

N O I S E F U N D A M E N T A L S

Fundamentals of Noise

NOISE

Noise is most often defined as unwanted sound; whether it is loud, unpleasant, unexpected, or otherwise undesirable. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as “noisiness” or “loudness.”

Noise Descriptors

The following are brief definitions of terminology used in this chapter:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.
- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.
- **Decibel (dB).** A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20 μPa).
- **Vibration Decibel (VdB).** A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the U.S., the standard reference velocity is 1 micro-inch per second (1×10^{-6} in/sec).
- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.
- **Statistical Sound Level (L_n).** The sound level that is exceeded “n” percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the “median sound level.” The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the “intrusive sound level.” The L_{90} is the sound level exceeded 90 percent of the time and is often considered the “effective background level” or “residual noise level.”

- **Maximum Sound Level ($L_{\max}$).** The highest RMS sound level measured during the measurement period.
- **Root Mean Square Sound Level (RMS).** The square root of the average of the square of the sound pressure over the measurement period.
- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB from 10:00 PM to 7:00 AM. NOTE: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive – that is, higher than the L_{dn} value). As a matter of practice, L_{dn} and CNEL values are interchangeable and are treated as equivalent in this assessment.
- **Peak Particle Velocity (PPV).** The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.
- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

Characteristics of Sound

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves.

Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB, frequency or pitch is measured in Hertz [Hz] or cycles per second, and duration or time variations is measured in seconds or minutes.

Amplitude

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1 presents the subjective effect of changes in sound pressure levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound.

Table 1 Noise Perceptibility

Change in dB	Noise Level
± 3 dB	Barely perceptible increase
± 5 dB	Readily perceptible increase
± 10 dB	Twice or half as loud
± 20 dB	Four times or one-quarter as loud

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Frequency

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but are “felt” more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The A-weighted noise level has been found to correlate well with people’s judgments of the “noisiness” of different sounds and has been used for many years as a measure of community and industrial noise. Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

Duration

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2 , L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These “n” values are typically used to demonstrate compliance for stationary noise sources with many cities’ noise ordinances. Other values typically noted during a noise survey are the L_{min} and L_{max} . These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment (or “penalty”) of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00

PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or L_{dn} metrics are commonly applied to the assessment of roadway and airport-related noise sources.

Sound Propagation

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as “spreading loss.” For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective (“hard site”) surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by an additional 1.5 dB for each doubling of distance.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, though generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 2 shows typical noise levels from familiar sources.

Table 2 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. As with noise, vibration can be described by both its amplitude and frequency. Vibration displacement is the distance that a point on a surface moves away from its original static position; velocity is the instantaneous speed that a point on a surface moves; and acceleration is the rate of change of the speed. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the

square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage and RMS is typically more suitable for evaluating human response.

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. Table 3 displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

Table 3 Human Reaction to Typical Vibration Levels

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of “architectural” (i.e. not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to “architectural” damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage

Source: California Department of Transportation (Caltrans). 2020, April. *Transportation and Construction Vibration Guidance Manual*. Prepared by ICF International.

P R E L I M I N A R Y L A N D U S E C O M P A T I B I L I T Y N O I S E A N A L Y S I S

MEMORANDUM

DATE: October 16, 2024

To: Kumail Raza, EPD Solutions, Inc.

FROM: J.T. Stephens, Executive Vice President
Moe Abushanab, Noise Engineer
Dana Kwan, Noise & Vibration Analyst

SUBJECT: Preliminary Land Use Compatibility Noise Analysis Memorandum for the proposed 5600 Beach Boulevard Residential Development Project, Buena Park, California

INTRODUCTION AND PROJECT DESCRIPTION

This Land Use Compatibility Noise Analysis Memorandum has been prepared to evaluate the potential impacts associated with the proposed 5600 Beach Boulevard Residential Development Project (project) in Buena Park, California. This memorandum is intended to satisfy the City of Buena Park's (City) land use compatibility of the proposed project through compliance with exterior and interior noise standards for residential type uses. Future noise level impacts are based on the noise measurement data gathered in the vicinity of the project site (from October 9, 2024, to October 10, 2024).

Location and Description

The project site is a 13.75-acre project site located at 5600 Beach Boulevard, Buena Park, California, at the intersection of Beach Boulevard and Sam Way. The project proposes to construct 257 residential multi-family units. Construction of the residences would include related site improvements such as driveways, curbs, parking, and open space. Figures 1 and 2 (all figures provided in Attachment B) show the project location and the site plan, respectively.

CHARACTERISTICS OF SOUND

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

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a wave resulting in the tone's range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment and is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

Measurement of Sound

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

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

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

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

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

noise level (i.e., half the time the noise level exceeds this level, and half the time it is less than this level). The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Physiological Effects of Noise

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

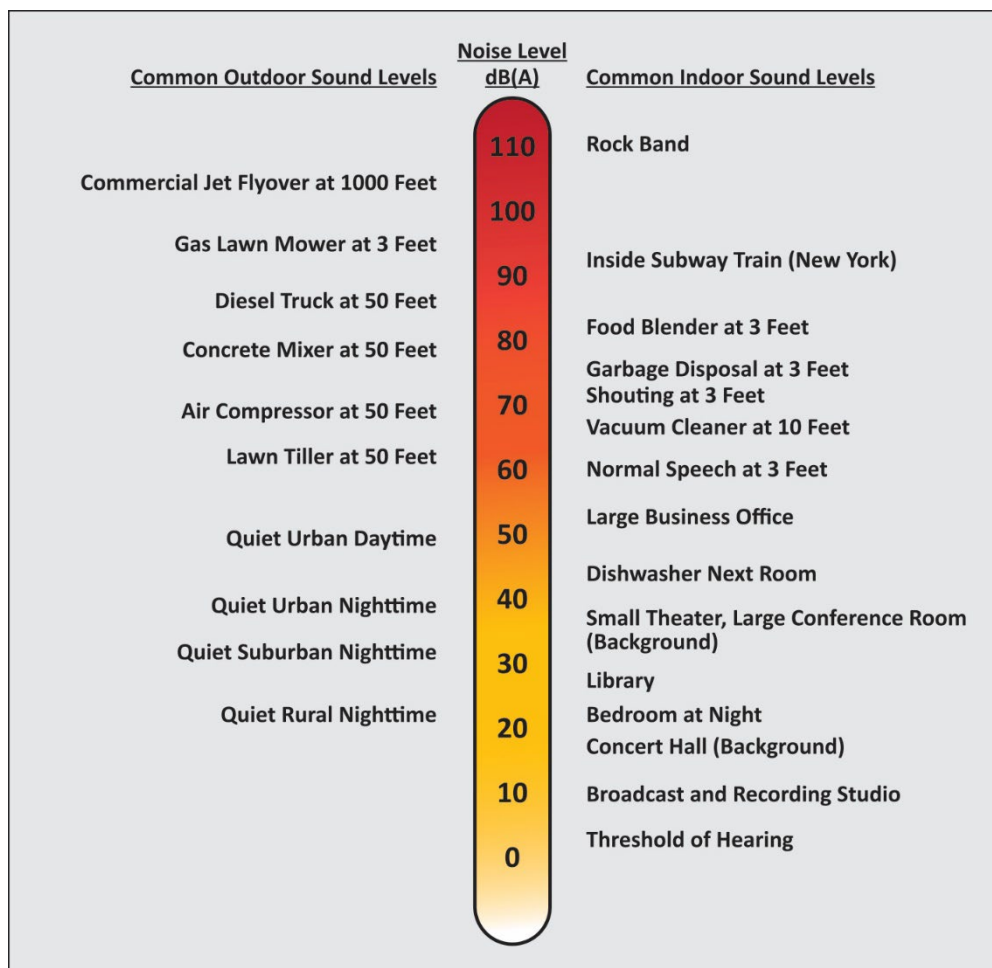
Table A lists full definitions of acoustical terms as defined in the Caltrans *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (Caltrans 2013) and Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment Manual* (2018) (FTA Manual), and Table B shows common sound levels and their sources.

Table A: Definitions of Acoustical Terms

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

Source: Caltrans *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (Caltrans 2013), Federal Transit Administration's (FTA) *Transit Noise and Vibration Impact Assessment Manual* (2018).

Table B: Common Sound Levels and Noise Sources



Source: LSA (2016).

APPLICABLE NOISE STANDARDS

The following information provides standards to which potential noise impacts will be compared. Where exceedances have been identified, impacts are described, and regulatory compliance measures are recommended.

City of Buena Park General Plan

Section 8.4: Noise Standards and Land Use Compatibility

The State of California Office of Planning and Research (OPR) Noise Element Guidelines include recommended interior and exterior level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The OPR Guidelines describe the compatibility of various land uses with a range of environmental noise levels in terms of dBA CNEL (Community Noise Equivalent Level).

A noise environment of up to 60 dBA CNEL is considered to be “normally acceptable” for residential uses. The State indicates that locating residential units, parks, and institutions (such as churches, schools, libraries, and hospitals) in areas where exterior ambient noise levels exceed 65 dBA CNEL is undesirable. The OPR recommendations also note that, under certain conditions, more restrictive standards than the maximum levels cited may be appropriate. As an example, the standards for quiet suburban and rural communities may be reduced by 5 to 10 dB to reflect their lower existing outdoor noise levels in comparison with urban environments.

In addition, Title 25, Section 1092 of the California Code of Regulations, sets forth requirements for the insulation of multiple-family residential dwelling units from excessive and potentially harmful noise. Whenever multiple-family residential dwelling units are proposed in areas with excessive noise exposure, the developer must incorporate construction features into the building’s design that reduce interior noise levels to 45 dBA CNEL.

Principle: Land Use and Noise Considerations

Land use planning decisions can result in potential noise impacts. The City of Buena Park recognizes the need for careful consideration of noise affects when considering land use decisions.

Goal N-3 Consideration of noise affects in the land use planning process.

Policy N-3.1: Fully integrate noise considerations into land use planning decisions to prevent new noise/land use conflicts.

