

Appendices

Appendix D: Noise Modeling

Appendices

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LOCAL REGULATIONS AND STANDARDS

Chapter 6

PUBLIC SAFETY

EMERGENCY SERVICES • ENVIRONMENTAL JUSTICE • CLIMATE CHANGE •
HAZARDS MANAGEMENT • WILDLAND FIRES • FLOOD CONCERNS • GEOLOGIC
AND SEISMIC CONSIDERATIONS • NOISE

VISION



Imagine Brea, where public safety is a high priority and residents feel protected from hazards. Imagine Brea, where proactive planning addresses how to mitigate hazards, such as crime, flood hazards, earthquake effects, urban and wildland fires, climate change, and noise exposure. Imagine rapid and effective emergency response. Imagine quiet residential neighborhoods designed to minimize traffic and other noise sources. Imagine urban and wildland fires quickly extinguished by a fire department that has superior personnel, equipment, and facilities to handle any fire.

One of the City's highest priorities is to ensure a safe and secure community. This Public Safety Chapter sets forth goals and policies to protect and safeguard Brea residents from wildland and urban fires, crime, hazardous materials incidents, flooding, earthquakes, exposure to the effects of climate change, and exposure to excessive noise levels. Brea will strive to be fully prepared for natural disasters and to minimize public exposure to hazards. Brea will maintain and enhance its emergency services to allow police, fire, and paramedics to respond swiftly to emergency situations. The City will maintain public safety facilities to improve public safety and protection.

NOISE

Studies have identified noise as an environmental pollutant that can have substantial and permanent impacts on human health and general well-being. Not only is noise a health hazard, but excessive noise can also be a source of annoyance, tension, and discomfort that disrupts everyday activities. Brea aims to substantially reduce noise and its impacts within the urban environment, with a focus on protecting residential neighborhoods, schools, and similar sensitive uses.

Context

In Brea, street and freeway traffic represent the primary noise sources. Industrial and commercial activity present concerns where adjacent to residential neighborhoods. In addition, mechanical equipment, playgrounds, leaf blowers, and construction equipment are examples of random noise sources that can contribute to neighborhood noise.

Figure 15 displays a composite picture of average noise levels in Brea in 2001. As Figure 15 illustrates, the loudest noise levels occur along State Highway 57, Imperial Highway, Brea Boulevard, and Valencia Avenue, where truck traffic associated with the Olinda Alpha landfill lingers past homes and places of business. Lambert Road also experiences loud noise levels due to access to State Highway 57.

Noise and Land Use Compatibility Guidelines

Noise generally is defined as unwanted or intrusive sound. Because noise consists of pitch, loudness, and duration, describing noise with a single unit of measure presents a challenge. The A-weighted decibel scale, or dB(A), has been developed to describe the loudness of a sound or sound environment based on the sensitivity of the human ear. A sound level meter that measures A-weighted decibels has an electrical circuit that allows the meter to have the same sensitivity to sound at different frequencies as the average human ear. Table 3 indicates criteria the State has established to reduce adverse noise effects on human health.

Table 3
State Criteria for Minimizing
Adverse Noise Effects on Humans

Objective	dB(A) Range
Prevent Hearing Loss	75-80
Prevent Physiological Effects (Other than hearing loss)	65-75
Prevent Speech Interference	50-60
Address People's Subjective Preference for Noise Control	45-50
Prevent Sleep Interruption	35-45

Source: California General Plan Guidelines, 2000.

The dB(A) descriptor only reports noise from a single source or combination of sources at a point in time. To allow a more comprehensive description of a noise environment, federal and State agencies have established noise and land use compatibility guidelines that use averaging approaches to noise measurement. Two measurement scales commonly used in California are the Community Noise Equivalent Level (CNEL) and the day-night level (Ldn). To account for increased human sensitivity at night, the CNEL level includes a 5-decibel penalty on noise during the 7:00 A.M. to 10:00 P.M. time period and a 10-decibel penalty on noise during the 10:00 P.M. to 7:00 A.M. time period. The Ldn level includes only the 10-decibel weighting for late-night noise. These values are nearly identical for all but unusual noise sources.

The City will use land use compatibility standards when planning and making development decisions in order to ensure that noise producers do not adversely affect sensitive receptors.

