1.0%	52.1	-	-	-	51
2	Saticoy Street	East of Coldwater Canyon Avenue	2	20	16,646	35	0	2.0%	1.0%	62.9	-	62	196	618
3	Bellaire Avenue	North of Saticoy Street	2	0	3,900	15	0	2.0%	1.0%	50.8	-	-	-	38
4	Bellaire Avenue	South of Saticoy Street South	2	0	6,158	30	0	2.0%	1.0%	57.7	-	-	59	185
5	Saticoy Street Sout	East of Bellaire Avenue	2	10	17,620	35	0	2.0%	1.0%	63.1	-	65	206	650

¹ Distance is from the centerline of the roadway segment to the receptor location.

"-" = contour is located within the roadway right-of-way.