Policy N-3.3: Adhere to the City’s Municipal Code Standards and planning guidelines that include noise control for the interior space of new residential developments within noise impacted areas (noise control practices include installing thick glass windows, restricting the hours of construction, double glazing, façade treatment, installing and maintaining mufflers, erecting noise barriers, etc.).

Policy N-3.5: Encourage proper site planning and architecture to reduce noise impacts.

Policy N-3.6: Discourage the development of sensitive uses in areas in excess of 65 dBA CNEL without appropriate mitigation.

Policy N-3.7: Require all residential units be attenuated to comply with the City’s Noise Ordinance.

Policy N-3.12: Orient mixed-use residential units, where possible, away from major noise sources.

Policy N-3.13: Locate balconies and operable windows of residential units in mixed-use projects away from the primary street and other major noise sources, where possible, or provide appropriate mitigation.

Policy N-3.14: Conform to the noise attenuation standards set forth in the Airport Environs Land Use Plan (AELUP) for residential, commercial, and industrial development, within the

Orange County Airport Land Use Commissions planning area boundaries for the Fullerton Municipal Airport and Los Alamitos Joint Forces Training Base.

Policy N-3.15: Continue to address community concerns about entertainment- or tourist-related uses, trains, or other uses that generate excessive noise adjacent to noise-sensitive uses.

Goal N-6 Noise levels created by the Union Pacific, Southern Pacific, Metrolink, and any other future rail systems located in close proximity to residential and other noise-sensitive land uses will be minimized or reduced.

Policy N-6.1: Work with rail operators to ensure noise impacts are considered and mitigated through proper design, siting, and construction.

Policy N-6.3: Encourage noise attenuation measures be incorporated into all new development, renovations, and remodels of residential, health care facilities, schools, libraries, senior facilities, and churches in close proximity to existing or known planned rail lines.

City of Buena Park Municipal Code

Section 19.344.010 (A), Residential Acoustical Design, of the City's Municipal Code states the following:

1. For all dwelling and group quarters, the development shall be designed to achieve:
 - a. Within each main building, a community noise equivalent level (CNEL) not exceeding forty-five decibels;
 - b. In outdoor areas, a community noise equivalent level (CNEL) not exceeding sixty-five decibels, except that where it is not reasonably possible to achieve this objective, the development shall be designed to provide the lowest noise level reasonably possible within private open areas and/or common usable open areas of at least one hundred square feet per unit, with access to such area available to the residents of each unit.
2. Acoustical design and analysis shall be based upon the projected noise contours as shown in the noise element of the General Plan. For all new residential developments, an acoustical analysis shall be submitted to the City as follows:
 - a. For any residential development within a sixty decibel CNEL contour, an analysis by a professional architect, engineer, or building designer shall demonstrate that the required noise levels will be achieved.
 - b. For any residential development within a sixty-five-decibels CNEL contour, or within either the moderate noise impact area or the significant noise impact area of the Fullerton Municipal Airport as shown in the noise element of the Buena Park General Plan, an analysis by a professional mechanical or acoustical engineer shall demonstrate that the required noise levels will be achieved. Prior to issuing a certificate of occupancy,

the Building Official may require tests by a qualified acoustical technician to confirm that the noise reduction achieved is sufficient to meet the requirements of this section.

Therefore, for the purposes of this project, an interior noise level of up to 45 dBA CNEL and an exterior noise level of up to 60 dBA CNEL at noise sensitive outdoor spaces must be achieved to meet the City's noise standards.

OVERVIEW OF THE EXISTING NOISE ENVIRONMENT

The primary existing noise sources in the project area are train pass-bys and freight train idling, vehicle traffic on Beach Boulevard, and truck loading and unloading activities from the loading bays at the existing site.

To assess the existing noise conditions in the area, noise measurements were conducted at the project site. Three long-term, 24-hour, measurements were taken from October 8, 2024, to October 9, 2024, in the vicinity of the project site. The locations of the noise measurements are shown on Figure 3, and Table C summarizes the results. Noise measurement data are provided in Attachment C of this analysis.

Table C: Existing Noise Level Measurements

Location Number	Location Description	Noise Levels (dBA L_{eq})			Average Daily Noise Levels (dBA CNEL)	Primary Noise Sources
		Daytime ¹	Evening ²	Nighttime ³		
LT-1	5600 Beach Boulevard, near the northwest corner of the project site. Approximately 68 feet from the nearest rail and approximately 95 feet from the Beach Boulevard centerline.	68.3 – 71.7	69.1 – 71.5	65.7 – 72.9	76.0	Traffic on Beach Boulevard, train noise (passenger and freight trains), and occasional parking lot noise from the existing operations on the project site.
LT-2	5600 Beach Boulevard, northeast of the loading bays of the existing project site. Approximately 26 feet from the nearest rail and approximately 975 feet east of the Beach Boulevard centerline.	64.6 – 72.9	66.1 – 74.0	58.2 – 70.4	74.0	Train noise (passenger and freight trains) and truck loading and unloading activities from the loading bays at the existing site.
LT-3	5600 Beach Boulevard,. Approximately 90 feet west of the Beach Boulevard centerline and 20 feet south of the sidewalk. Approximately 645 feet directly south of the nearest rail.	70.6 – 73.2	69.7 – 70.7	63.0 – 70.8	75.1	Traffic on Beach Boulevard and faint train noise.

Source: Compiled by LSA (October 2024).

¹ Daytime Noise Levels = noise levels during the hours of 7:00 a.m. to 7:00 p.m.

² Evening Noise Levels = noise levels during the hours of 7:00 p.m. to 10:00 p.m.

³ Nighttime Noise Levels = noise levels during the hours of 10:00 p.m. to 7:00 a.m.

dBA = A-weighted decibels L_{eq} = equivalent continuous sound level

ft = foot/feet LT = long-term

CNEL = Community Noise Equivalent Level

ON-SITE LAND USE COMPATIBILITY ANALYSIS

The proposed project is located adjacent to an existing railroad line and major roadway. For this reason, this analysis relies on the existing measured noise levels to provide the most accurate description of the noise environment related to noise impacts.

As described in the City's Municipal Code, due to the multi-family nature of the proposed project, this analysis only focuses on the common exterior areas and interior areas to preliminary identify the sound attenuation measures necessary to achieve the City's noise requirements.

On-Site Exterior Noise Assessment

Based on the monitoring results shown in Table F, noise levels are expected to reach 76 dBA CNEL at the western and northern façades of the proposed buildings on-site.

In addition to the existing noise sources, the project site would be adjacent to the future California High Speed Rail (CAHSR) operations. Based on modeling results using the *Burbank to Los Angeles Project Section Final EIR/EIS – Appendix 2-C: Operations and Service Plan Summary* (California Rail Authority 2021) and *Los Angeles to Anaheim Project Section Supplemental Alternatives Analysis* (California Rail Authority 2023), the expected noise generated by CAHSR operations on site would be 63.4 dBA CNEL. Because ambient noise levels are more than 10 dBA above proposed CAHSR operations, there would be no increase in noise levels at the proposed residential uses.

An 8 ft wall along the eastern border of the project site is proposed and would reduce noise levels by approximately 6 dBA, resulting in an exterior noise level of 70 dBA CNEL along the northern portion of the project site. With additional reduction provided by the proposed buildings, the open spaces north of the proposed neighborhood entry would likely experience noise levels below 60 dBA CNEL. The easternmost open space area on the project site is likely to be exposed to noise levels above 60 dBA CNEL. It is recommended that a wall along the northeastern edge of the area be constructed to reduce noise levels to the extent feasible or modify the site plan such that proposed buildings would provide additional shielding to the open space area. Currently, there are no walls proposed along the western portion of the project site near Beach Boulevard. Lastly, all other lots will experience lower exterior noise levels due to distance attenuation and shielding from the proposed residential units.

On-Site Interior Noise Impacts

In addition to the exterior noise level standards, the project must demonstrate compliance with the interior noise standard of 45 dBA CNEL. Based on the analysis above, first floor façades not shielded by proposed walls and second floor façades of the proposed residential units along the western and northern property lines would be approximately 76 dBA CNEL.

Based on the Environmental Protection Agency's *Protective Noise Levels* (1974), with windows and doors open, interior noise levels would be 64 dBA (i.e., 76 dBA – 12 dBA = 64 dBA), which would exceed the 45 dBA CNEL interior noise standard.

Based on a standard exterior wall type, the following presents a typical assembly:

- 7/8-inch Stucco plaster
- One layer of 0.375-inch-thick plywood
- 2-inch x 6-inch wood stud wall channels spaced at 16 inches and a minimum of R-21 fiberglass insulation
- One layer of 5/8-inch-thick Type X gypsum board

The proposed project includes an HVAC system that would allow windows to remain closed. In order to achieve the required noise reduction, based on reference information from transmission loss test reports for Greenworld Windows (Greenworld Windows 2018), standard construction listed above with upgraded window in the range of STC 36 would yield an estimated interior noise level of 49 –50 dBA CNEL. Because this level exceeds the City's requirement of 45 dBA CNEL, additional measures would be needed. The following are preliminary recommendations to aide in the achievement of required interior noise levels could be considered during final design:

- Ensure that no noise sensitive rooms (i.e., bedrooms, living rooms, dining rooms) are along the western and norther façade of the lots closest to Beach Boulevard and the train tracks.
- Upgraded building construction is likely necessary for the lots near Beach Boulevard and the existing train tracks. This could include the use of resilient channels, rubber isolation clips, upgraded gypsum board, or some combo thereof.
- Windows should be avoided where possible with a line-of-site to the existing train tracks.

Once final architectural plans are available, a review of the floor plans along with wall details and windows chosen should be completed and summarize in a final acoustical memorandum.

Attachments: A: References
 B: Figure 1—Project Location
 Figure 2—Site Plan
 Figure 3—Noise Monitoring Locations
 C: Noise Measurement Data

ATTACHMENT A

REFERENCES

California Rail Authority. 2021. *Burbank to Los Angeles Project Section Final EIR/EIS – Appendix 2-C: Operations and Service Plan Summary*. September

_____. 2023. *Los Angeles to Anaheim Project Section Supplemental Alternatives Analysis Report – Final*. November.

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Greenworld Windows. 2018. *Various Acoustical Performance Test Reports – Greenworld Windows*.