The City's primary goal with regard to community noise is to minimize the exposure of residents to unhealthful or excessive noise levels to the extent possible. To this end, the noise/land use compatibility guidelines in Figure 14, based on cumulative noise criteria for outdoor noise, are used to review development proposals and to identify and mitigation measures necessary to avoid or minimize impacts, including traffic noise impacts, a new use may have on established uses.

Noise Contours and Noise Impact Areas

The use of noise contours based on the major noise sources can describe the noise environment for the community. Noise contours outline areas of equal noise exposure. Future noise contours have been estimated using information about existing and projected land use development and transportation activity.

The projected noise contours and noise impact areas for Brea are displayed in Figure 16. These contours will serve as a guide for land use and development decisions. Contours of 60 dB(A) or greater define noise impact areas. An acoustical analysis must be prepared when noise sensitive land uses are proposed within noise impact areas. The analysis must show that the project is designed to attenuate noise to meet the City's noise standards in order to receive approval. If the project design does not meet the noise standards, mitigation can be recommended in the analysis. If the analysis demonstrates that the noise standards can be met by implementing the mitigation measures, the project can be approved conditioned upon implementation of the mitigation measures.

Transportation Related Noise

Transportation activity is the primary source of noise in Brea. The three major sources of transportation related noise are:

- Traffic on the Orange Freeway (SR-57)
- Commercial truck traffic associated with the Olinda Alpha landfill on Valencia Avenue and Imperial Highway
- Automobile traffic on Brea Boulevard, Brea Canyon Road, Central Avenue, and Lambert Road

Residential neighborhoods bordering the Orange Freeway are subject to loud noise levels. Properties directly adjacent to the freeway can experience decibels as high as 70 to 75 dB(A). Sound attenuation walls, landscaped buffers, and dirt mounds all help to reduce the sound intensity of the freeway. Figure 16 illustrates the projected noise contours along the freeway.

Commercial trucks associated with the Olinda Alpha landfill contribute to excessive noise levels via the Orange Freeway,

Imperial Highway, and Valencia Avenue to connect with the landfill. Commercial trucks are not permitted to access Valencia Avenue via Lambert Road, minimizing some of the noise impacts to adjacent residential neighborhoods. Olinda Alpha is

slated to close in the year 2013; however, the County of Orange is investigating extending the life of the landfill much further.

New residential development has been recently constructed at the northeast corner of Valencia Avenue and Carbon Canyon Road just south of the Olinda Alpha landfill entrance. Dense planting of deciduous and evergreen trees as well as a sound attenuation wall were set within the landscaped area to minimize the impacts to residential properties directly abutting Valencia Avenue.

Proposed residential land uses have also been designated for both sides of Valencia Avenue south of Lambert Road/Carbon Canyon Road. Residential, school, and park uses are proposed for the Hartley Research Center. Careful planning and mitigation within these areas will protect these sensitive uses from excessive noise levels.

Noise levels along Brea Boulevard, Brea Canyon Road, Central Avenue, and Lambert Road are above average and can impact sensitive uses adjacent to these streets.

Traffic noise depends primarily on the speed of traffic and the percentage of truck traffic. The primary source of noise from automobiles is high-frequency tire noise, which increases with speed. In addition, trucks and older automobiles produce engine and exhaust noise.

The most efficient and effective means of controlling noise from transportation systems is to reduce noise at the source. However, the City has little direct control over noise produced by transportation sources because State noise regulations preempt local regulations. Because the City cannot control noise at the source, City noise programs focus on reducing the impact of transportation noise at reception sites. During the planning stages of the development process, potential impacts from transportation noise will be identified and mitigation measures will be required as needed to meet City noise standards.



Sound attenuation walls and limits on speed help to shield residential neighborhoods from automobile noise on Imperial Highway.

Non-Transportation Related Noise

When reviewing a proposed industrial, commercial, or public project, noise generation and potential impacts to surrounding development are considered in accordance with CEQA. Specific attention should be given to non-residential proposals adjacent to residential neighborhoods. An acoustical analysis is required for projects that will generate noise potentially affecting sensitive receptors. Where significant impacts are identified, mitigation measures are required. Common mitigation measures that could be applied when reviewing projects include acoustically treated and quiet design: 1) furnaces, 2) fans, 3) motors, 4) compressors, and 5) valves and pumps. The City may also require limited delivery hours and hours of operation to minimize impacts on adjacent residential users or other sensitive receptors.