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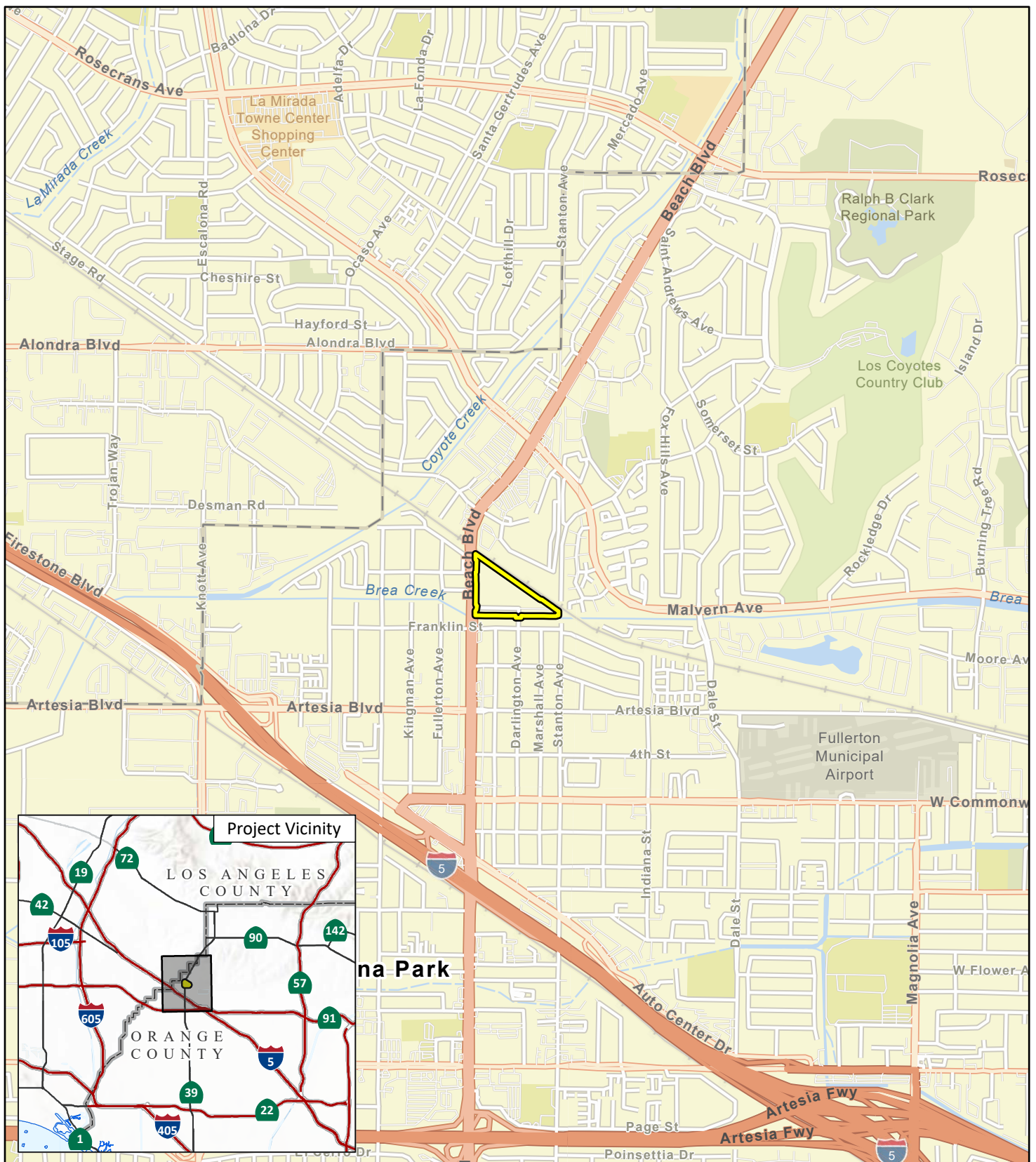
_____. 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety*. Office of Noise Abatement and Control.

ATTACHMENT B**FIGURES**

Figure 1: Project Location

Figure 2 : Site Plan

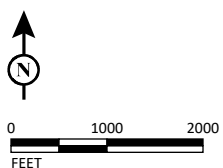
Figure 3 : Noise Monitoring Locations



LSA

 Project Location

FIGURE 1



SOURCE: Esri Street Map 2024

I:\E\ESL2201.94\GIS\Pro\5600 Beach Boulevard Residential Development\5600 Beach Boulevard Residential Development.aprx (10/15/2024)



FIGURE 2



LSA

LEGEND



Project Site Boundary



Long-term Noise Monitoring Location



0 125 250
FEET

SOURCE: Google Earth 2024

I:\E\ESL2201.94\G\Noise_Locs.ai (10/15/2024)

FIGURE 3

5600 Beach Boulevard Residential Development
Noise Monitoring Locations

ATTACHMENT C
NOISE MEASUREMENT DATA

Noise Measurement Survey – 24 HR

Project Number: ESL2201.94
Project Name: 5600 Beach Blvd Residential

Test Personnel: Corey Knips
Equipment: LD 706RC Spark (sn: 17206)

Site Number: LT-1 Start Date: 10/8/2024 Time: From 9:00 a.m. To 9:00 a.m.

Site Location: 5600 Beach Boulevard, near the northwest corner of the project site, on the fence.
Approximately 68 feet from the nearest rail, and approximately 95 feet from the Beach
Boulevard centerline.

Primary Noise Sources: Traffic on Beach Boulevard, train noise (passenger and freight trains
passing by as well as freight trains idling on the siding [middle track]), and occasional parking
lot noise from the existing operations on the project site.

Comments: The middle track is a siding that was observed having freight trains idling the entire
time LSA was on site setting up and picking up the noise monitoring equipment. The engine was
parked approximately 300-500 feet northwest of this location. It is assumed that freight trains
often idle here to let faster passenger and freight trains pass by throughout the day.

Photo:



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

Start Time	Date	Noise Level (dBA)		
		L _{eq}	L _{max}	L _{min}
9:00 AM	10/8/2024	70.7	87.1	58.7
10:00 AM	10/8/2024	71.1	87.0	55.3
11:00 AM	10/8/2024	69.7	87.7	55.5
12:00 PM	10/8/2024	69.7	81.5	56.7
1:00 PM	10/8/2024	70.7	89.5	56.9
2:00 PM	10/8/2024	70.5	84.2	56.3
3:00 PM	10/8/2024	70.9	92.4	56.3
4:00 PM	10/8/2024	69.3	87.5	56.9
5:00 PM	10/8/2024	68.3	81.3	56.4
6:00 PM	10/8/2024	70.1	83.7	56.7
7:00 PM	10/8/2024	70.7	82.9	58.2
8:00 PM	10/8/2024	71.5	94.8	58.4
9:00 PM	10/8/2024	69.1	86.9	58.6
10:00 PM	10/8/2024	68.4	85.9	58.3
11:00 PM	10/8/2024	72.9	87.4	60.6
12:00 AM	10/9/2024	66.7	90.0	57.9
1:00 AM	10/9/2024	65.7	79.6	58.9
2:00 AM	10/9/2024	66.1	78.4	59.4
3:00 AM	10/9/2024	66.9	82.0	56.2
4:00 AM	10/9/2024	66.9	77.7	57.7
5:00 AM	10/9/2024	70.5	94.9	58.2
6:00 AM	10/9/2024	70.8	82.0	61.0
7:00 AM	10/9/2024	71.7	95.0	60.9
8:00 AM	10/9/2024	71.2	86.1	61.1

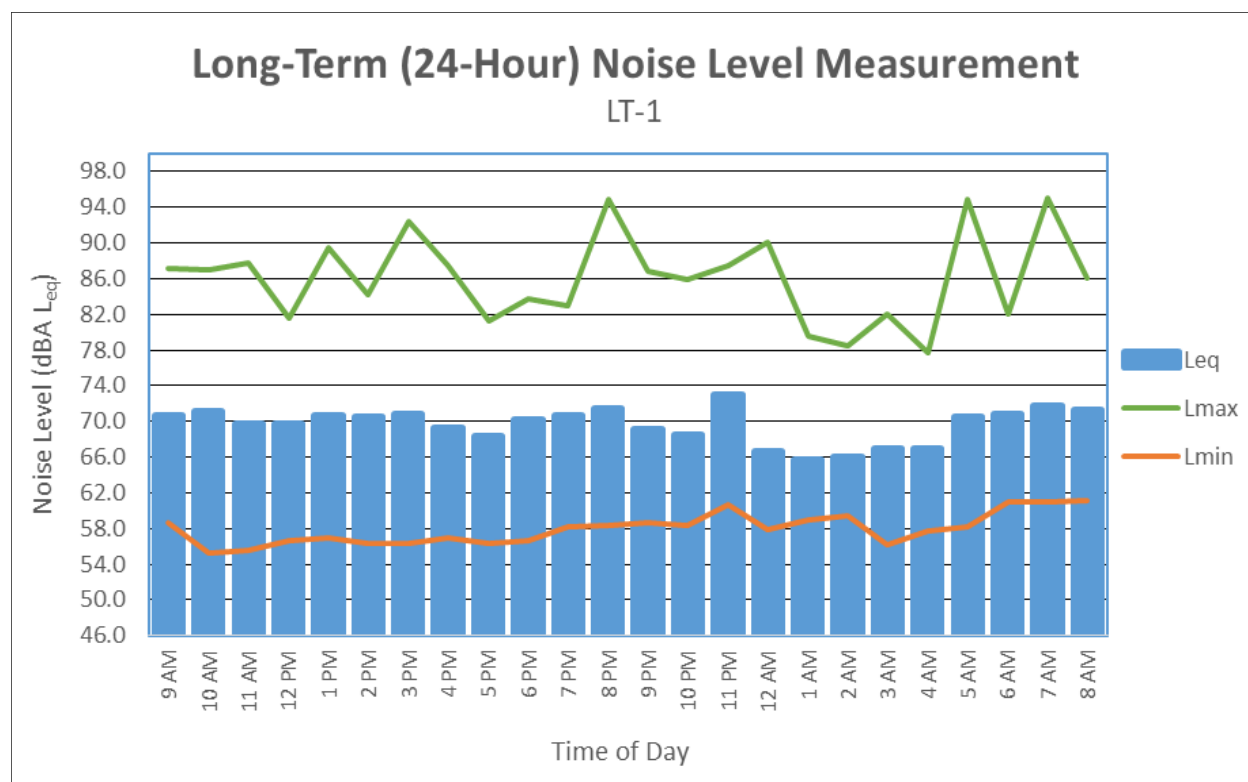
Source: Compiled by LSA Associates, Inc. (2024).

dBA = A-weighted decibel

L_{eq} = equivalent continuous sound level

L_{max} = maximum instantaneous noise level

L_{min} = minimum measured sound level



Noise Measurement Survey – 24 HR

Project Number: ESL2201.94
Project Name: 5600 Beach Blvd Residential

Test Personnel: Corey Knips
Equipment: LD 705+ Spark (sn: 40632)

Site Number: LT-2 Start Date: 10/8/2024 Time: From 9:00 a.m. To 9:00 a.m.

Site Location: 5600 Beach Boulevard, near the lightpole to the northeast of the loading bays of the existing project site, on the fence. Approximately 26 feet from the nearest rail, and approximately 975 feet east of the Beach Boulevard centerline.

Primary Noise Sources: Train noise (passenger and freight trains passing by as well as freight trains idling on the siding [middle track]) and truck loading and unloading activities from the loading bays at the existing site.

Comments: Engines of the idling trains were approximately 1,350 to 1,550 feet to the northwest of this location. See LT-1 for more information on the trains idling on the siding.

Photo:



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

Start Time	Date	Noise Level (dBA)		
		L _{eq}	L _{max}	L _{min}
9:00 AM	10/8/2024	66.3	90.5	57.0
10:00 AM	10/8/2024	70.3	91.1	57.5
11:00 AM	10/8/2024	66.3	87.7	55.6
12:00 PM	10/8/2024	68.1	88.0	56.5
1:00 PM	10/8/2024	72.2	90.9	57.1
2:00 PM	10/8/2024	71.3	90.8	54.8
3:00 PM	10/8/2024	72.2	93.4	56.2
4:00 PM	10/8/2024	65.8	92.0	55.1
5:00 PM	10/8/2024	64.6	87.3	56.7
6:00 PM	10/8/2024	66.4	92.0	57.3
7:00 PM	10/8/2024	69.7	89.7	57.3
8:00 PM	10/8/2024	74.0	96.6	55.7
9:00 PM	10/8/2024	66.1	84.7	54.0
10:00 PM	10/8/2024	68.6	97.7	52.8
11:00 PM	10/8/2024	66.0	88.1	52.9
12:00 AM	10/9/2024	58.2	67.5	52.3
1:00 AM	10/9/2024	61.3	80.5	51.2
2:00 AM	10/9/2024	62.5	83.0	53.2
3:00 AM	10/9/2024	67.8	91.1	50.4
4:00 AM	10/9/2024	58.9	75.8	51.5
5:00 AM	10/9/2024	70.4	93.9	51.6
6:00 AM	10/9/2024	65.4	84.9	53.6
7:00 AM	10/9/2024	72.9	96.7	52.9
8:00 AM	10/9/2024	70.6	93.9	51.0

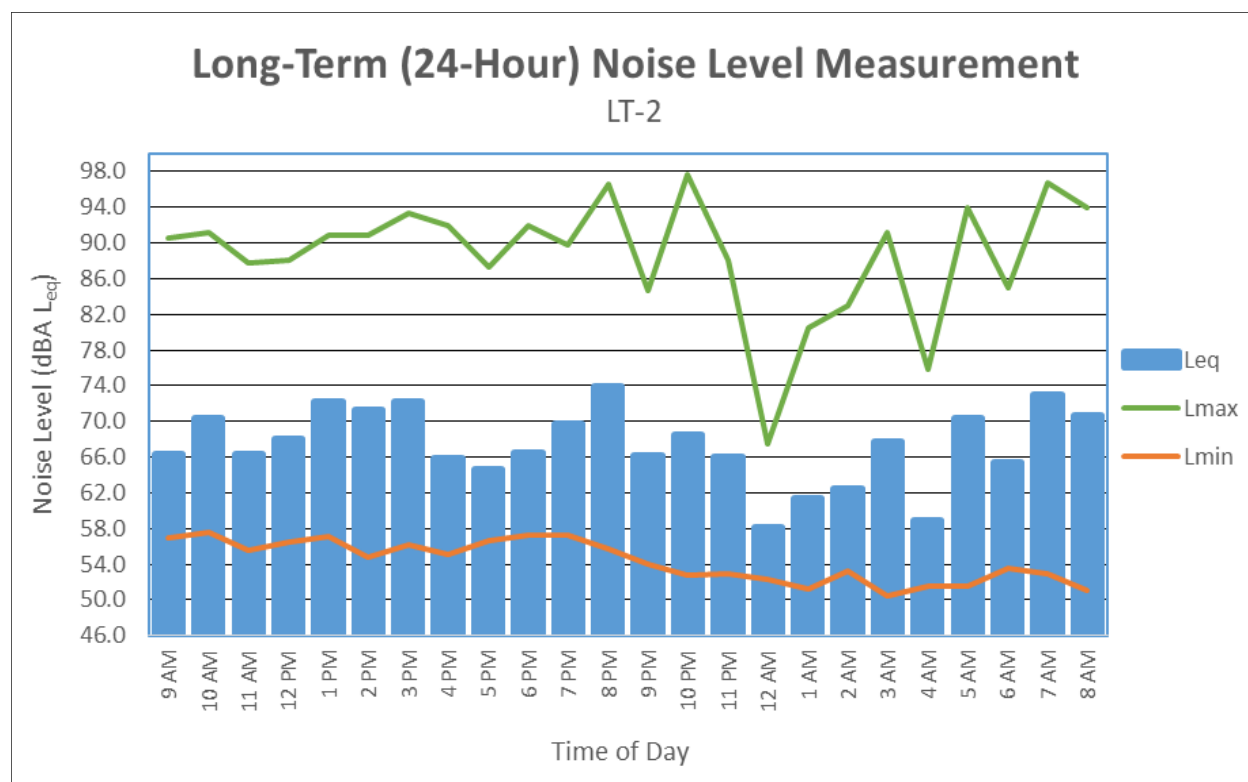
Source: Compiled by LSA Associates, Inc. (2024).

dBA = A-weighted decibel

L_{eq} = equivalent continuous sound level

L_{max} = maximum instantaneous noise level

L_{min} = minimum measured sound level



Noise Measurement Survey – 24 HR

Project Number: ESL2201.94
Project Name: 5600 Beach Blvd Residential

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

Site Number: LT-3 Start Date: 10/8/2024 Time: From 9:00 a.m. To 9:00 a.m.

Site Location: 5600 Beach Boulevard, west of the southwest building and south of the sidewalk that runs from Beach Boulevard to the building, in a tree. Approximately 90 feet west of the Beach Boulevard centerline and 20 feet south of the sidewalk. Approximately 645 feet directly south of the nearest rail (not perpendicular distance since the existing buildings are shielding the noise meter from that direction).

Primary Noise Sources: Traffic on Beach Boulevard and faint train noise.

Comments: _____

Photo:



Long-Term (24-Hour) Noise Level Measurement Results at LT-3

Start Time	Date	Noise Level (dBA)		
		L _{eq}	L _{max}	L _{min}
9:00 AM	10/8/2024	71.7	93.1	56.3
10:00 AM	10/8/2024	70.8	84.5	54.5
11:00 AM	10/8/2024	70.6	81.0	56.4
12:00 PM	10/8/2024	70.6	83.1	53.4
1:00 PM	10/8/2024	71.1	89.6	54.6
2:00 PM	10/8/2024	71.5	93.6	55.4
3:00 PM	10/8/2024	71.8	93.8	55.2
4:00 PM	10/8/2024	71.1	93.6	54.8
5:00 PM	10/8/2024	70.6	93.6	54.4
6:00 PM	10/8/2024	70.9	81.8	53.9
7:00 PM	10/8/2024	70.4	85.5	51.9
8:00 PM	10/8/2024	70.7	96.2	50.0
9:00 PM	10/8/2024	69.7	87.0	48.2
10:00 PM	10/8/2024	68.3	83.4	49.0
11:00 PM	10/8/2024	67.1	82.7	49.7
12:00 AM	10/9/2024	67.1	88.6	47.1
1:00 AM	10/9/2024	63.6	80.6	48.2
2:00 AM	10/9/2024	63.0	79.8	46.3
3:00 AM	10/9/2024	64.9	87.3	44.9
4:00 AM	10/9/2024	67.4	79.5	46.0
5:00 AM	10/9/2024	69.4	85.3	48.2
6:00 AM	10/9/2024	70.8	82.2	51.2
7:00 AM	10/9/2024	71.2	89.6	54.7
8:00 AM	10/9/2024	73.2	86.2	54.5