Figure 14. Noise/Land Use Compatibility

Land Use Category	Community Noise Equivalent Level (CNEL) or Day-Night Level (Ldn), dB						
	55	60	65	70	75	80	85
Residential- Low-Density Single-Family, Duplex, Mobile Homes							
Residential- Multiple Family							
Transient Lodging - Motels, Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arenas, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business, Commercial and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

Nature of the noise environment where the CNEL or Ldn level is:

Below 55 dB

Relatively quiet suburban urban areas, no arterial streets within 1 block, no freeways within 1/4 mile.

55-65 dB

Most somewhat noisy urban areas, near but not directly adjacent to high volumes of traffic.

65-75 dB

Very noisy urban areas near arterials, freeways or airports.

75+ dB

Extremely noisy urban areas adjacent to freeways or under airport traffic patterns. Hearing damage with constant exposure outdoors.

 **Normally Acceptable**

Specified land use is satisfactory, based on the assumption that any buildings are of normal conventional construction, without any special noise insulation requirements

 **Conditionally Acceptable**

New construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

 **Normally Unacceptable**

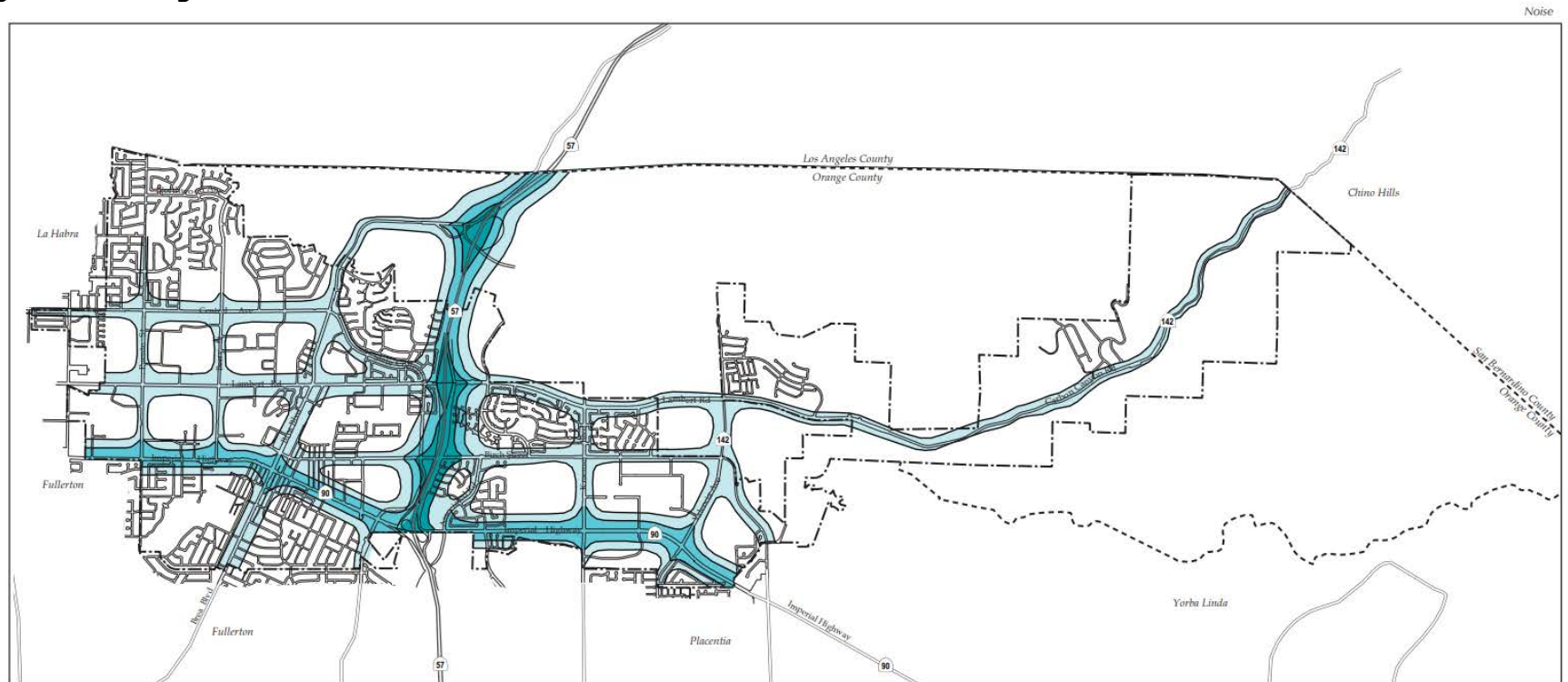
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in design.

 **Clearly Unacceptable**

New construction or development should generally not be undertaken.

The Community Noise Equivalent Level (CNEL) and Day-Night Noise Level (Ldn) are measures of noise environment. They represent the constant A-weighted noise level that would be measured if energy received over the day were averaged. In order to account for the greater sensitivity of people at night, the CNEL weighting includes a 5-decibel penalty on noise between 7:00 p.m. and 10:00 p.m. and a 10-decibel penalty on noise between 10:00 p.m. and 7:00 a.m. of the next day. The Ldn includes a 10-decibel weighting for late-night noise events. For practical purposes, the two measures are equivalent for typical urban noise environments.

Figure 15. Average Noise Levels in Brea (2001)



Source: Weiland Associates, 2001.



Legend

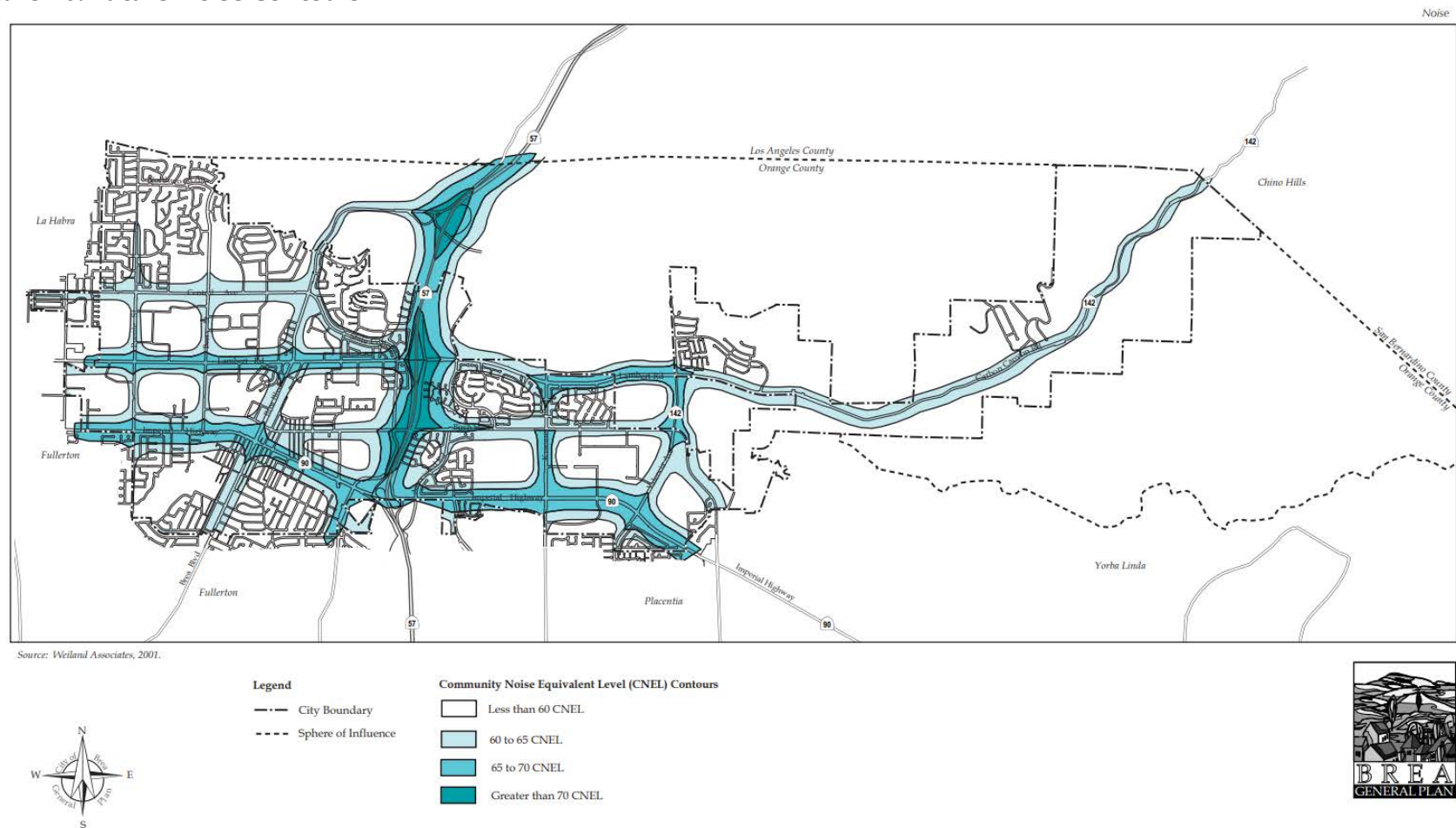
- City Boundary
- Sphere of Influence

Community Noise Equivalent Level (CNEL) Contours

- Less than 60 CNEL
- 60 to 65 CNEL
- 65 to 70 CNEL
- Greater than 70 CNEL



Figure 16. Future Noise Contours



Goals and Policies

Certain areas of Brea are subject to high levels of noise. This in turn can reduce the quality of life within these neighborhoods. Consideration of noise sources in the planning process and identification of who that noise impacts is an effective method of minimizing the impacts of noise on residents. Areas already impacted by noise can explore different noise attenuation and rehabilitative improvements.

Goal PS-9	Minimize the impact of point source noise and ambient noise levels throughout the community.
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| Policy PS-9.1 | Evaluate the need to require acoustical studies for development proposals that address both direct and indirect, particularly traffic, noise impacts, and require such studies, with appropriate mitigation included, as warranted. |
| Policy PS-9.2 | Ensure that the noise standards set forth in the Municipal Code reflect standards most appropriate for Brea. |
| Policy PS-9.3 | Ensure that acceptable noise levels are maintained near schools, hospitals, convalescent homes, and other noise sensitive areas in accordance with the City's Municipal Code and noise standards contained in the General Plan. |