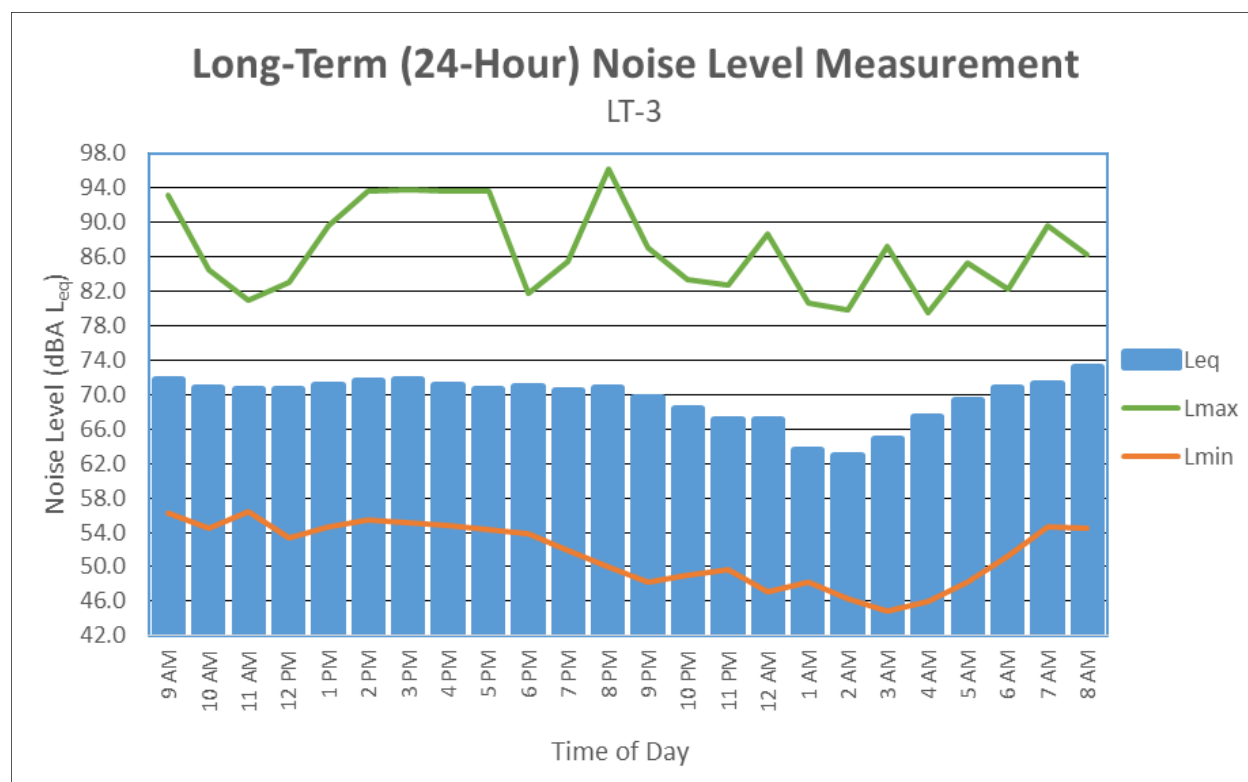
Source: Compiled by LSA Associates, Inc. (2024).

dBA = A-weighted decibel

L_{eq} = equivalent continuous sound level

L_{max} = maximum instantaneous noise level

L_{min} = minimum measured sound level



N O I S E M O N I T O R I N G D A T A

Measurement Report

Report Summary

Meter's File Name	LxT_Data.147.s	Computer's File Name	LxT_0005424-20251021 111925-LxT_Data.147.ldbin		
Meter	LxT1 0005424	Firmware	2.404		
User	AC	Location	ST-1		
Job Description	CBP-6.0				
Note					
Start Time	2025-10-21 11:19:25	Duration	0:15:00.0		
End Time	2025-10-21 11:34:25	Run Time	0:15:00.0	Pause Time	0:00:00.0
Pre-Calibration	2025-10-21 11:18:07	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA _{eq}	61.6 dB		
LAE	91.1 dB	SEA	--- dB
EA	144.5 µPa²h		
EA8	4.6 mPa²h		
EA40	23.1 mPa²h		
LA _{Speak}	87.8 dB		2025-10-21 11:27:56
LA _{Smax}	70.3 dB		2025-10-21 11:26:27
LA _{Smin}	59.8 dB		2025-10-21 11:29:55
LA _{eq}	61.6 dB		
LC _{eq}	69.4 dB	LC _{eq} - LA _{eq}	7.8 dB
LA _{Ieq}	62.7 dB	LA _{Ieq} - LA _{eq}	1.1 dB

Exceedances

Count Duration

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

Community Noise

LDN	LDay	LNight	
--- dB	--- dB	0.0 dB	
LDEN	LDay	LEve	LNight
--- dB	--- dB	--- dB	--- dB

Any Data

A			C		Z	
Level	Time Stamp		Level	Time Stamp	Level	Time Stamp
L _{eq}	61.6 dB		--- dB		--- dB	
L _{S(max)}	70.3 dB	2025-10-21 11:26:27	--- dB	None	--- dB	None
L _{S(min)}	59.8 dB	2025-10-21 11:29:55	--- dB	None	--- dB	None
L _{Peak(max)}	87.8 dB	2025-10-21 11:27:56	--- dB	None	--- dB	None

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 2.0	66.4 dB
LAS 8.0	62.1 dB
LAS 25.0	61.4 dB
LAS 50.0	61.1 dB
LAS 90.0	60.5 dB
LAS 99.0	60.1 dB

Project Name: _____

Date: 10/21/25Project Number: CBP - 6.0Monitoring Personnel: ACMonitoring Site #: ST #1Time Start: 11:14 End: 11:34Site Location/Address: At the eastern portion of Dr Sam Way at the edge of the delivery drivewayPrimary Noise Source: Semi - Refrigerator, small airplane flying-overhead

Measurement Results	
Percentiles	dBA
Leq	<u>61.6</u>
Lmax	<u>70.3</u>
Lmin	<u>59.8</u>
L2	<u>66.4</u>
L8	<u>62.1</u>
L25	<u>61.4</u>
L50	<u>61.1</u>
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA
<u>7:00</u>	<u>Small plane Over-head</u>	<u>73.4</u>
<u>9:48</u>	<u>loading Trash pick-up from nearby property</u>	<u>64</u>
<u>12:12</u>	<u>Dumpster pick-up; 85m north</u>	<u>65.5</u>

Data File: 147 ☒ Photos: _____Comments (sound walls, height, etc.): 41.3m from residential wall standing at 65-71in CMU wall

Max Wind Velocity (knots/hr)	Average Wind Velocity (knots/hr)	Temperature (F)	Relative Humidity (%)
	<u>2mph</u>	<u>74°</u>	<u>51%</u>

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD

Calibration

Note, for ST measurements, calibration is only necessary before and after each monitoring period per day per meter - not before and after every ST measurement in that day. So only fill out calibration info on one ST sheet unless using two different meters for ST's.

LD CAL 200 ☐ SN-14280 ☒ SN-14279

1 kHz Tone Reference Level: ☐ 94 dB ☐ 114 dB

Calibration Offset Prior: 70 dB

Offset After: _____

Caltone File Before: File # _____

Caltone File Before: File # _____

Additional Notes:

Measurement Report

Report Summary

Meter's File Name	LxT_Data.151.s	Computer's File Name	LxT_0005424-20251021 121031-LxT_Data.151.ldbin		
Meter	LxT1 0005424	Firmware	2.404		
User	AC	Location	ST-2		
Job Description	CBP-6.0				
Note					
Start Time	2025-10-21 12:10:31	Duration	0:15:00.0		
End Time	2025-10-21 12:25:31	Run Time	0:15:00.0	Pause Time	0:00:00.0
Pre-Calibration	2025-10-21 12:09:59	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA _{eq}	68.8 dB		
LAE	98.3 dB	SEA	--- dB
EA	758.6 µPa²h		
EA8	24.3 mPa²h		
EA40	121.4 mPa²h		
LA _{Speak}	94.2 dB		2025-10-21 12:10:42
LA _{Smax}	77.9 dB		2025-10-21 12:24:11
LA _{Smin}	60.1 dB		2025-10-21 12:21:21
LA _{eq}	68.8 dB		
LC _{eq}	79.5 dB	LC _{eq} - LA _{eq}	10.7 dB
LA _l _{eq}	69.5 dB	LA _l _{eq} - LA _{eq}	0.7 dB

Exceedances

Count Duration

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

Community Noise

LDN	LDay	LNight	
--- dB	--- dB	0.0 dB	
LDEN	LDay	LEve	LNight
--- dB	--- dB	--- dB	--- dB

Any Data

A		C		Z	
Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	68.8 dB	--- dB		--- dB	
L _{S(max)}	77.9 dB	--- dB	None	--- dB	None
L _{S(min)}	60.1 dB	--- dB	None	--- dB	None
L _{Peak(max)}	94.2 dB	--- dB	None	--- dB	None

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 2.0	73.2 dB
LAS 8.0	71.7 dB
LAS 25.0	70.1 dB
LAS 50.0	68.1 dB
LAS 90.0	63.3 dB
LAS 99.0	61.1 dB

Project Name: _____

Date: 10/21/25Project Number: CBP-6.0Monitoring Personnel: AOEMonitoring Site #: ST #2Time Start: 12:10 End: 12:25Site Location/Address: At the northwestern end of the Amway Nutrilite CenterPrimary Noise Source: Consistent vehicle traffic on Beach Boulevard; dust collector on ground level 52m South east

Measurement Results	
Percentiles	dBA
Leq	68.8
Lmax	77.4
Lmin	60.1
L2	73.2
L8	71.7
L25	70.1
L50	68.1
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA
0.35	Small plane overhead	74
6.30	Traffic w/ Duster noise	71
7.21	Traffic w/ semi-Trucks	74

Data File: 151 ☒ Photos: _____Comments (sound walls, height, etc.): Metal gates (6ft), 33m from Beach Boulevard Centerline; 58m from Rail Road Tracks; 22m from Building #11; 60m from elementary school across Beach Boulevard

Max Wind Velocity (knots/hr)	Average Wind Velocity (knots/hr)	Temperature (F)	Relative Humidity (%)
<u>12</u>	<u>2mph</u>	<u>74°</u>	<u>51%</u>

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD

Calibration

Note, for ST measurements, calibration is only necessary before and after each monitoring period per day per meter - not before and after every ST measurement in that day. So only fill out calibration info on one ST sheet unless using two different meters for ST's.