| Policy PS-9.4 | Employ creative methods of reducing noise pollution in the City. |
| Policy PS-9.5 | Avoid placing high-noise activity centers near residential areas. |

Goal PS-10	Minimize the impacts of transportation-related noise.
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| Policy PS-10.1 | Reduce transportation noise by imposing traffic restrictions where necessary. |
| Policy PS-10.2 | Work with the counties of Orange and Los Angeles to include noise mitigation measures in the design of new roadway projects. |



Goal PS-11	Minimize noise impacts from sources other than transportation.
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- Policy PS-11.1 Require the inclusion of noise mitigation measures, techniques, and design features in the planning, design, and construction of future development and redevelopment projects.
- Policy PS-11.2 Require that mixed-use structures be designed to prevent transfer of noise and vibration from commercial/retail to residential use.
- Policy PS-11.3 Minimize stationary noise sources and noise emanating from construction activities and special events.
- Policy PS-11.4 Require that new non-residential development plan delivery areas away from existing residential areas.
- Policy PS-11.5 Continue active enforcement to limit commercial and industrial delivery hours adjoining residential areas.

**Implementation
Guide**



See Section XXIII of the Implementation Guide for action programs.

CHAPTER 8.20: NOISE CONTROL

Section

- 8.20.010 Declaration of policy
- 8.20.020 Definitions
- 8.20.030 Noise level measurement criteria
- 8.20.040 Designated noise zone
- 8.20.050 Exterior noise standards
- 8.20.060 Interior noise standards
- 8.20.070 Special provisions
- 8.20.080 Motor vehicle racing
- 8.20.090 Schools, hospitals and churches
- 8.20.100 Air conditioning; refrigeration; pool filters and fans
- 8.20.110 Noise level measurement
- 8.20.120 Manner of enforcement

§ 8.20.010 DECLARATION OF POLICY.

A. In order to control unnecessary, excessive and annoying sounds emanating from areas of the city, it is hereby declared to be the policy of the city to prohibit such sounds generated from all sources as specified in this chapter.