LD CAL 200 ☐ SN-14280 ☒ SN-14279

1 kHz Tone Reference Level: ☐ 94 dB ☐ 114 dB

Calibration Offset Prior: 0.23

Offset After: _____

Caltone File Before: File # _____

Caltone File Before: File # _____

Additional Notes:

Measurement Report

Report Summary

Meter's File Name	LxT_Data.153.s	Computer's File Name	LxT_0005424-20251021 133255-LxT_Data.153.ldbin		
Meter	LxT1 0005424	Firmware	2.404		
User	AC	Location	ST-3		
Job Description	CBP-6.0				
Note					
Start Time	2025-10-21 13:32:55	Duration	0:15:00.0		
End Time	2025-10-21 13:47:55	Run Time	0:15:00.0	Pause Time	0:00:00.0
Pre-Calibration	2025-10-21 13:08:06	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA _{eq}	57.1 dB		
LAE	86.6 dB	SEA	--- dB
EA	51.3 µPa²h		
EA8	1.6 mPa²h		
EA40	8.2 mPa²h		
LA _{Speak}	95.0 dB		2025-10-21 13:34:03
LA _{Smax}	78.8 dB		2025-10-21 13:34:04
LA _{Smin}	47.4 dB		2025-10-21 13:33:29
LA _{eq}	57.1 dB		
LC _{eq}	68.7 dB	LC _{eq} - LA _{eq}	11.6 dB
LA _{Ieq}	59.5 dB	LA _{Ieq} - LA _{eq}	2.4 dB

Exceedances

Count Duration

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

Community Noise

LDN	LDay	LNight	
--- dB	--- dB	0.0 dB	
LDEN	LDay	LEve	LNight
--- dB	--- dB	--- dB	--- dB

Any Data

A			C		Z	
Level	Time Stamp		Level	Time Stamp	Level	Time Stamp
L _{eq}	57.1 dB		--- dB		--- dB	
L _{S(max)}	78.8 dB	2025-10-21 13:34:04	--- dB	None	--- dB	None
L _{S(min)}	47.4 dB	2025-10-21 13:33:29	--- dB	None	--- dB	None
L _{Peak(max)}	95.0 dB	2025-10-21 13:34:03	--- dB	None	--- dB	None

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 2.0	61.8 dB
LAS 8.0	57.6 dB
LAS 25.0	54.2 dB
LAS 50.0	52.6 dB
LAS 90.0	49.4 dB
LAS 99.0	48.0 dB

Project Name: _____

Date: 10/21/25Project Number: CBP-60Monitoring Personnel: ABCMonitoring Site #: ST # 3Time Start: 1:32 End: 1:47Site Location/Address: at the northern portion of 5730 Beach BoulevardPrimary Noise Source: Roadway noise on Franklin Street; Beach Boulevard.

Measurement Results	
Percentiles	dBA
Leq	<u>57.1</u>
Lmax	<u>78.8</u>
Lmin	<u>47.4</u>
L2	<u>61.8</u>
L8	<u>57.6</u>
L25	<u>54.2</u>
L50	<u>52.6</u>
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA

Data File: 153 ☒ Photos: _____Comments (sound walls, height, etc.): Approx 7 ft wall along river

Max Wind Velocity (knots/hr)	Average Wind Velocity (knots/hr)	Temperature (F)	Relative Humidity (%)
	<u>Zero</u>	<u>74°</u>	<u>51%</u>

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD

Measurement Report

Report Summary

Meter's File Name	LxT_Data.152.s	Computer's File Name	LxT_0005424-20251021 131005-LxT_Data.152.ldbin				
Meter	LxT1 0005424	Firmware	2.404				
User	AC	Location	ST-4				
Job Description	CBP-6.0						
Note							
Start Time	2025-10-21 13:10:05	Duration	0:15:00.0				
End Time	2025-10-21 13:25:05	Run Time	0:15:00.0	Pause Time	0:00:00.0		
Pre-Calibration	2025-10-21 13:08:06	Post-Calibration	None	Calibration Deviation	---		

Results

Overall Metrics

LA _{eq}	62.1 dB		
LAE	91.6 dB	SEA	--- dB
EA	162.2 μ Pa ² h		
EA8	5.2 mPa ² h		
EA40	25.9 mPa ² h		
LA _{Speak}	99.3 dB	2025-10-21 13:21:09	
LA _{Smax}	81.3 dB	2025-10-21 13:21:09	
LA _{Smin}	44.5 dB	2025-10-21 13:11:51	
LA _{eq}	62.1 dB		
LC _{eq}	74.9 dB	LC _{eq} - LA _{eq}	12.8 dB
LA _l _{eq}	64.8 dB	LA _l _{eq} - LA _{eq}	2.7 dB

Exceedances

Count Duration

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

Community Noise

LDN	LDay	LNight		
--- dB	--- dB	0.0 dB		
LDEN	LDay	LEve	LNight	
--- dB	--- dB	--- dB	--- dB	

Any Data

A			C		Z	
Level	Time Stamp		Level	Time Stamp	Level	Time Stamp
L _{eq}	62.1 dB		--- dB		--- dB	
L _{S(max)}	81.3 dB	2025-10-21 13:21:09	--- dB	None	--- dB	None
L _{S(min)}	44.5 dB	2025-10-21 13:11:51	--- dB	None	--- dB	None
L _{Peak(max)}	99.3 dB	2025-10-21 13:21:09	--- dB	None	--- dB	None

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 2.0	72.4 dB
LAS 8.0	65.3 dB
LAS 25.0	56.2 dB
LAS 50.0	50.2 dB
LAS 90.0	45.8 dB
LAS 99.0	44.8 dB

Project Name: _____

Date: 10/21/25Project Number: CBP-6.0Monitoring Personnel: ACMonitoring Site #: ST#4Time Start: 1:10 End: 1:25Site Location/Address: At end of Cal-de-sac at Stanton Avenue; east of 7971 Franklin StreetPrimary Noise Source: Residential noises (Birds, cars, house work noise); distant small planes

Measurement Results	
Percentiles	dBA
Leq	<u>62.1</u>
Lmax	<u>81.3</u>
Lmin	<u>44.5</u>
L2	<u>72.4</u>
L8	<u>65.3</u>
L25	<u>56.2</u>
L50	<u>50.2</u>
Other	
SEL/CNEL	

Observed Noise Sources/Events		
Time	Noise Source Event	dBA
<u>1:20</u>	<u>Small Plane flying in distance</u>	<u>58</u>
<u>2:30</u>	<u>Small Plane flying overhead</u>	<u>58.6</u>
<u>3:18</u>	<u>Cars on Roadway</u>	<u>50</u>
<u>3:40</u>	<u>Pacific Surfliner</u>	<u>78.9</u>
<u>4:22</u>	<u>Electric saw construction tools</u>	<u>49</u>
<u>11:14</u>	<u>Pacific Surfliner + BNSF</u>	<u>77.8</u>

Data File: 152 ☒ Photos: _____Comments (sound walls, height, etc.): Residences have metal gates

Max Wind Velocity (knots/hr)	Average Wind Velocity (knots/hr)	Temperature (F)	Relative Humidity (%)
	<u>2 mph</u>	<u>74°</u>	<u>51%</u>

Traffic counts in both directions:

Roadway	# Lanes	Posted Speed	Autos	MD	HD

Calibration

Note, for ST measurements, calibration is only necessary before and after each monitoring period per day per meter - not before and after every ST measurement in that day. So only fill out calibration info on one ST sheet unless using two different meters for ST's.

LD CAL 200 ☐ SN-14280 ☒ SN-14279

1 kHz Tone Reference Level: ☐ 94 dB ☐ 114 dB

Calibration Offset Prior: -0.2016

Offset After: _____

Caltone File Before: File # _____

Caltone File Before: File # _____

Additional Notes:

C O N S T R U C T I O N M O D E L I N G R E S U L T S

CBP-06.0 - Construction Noise Modeling Attenuation Calculations

Phase	Levels in dBA Leq						
	RCNM Reference	Industrial	Multi-Family	School/Park	Single-Family	Single-Family	Multi-family
	Noise Level	Receptor to	Receptor to	Receptor to	Receptor to	Receptor to	Receptor to
	Distance in feet	North	North ¹	West	West ²	South	East ²
	50	375	540	290	300	150	325
P1 Demolition	84	66	58	69	65	74	65
P1 Demolition Debris Onsite Reprocessing	80	62	54	65	61	70	61
P1 Site Preparation	81	63	55	66	62	71	62
P2 Rough Grading	84	66	58	69	65	74	65
P3 Fine Grading	84	66	58	69	65	74	65
Distance in feet	50	140	380	180	250	115	380
P3 Utility Trenching	77	68	54	66	60	70	56
Distance in feet	50	175	435	195	235	775	1,330
P4.1 Building (Senior Affordable Apartments)	79	68	55	67	63	55	48
P4.1 Architectural Coating	80	69	56	68	64	56	49
Distance in feet	50	175	455	155	235	75	295
P4.2 Building (Townhomes and Duet Homes)	79	68	55	69	63	75	61
P4.2 Architectural Coating	77	66	53	67	61	73	59
Distance in feet	50	170	390	175	235	715	1,250
P4.1 Paving	80	69	57	69	64	57	49
Distance in feet	50	145	425	200	300	75	245
P4.2 Paving	80	71	56	68	61	76	63

Notes:

¹Intervening structures and topography provide -5 dBA shielding

offset

Attenuation calculated through Inverse Square Law: $L_p(R2) = L_p(R1) - 20\log(R2/R1)$

CBP-06.0 - Vibration Damage Attenuation Calculations

Levels, PPV (in/sec)							
	Vibration Reference Level	Industrial Receptor to North	Multi-Family Receptor to North	School/Park Receptor to West	Single-Family Receptor to West	Single-Family Receptor to South	Multi-family Receptor to East
<i>Distance in feet</i>	at 25 feet	<i>115</i>	<i>375</i>	<i>120</i>	<i>225</i>	<i>65</i>	<i>200</i>
Vibratory Roller	0.21	0.021	0.004	0.020	0.008	0.050	0.009
Clam shovel	0.202	0.020	0.003	0.019	0.007	0.048	0.009
Hoe Ram	0.089	0.009	0.002	0.008	0.003	0.021	0.004
Large Bulldozer	0.089	0.009	0.002	0.008	0.003	0.021	0.004
Caisson Drilling	0.089	0.009	0.002	0.008	0.003	0.021	0.004
Loaded Trucks	0.076	0.008	0.001	0.007	0.003	0.018	0.003
Jackhammer	0.035	0.004	0.001	0.003	0.001	0.008	0.002
Small Bulldozer	0.003	0.000	0.000	0.000	0.000	0.001	0.000