B. It is determined that certain sound levels are detrimental to the public health, welfare and safety, and contrary to the public interest.

('61 Code, § 7B.1) (Ord. 812, passed - -)

§ 8.20.020 DEFINITIONS.

For the purpose of this chapter, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

AMBIENT NOISE LEVEL. The all-encompassing noise level associated with a given environment, being a composite of sounds from all sources, excluding the alleged offensive noise, at the location and approximate time at which a comparison with the alleged offensive noise is to be made.

CUMULATIVE PERIOD. An additive period of time composed of individual time segments which may be continuous or interrupted.

DECIBEL (dB). A unit which denotes the ratio between two (2) quantities which are proportional to power: the number of decibels corresponding to the ratio or two (2) amounts of power is ten (10) times the logarithm to the base ten (10) of this ratio.

DWELLING UNIT. A single unit providing complete, independent living facilities for one (1) or more persons including permanent provisions for living, sleeping, eating, cooking and sanitation.

EMERGENCY MACHINERY, VEHICLE, OR WORK. Any machinery, vehicle or work used, employed or performed in an effort to protect, provide or restore safe conditions in the community or for the citizenry, or work by private or public utilities when restoring utility service.

FIXED NOISE SOURCE. A stationary device which creates sounds while fixed or motionless, including but not limited to industrial and commercial machinery and equipment, pumps, fans, compressors, generators, air conditioners and refrigeration equipment.

GRADING. Any excavating or filling of earth material, or any combination thereof, conducted at a site to prepare said site for construction or other improvements thereon.

IMPACT NOISE. The noise produced by the collision of one mass in motion with a second mass which may be either in motion or at rest.

MOBILE NOISE SOURCE. Any noise source other than a fixed noise source.

NOISE LEVEL. The “A” weighted sound pressure level in decibels obtained by using a sound level meter at slow response with a reference pressure of twenty (20) micronewtons per square meter. The unit of measurement shall be designated as dB(A).

PERSON. A person, firm, association, co-partnership, joint venture, corporation or any entity, public or private in nature.

RESIDENTIAL PROPERTY. A parcel of real property which is developed and used either in part or in whole for residential purposes, other than transient uses such as hotels and motels.

SIMPLE TONE NOISE. A noise characterized by a predominant frequency or frequencies so that other frequencies cannot be readily distinguished.

SOUND LEVEL METER. An instrument meeting American National Standard Institute's Standard S1.4-1971 for Type 1 or Type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

SOUND PRESSURE LEVEL OF A SOUND, IN DECIBELS. Twenty (20) times the logarithm to the base ten (10) of the ratio of the pressure of the sound to a reference pressure, which reference pressure shall be explicitly stated.

('61 Code, § 7B.2) (Ord. 812, passed - -)

§ 8.20.030 NOISE LEVEL MEASUREMENT CRITERIA.

Any noise level measurements made pursuant to the provisions of this chapter shall be performed using a sound level meter as defined in § 8.20.020.

('61 Code, § 7B.3) (Ord. 812, passed - -)

§ 8.20.040 DESIGNATED NOISE ZONE.

The entire territory of the city is hereby designated as “Noise Zone 1.”

('61 Code, § 7B.4) (Ord. 812, passed - -)

§ 8.20.050 EXTERIOR NOISE STANDARDS.

A. The following noise standards, unless otherwise specifically indicated, shall apply to all residential property within a designated noise zone:

NOISE STANDARDS

Noise Zone	Noise Level	Time Period
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1 55 dB(A) 7:00 a.m. - 10:00 p.m.

1 50 dB(A) 10:00 p.m. - 7:00 a.m.

In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five (5) dB(A).

B. It shall be unlawful for any person at any location within the city to create any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, to exceed:

1. The noise standard for a cumulative period of more than 30 minutes in any hour; or

2. The noise standard plus five (5) dB(A) for a cumulative period of more than 15 minutes in any hour; or

3. The noise standard plus ten (10) dB(A) for a cumulative period of more than five (5) minutes in any hour; or

4. The noise standards plus fifteen (15) dB(A) for a cumulative period of more than one (1) minute in any hour; or

5. The noise standard plus twenty (20) dB(A) for any period of time.

C. In the event the ambient noise level exceeds any of the first four (4) noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

('61 Code, § 7B.5) (Ord. 812, passed - -)

§ 8.20.060 INTERIOR NOISE STANDARDS.