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/14/2026
Case Description: CBP-06.0 P1 Demolition

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Description	Impact Device	Usage (%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	50.0	0.0
Excavator	No	40		80.7	50.0	0.0
Concrete Saw	No	20		89.6	50.0	0.0

Results

Equipment	Noise Limits (dBA)									Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night			Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq		Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
Total	89.6	84.4	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/14/2026
Case Description: CBP-06.0 P1 Demolition Debris Onsite Reprocessing

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Description	Impact Device	Usage (%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Rock Crusher	No	50	83.0		50.0	0.0

Results

		Noise Limits (dBA)								Noise Limit Exceedance (dBA)					
		Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
		Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Equipment															
Rock Crusher		83.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	83.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/14/2026
Case Description: CBP-06.0 P1 Site Preparation

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Description	Impact Device	Usage (%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0

Results

Equipment	Noise Limits (dBA)									Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night			Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq		Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
Total	81.7	80.6	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/14/2026
Case Description: CBP-06.0 P2 Rough Grading

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Description	Impact Device	Usage (%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	50.0	0.0
Scraper	No	40		83.6	50.0	0.0
Grader	No	40	85.0		50.0	0.0

Results

Equipment		Noise Limits (dBA)								Noise Limit Exceedance (dBA)					
		Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
		Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper		83.6	79.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader		85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total		85.0	84.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/14/2026
Case Description: CBP-06.0 P3 Fine Grading

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Equipment		
				Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	50.0	0.0
Scraper	No	40		83.6	50.0	0.0
Grader	No	40	85.0		50.0	0.0

Results

Equipment	Noise Limits (dBA)									Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night			Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq		Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
Scraper	83.6	79.6	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	84.2	N/A	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/14/2026
Case Description: CBP-06.0 P3 Utility Trenching

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Description	Impact Device	Usage (%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	79.1	77.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/14/2026
Case Description: CBP-06.0 P4.1 Architectural Coating

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)				
		Daytime	Evening	Night		
-----	-----	-----	-----	-----		
Receptor at 50 feet	Residential	65.0	60.0	55.0		
		Equipment				

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
-----	-----	-----	-----	-----	-----	-----
Compressor (air)	No	40		77.7	50.0	0.0
Compressor (air)	No	40		77.7	50.0	0.0

Results

Equipment	Noise Limits (dBA)								Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/14/2026
Case Description: CBP-06.0 P4.1 Building Construction (Senior Affordable Apartments)

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Description	Impact Device	Usage (%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0

Results

Equipment	Noise Limits (dBA)								Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.6	79.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/14/2026
Case Description: CBP-06.0 P4.1 Paving

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Equipment		
				Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	50.0	0.0
Roller	No	20		80.0	50.0	0.0
Drum Mixer	No	50		80.0	50.0	0.0

Results

Equipment		Noise Limits (dBA)								Noise Limit Exceedance (dBA)					
		Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
		Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drum Mixer		80.0	77.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	80.0	79.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/14/2026
Case Description: CBP-06.0 P4.1 Architectural Coating

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)				
		Daytime	Evening	Night		
Receptor at 50 feet	Residential	65.0	60.0	55.0		
Equipment						
Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	50.0	0.0
Compressor (air)	No	40		77.7	50.0	0.0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/14/2026
Case Description: CBP-06.0 P4.2 Building Construction (Townhomes and Duet Homes)

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)				
		Daytime	Evening	Night		
Receptor at 50 feet	Residential	65.0	60.0	55.0		
Equipment						
Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	50.0	0.0
Welder / Torch	No	40		74.0	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0

Results

Equipment	Noise Limits (dBA)								Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Welder / Torch	74.0	70.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.6	77.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/14/2026
Case Description: CBP-06.0 P4.1 Paving

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor at 50 feet	Residential	65.0	60.0	55.0

Description	Impact Device	Usage (%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	50.0	0.0
Roller	No	20		80.0	50.0	0.0
Drum Mixer	No	50		80.0	50.0	0.0

Results

Equipment		Noise Limits (dBA)								Noise Limit Exceedance (dBA)					
		Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
		Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller		80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Drum Mixer		80.0	77.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total		80.0	79.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 01/14/2026
Case Description: CBP-06.0 P4.2 Architectural Coating

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)				
		Daytime	Evening	Night		
Receptor at 50 feet	Residential	65.0	60.0	55.0		
Equipment						
Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	50.0	0.0
Compressor (air)	No	40		77.7	50.0	0.0

Results

Equipment	Noise Limits (dBA)								Noise Limit Exceedance (dBA)					
	Calculated (dBA)		Day		Evening		Night		Day		Evening		Night	
	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

T R A F F I C M O D E L I N G R E S U L T S

Traffic Noise Calculator: FHWA 77-108		500 Beach Boulevard (CBP-06.0) Existing 2025 no Project Traffic Noise Traffic Conditions																								
		Output						Inputs														Auto Inputs				
		dBA at 50 feet			Distance to CNEL Contour			Roadway			Segment From - To			ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening			% Night	Number of Lanes	Site Condition
L _{eq,24hr}	L _{dn}	CNEL	70 dBA	65 dBA	60 dBA																					
ID	L _{eq,24hr}	L _{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway			Segment From - To			ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Receiver	Ground Absorption	Lane Distance
1	73.4	76.1	76.8	143	307	662	Beach Blvd	Imperial Hwy	Rosecrans Ave			37,760	55	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68	
2	71.6	74.4	75.1	109	234	504	Beach Blvd	Rosecrans Ave	La Mirada Blvd/Malvern Ave			31,610	50	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68	
3	70.4	73.2	73.9	91	197	424	Beach Blvd	La Mirada Blvd/Malvern Ave	Stage Rd/Cascade Way			40,870	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68	
4	70.8	73.6	74.3	96	207	447	Beach Blvd	Stage Rd/Cascade Way	Craig Ave			44,240	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68	
5	69.5	72.3	72.9	79	169	365	Beach Blvd	Craig Ave	Dr Sam Way			43,770	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68	
6	69.3	72.1	72.8	77	165	356	Beach Blvd	Dr Sam Way	Franklin St			42,220	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68	
7	69.1	71.9	72.6	74	160	346	Beach Blvd	Franklin St	Artesia Blvd			40,380	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68	
8	68.1	70.9	71.6	64	137	295	Beach Blvd	Artesia Blvd	Commonwealth Ave			31,890	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68	
9	68.3	71.0	71.7	65	141	303	Beach Blvd	Commonwealth Ave	Auto Center Dr			33,090	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68	
10	69.2	72.0	72.7	76	163	351	Beach Blvd	Auto Center Dr	Orangethorpe Ave			30,890	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68	
11	69.5	72.3	73.0	79	170	366	Beach Blvd	Orangethorpe Ave	SR-91 WB Ramps			32,820	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68	
12	44.8	47.6	48.3	2	4	8	Darlington Ave	Franklin St	Dr Sam Way			320	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20	
13	51.4	54.2	54.9	5	11	23	Stanton Ave	Franklin St	Taylor St			1,020	30	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20	
14	52.0	54.8	55.5	5	12	25	Stanton Ave	Taylor St	Holt St			1,170	30	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20	
15	53.3	56.1	56.8	7	14	31	Stanton Ave	Holt St	Artesia Blvd			1,590	30	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20	
16	63.4	66.2	66.9	31	66	143	Stanton Ave	Artesia Blvd	4th St			8,480	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44	
17	63.7	66.5	67.2	33	70	151	Stanton Ave	4th St	Commonwealth Ave			9,220	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44	
18	65.0	67.8	68.5	40	85	183	Stanton Ave	Commonwealth Ave	7th St			12,300	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44	
19	65.2	68.0	68.7	41	88	189	Stanton Ave	7th St	Whitaker St			12,870	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44	
20	55.2	58.0	58.7	9	19	41	Franklin St	the West	Beach Blvd			3,500	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20	
21	52.8	55.6	56.3	6	13	28	Franklin St	Beach Blvd	Homewood Ave			2,020	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20	
22	50.3	53.0	53.7	4	9	19	Franklin St	Homewood Ave	Darlington Ave			1,120	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20	
23	49.7	52.5	53.2	4	8	18	Franklin St	Darlington Ave	Marshall Ave			990	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20	
24	49.4	52.2	52.9	4	8	17	Franklin St	Marshall Ave	Stanton Ave			930	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20	
25	44.4	47.2	47.9	2	4	8	Franklin St	Stanton Ave	the East			290	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20	
26	66.8	69.6	70.3	52	113	243	Artesia Blvd	Rostrata Ave	Western Ave			18,760	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44	
27	67.6	70.4	71.1	59	127	274	Artesia Blvd	Western Ave	Beach Blvd			21,840	40	0.0%	100.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44	

Traffic Noise Calculator: FHWA 77-108																							500 Beach Boulevard (CBP-06.0) Existing 2025 Plus Project Traffic Noise Traffic Conditions													
ID	Output						Inputs														Auto Inputs															
	dBA at 50 feet			Distance to CNEL Contour																	Ground Absorption	Lane Distance														
	L _{eq-24hr}	L _{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway			Segment From - To	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Receiver														
1	73.4	76.1	76.8	143	307	662	Beach Blvd	Imperial Hwy	Rosecrans Ave	37,720	55	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68													
2	71.6	74.4	75.0	108	234	504	Beach Blvd	Rosecrans Ave	La Mirada Blvd/Malvern Ave	31,550	50	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68													
3	70.4	73.2	73.9	91	196	423	Beach Blvd	a Mirada Blvd/Malvern Ave	Stage Rd/Cascade Way	40,770	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68													
4	70.8	73.6	74.3	96	207	446	Beach Blvd	Stage Rd/Cascade Way	Craig Ave	44,150	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68													
5	69.5	72.3	72.9	79	169	365	Beach Blvd	Craig Ave	Dr Sam Way	43,800	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68													
6	69.3	72.1	72.8	77	166	358	Beach Blvd	Dr Sam Way	Franklin St	42,540	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68													
7	69.2	72.0	72.6	75	161	348	Beach Blvd	Franklin St	Artesia Blvd	40,760	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68													
8	68.0	70.8	71.5	63	136	293	Beach Blvd	Artesia Blvd	Commonwealth Ave	31,510	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68													
9	68.2	71.0	71.7	65	139	300	Beach Blvd	Commonwealth Ave	Auto Center Dr	32,710	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68													
10	69.2	72.0	72.7	75	162	350	Beach Blvd	Auto Center Dr	Orangethorpe Ave	30,640	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68													
11	69.5	72.3	73.0	79	170	365	Beach Blvd	Orangethorpe Ave	SR-91 WB Ramps	32,740	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68													
12	46.2	49.0	49.7	2	5	10	Darlington Ave	Franklin St	Dr Sam Way	440	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20													
13	51.5	54.3	54.9	5	11	23	Stanton Ave	Franklin St	Taylor St	1,040	30	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20													
14	52.1	54.8	55.5	5	12	25	Stanton Ave	Taylor St	Holt St	1,190	30	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20													
15	53.4	56.2	56.8	7	14	31	Stanton Ave	Holt St	Artesia Blvd	1,610	30	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20													
16	63.4	66.2	66.9	31	67	143	Stanton Ave	Artesia Blvd	4th St	8,500	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44													
17	63.8	66.5	67.2	33	70	152	Stanton Ave	4th St	Commonwealth Ave	9,240	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44													
18	65.0	67.8	68.5	40	85	184	Stanton Ave	Commonwealth Ave	7th St	12,340	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44													
19	65.2	68.0	68.7	41	88	189	Stanton Ave	7th St	Whitaker St	12,910	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44													
20	55.2	58.0	58.7	9	19	41	Franklin St	the West	Beach Blvd	3,500	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20													
21	53.4	56.2	56.9	7	14	31	Franklin St	Beach Blvd	Homewood Ave	2,300	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20													
22	48.3	51.1	51.7	3	7	14	Franklin St	Homewood Ave	Darlington Ave	710	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20													
23	49.9	52.7	53.4	4	8	18	Franklin St	Darlington Ave	Marshall Ave	1,030	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20													
24	49.5	52.3	53.0	4	8	17	Franklin St	Marshall Ave	Stanton Ave	950	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20													
25	44.4	47.2	47.9	2	4	8	Franklin St	Stanton Ave	the East	290	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20													
26	66.8	69.6	70.3	52	113	243	Artesia Blvd	Rostrata Ave	Western Ave	18,790	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44													

Traffic Noise Calculator: FHWA 77-108																							500 Beach Boulevard (CBP-06.0) Cumulative Base Year 2029 no Project Traffic Noise Traffic Conditions																
ID	Output						Inputs																	Auto Inputs															
	dBA at 50 feet			Distance to CNEL Contour																				Ground Absorption	Lane Distance														
	L _{eq-24hr}	L _{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment From - To	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Receiver																			
1	73.6	76.3	77.0	147	317	683	Beach Blvd	Imperial Hwy	Rosecrans Ave	39,570	55	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																
2	71.8	74.6	75.3	112	242	521	Beach Blvd	Rosecrans Ave	La Mirada Blvd/Malvern Ave	33,180	50	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																
3	70.7	73.4	74.1	94	203	437	Beach Blvd	La Mirada Blvd/Malvern Ave	Stage Rd/Cascade Way	42,890	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																
4	71.0	73.8	74.5	99	214	461	Beach Blvd	Stage Rd/Cascade Way	Craig Ave	46,440	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																
5	69.7	72.5	73.2	81	175	377	Beach Blvd	Craig Ave	Dr Sam Way	46,000	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																
6	69.5	72.3	73.0	79	171	368	Beach Blvd	Dr Sam Way	Franklin St	44,390	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																
7	69.3	72.1	72.8	77	165	356	Beach Blvd	Franklin St	Artesia Blvd	42,250	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																
8	68.4	71.2	71.9	66	143	309	Beach Blvd	Artesia Blvd	Commonwealth Ave	34,060	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																
9	68.5	71.3	72.0	68	146	315	Beach Blvd	Commonwealth Ave	Auto Center Dr	35,140	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																
10	69.5	72.3	73.0	79	170	366	Beach Blvd	Auto Center Dr	Orangethorpe Ave	32,770	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																
11	69.7	72.5	73.2	81	175	378	Beach Blvd	Orangethorpe Ave	SR-91 WB Ramps	34,440	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																
12	44.9	47.7	48.4	2	4	8	Darlington Ave	Franklin St	Dr Sam Way	330	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																
13	51.8	54.6	55.3	5	11	24	Stanton Ave	Franklin St	Taylor St	1,130	30	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																
14	52.1	54.9	55.6	5	12	25	Stanton Ave	Taylor St	Holt St	1,210	30	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																
15	53.5	56.3	56.9	7	15	31	Stanton Ave	Holt St	Artesia Blvd	1,650	30	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																
16	63.5	66.3	67.0	32	68	146	Stanton Ave	Artesia Blvd	4th St	8,780	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44																
17	63.9	66.7	67.4	33	72	155	Stanton Ave	4th St	Commonwealth Ave	9,540	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44																
18	65.2	67.9	68.6	40	87	188	Stanton Ave	Commonwealth Ave	7th St	12,760	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44																
19	65.3	68.1	68.8	42	90	194	Stanton Ave	7th St	Whitaker St	13,340	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44																
20	55.4	58.2	58.9	9	19	42	Franklin St	the West	Beach Blvd	3,650	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																
21	53.5	56.2	56.9	7	14	31	Franklin St	Beach Blvd	Homewood Ave	2,340	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																
22	50.6	53.3	54.0	4	9	20	Franklin St	Homewood Ave	Darlington Ave	1,200	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																
23	50.0	52.8	53.5	4	9	18	Franklin St	Darlington Ave	Marshall Ave	1,060	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																
24	49.8	52.5	53.2	4	8	18	Franklin St	Marshall Ave	Stanton Ave	1,000	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																
25	44.5	47.3	48.0	2	4	8	Franklin St	Stanton Ave	the East	300	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																
26	67.2	70.0	70.7	55	119	257	Artesia Blvd	Rostrata Ave	Western Ave	20,370	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44																

Traffic Noise Calculator: FHWA 77-108																											500 Beach Boulevard (CBP-06.0) Cumulative Base Year 2029 Plus Project Traffic Noise Traffic Conditions																										
ID	Output						Inputs																			Auto Inputs																											
	dBA at 50 feet			Distance to CNEL Contour			Roadway			Segment From - To			ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Receiver	Ground Absorption	Lane Distance																											
L _{eq-24hr}	L _{dn}	CNEL	70 dBA	65 dBA	60 dBA																																																
1	73.6	76.3	77.0	147	317	683	Beach Blvd	Imperial Hwy	Rosecrans Ave	39,530	55	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																														
2	71.8	74.6	75.3	112	241	520	Beach Blvd	Rosecrans Ave	La Mirada Blvd/Malvern Ave	33,120	50	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																														
3	70.6	73.4	74.1	94	203	437	Beach Blvd	La Mirada Blvd/Malvern Ave	Stage Rd/Cascade Way	42,790	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																														
4	71.0	73.8	74.5	99	214	461	Beach Blvd	Stage Rd/Cascade Way	Craig Ave	46,350	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																														
5	69.7	72.5	73.2	81	175	377	Beach Blvd	Craig Ave	Dr Sam Way	46,030	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																														
6	69.6	72.4	73.0	80	172	370	Beach Blvd	Dr Sam Way	Franklin St	44,710	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																														
7	69.4	72.1	72.8	77	166	358	Beach Blvd	Franklin St	Artesia Blvd	42,610	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																														
8	68.3	71.1	71.8	66	142	306	Beach Blvd	Artesia Blvd	Commonwealth Ave	33,680	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																														
9	68.5	71.3	71.9	67	145	313	Beach Blvd	Commonwealth Ave	Auto Center Dr	34,760	35	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																														
10	69.5	72.2	72.9	78	169	364	Beach Blvd	Auto Center Dr	Orangethorpe Ave	32,520	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																														
11	69.7	72.5	73.2	81	175	377	Beach Blvd	Orangethorpe Ave	SR-91 WB Ramps	34,340	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	6	Soft	50	0.5	68																														
12	46.3	49.1	49.8	2	5	10	Darlington Ave	Franklin St	Dr Sam Way	450	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																														
13	51.9	54.7	55.4	5	11	25	Stanton Ave	Franklin St	Taylor St	1,150	30	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																														
14	52.2	55.0	55.7	6	12	26	Stanton Ave	Taylor St	Holt St	1,230	30	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																														
15	53.5	56.3	57.0	7	15	32	Stanton Ave	Holt St	Artesia Blvd	1,670	30	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																														
16	63.6	66.3	67.0	32	68	147	Stanton Ave	Artesia Blvd	4th St	8,820	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44																														
17	63.9	66.7	67.4	33	72	155	Stanton Ave	4th St	Commonwealth Ave	9,560	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44																														
18	65.2	68.0	68.6	41	87	188	Stanton Ave	Commonwealth Ave	7th St	12,800	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44																														
19	65.4	68.1	68.8	42	90	194	Stanton Ave	7th St	Whitaker St	13,380	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44																														
20	55.4	58.2	58.9	9	19	42	Franklin St	the West	Beach Blvd	3,650	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																														
21	53.9	56.7	57.4	7	16	33	Franklin St	Beach Blvd	Homewood Ave	2,600	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																														
22	48.7	51.5	52.2	3	7	15	Franklin St	Homewood Ave	Darlington Ave	780	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																														
23	50.2	53.0	53.6	4	9	19	Franklin St	Darlington Ave	Marshall Ave	1,100	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																														
24	49.8	52.6	53.3	4	8	18	Franklin St	Marshall Ave	Stanton Ave	1,020	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																														
25	44.5	47.3	48.0	2	4	8	Franklin St	Stanton Ave	the East	300	25	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	2	Soft	50	0.5	20																														
26	67.2	70.0	70.7	55	119	257	Artesia Blvd	Rostrata Ave	Western Ave	20,400	40	0.0%	96.0%	2.5%	1.5%	75.0%	15.0%	10.0%	4	Soft	50	0.5	44																														