A. The following interior noise standards, unless otherwise specifically indicated, shall apply to all residential property within a designated noise zone:

INTERIOR NOISE STANDARDS

Noise Zone	Noise Level	Time Period
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1	55 dB(A)	7:00 a.m. - 10:00 p.m.
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1	45 dB(A)	10:00 p.m. - 7:00 a.m.
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In the event the alleged offensive noise consists entirely of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five (5) dB(A).

B. It shall be unlawful for any person at any location within the city to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, to exceed:

1. The interior noise standard for a cumulative period of more than five (5) minutes in any hour; or

2. The interior noise standard plus five (5) dB(A) for a cumulative period of more than one (1) minute in any hour; or

3. The interior noise standard plus ten (10) dB(A) for any period of time.

C. In the event the ambient noise level exceeds any of the first two (2) noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the third noise limit category the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

('61 Code, § 7B.6) (Ord. 812, passed - -)

§ 8.20.070 SPECIAL PROVISIONS.

The following activities shall be exempted from the provisions of this chapter:

A. Activities conducted on the grounds of any public nursery, elementary, intermediate or secondary school or college.

B. Outdoor gatherings, public dances and shows, provided said events are conducted pursuant to a permit as required by this code.

C. Activities conducted on any park or playground, provided such park or playground is owned and operated by a public entity.

D. Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle or work.

E. Noise sources associated with construction, repair, remodeling, or grading of any real property, provided said activities do not take place between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday.

F. All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions.

G. Mobile noise sources associated with agricultural operations; provided such operations do not take place between the hours of 7:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday.

H. Mobile noise sources associated with agricultural pest control through pesticide application, provided that the application is made in accordance with restricted material permits issued by or regulations enforced by the Agricultural Commissioner.

I. Noise sources, associated with the maintenance of real property, provided said activities take place between 7:00 a.m. and 7:00 p.m. on any day.

J. Any activity to the extent regulation thereof has been preempted by state or federal law.

('61 Code, § 7B.7) (Ord. 812, passed - -)

§ 8.20.080 MOTOR VEHICLE RACING.

It shall be unlawful to conduct motor vehicle racing, testing, timing or similar noise-producing activities at raceways, speedways, off-road vehicle courses, drag strips or other similar places, including, but not limited to, the operation of midget race cars, drag cars, motorcycles, off-road vehicles, and specialty automobiles, between the hours of 11:30 p.m. and 7:00 a.m.

('61 Code, § 7B.8) (Ord. 812, passed - -)

§ 8.20.090 SCHOOLS, HOSPITALS AND CHURCHES.

It shall be unlawful for any person to create any noise which causes the noise level at any school, hospital or church while same is in use to exceed the noise limits as specified in § 8.20.050 proscribed

for the assigned noise zone in which the school, hospital or church is located, or which noise level unreasonably interferes with the use of such institutions or which unreasonably disturbs or annoys patients in the hospital, provided conspicuous signs are displayed in three (3) separate locations within one-tenth of a mile of the institution indicating the presence of a school, church or hospital.

('61 Code, § 7B.9) (Ord. 812, passed - -)

§ 8.20.100 AIR CONDITIONING; REFRIGERATION; POOL FILTERS AND FANS.

During the five (5) year period following the effective date of this chapter, the noise standards enumerated in §§ 8.20.050 and 8.20.060 shall be increased eight (8) dB(A) where the alleged offensive noise source is an air conditioning, or refrigeration system, fan, or swimming pool filter, or associated equipment which was installed prior to the effective date of this chapter.

('61 Code, § 7B.10) (Ord. 812, passed - -)

§ 8.20.110 NOISE LEVEL MEASUREMENT.

The location selected for measuring exterior noise levels shall be at any point on the affected property. Interior noise measurements shall be made within the affected dwelling unit. The measurement shall be made at a point at least four (4) feet from the wall, ceiling or floor nearest the alleged offensive noise source and may be made with the windows of the affected unit open.

('61 Code, § 7B.11) (Ord. 812, passed - -)

§ 8.20.120 MANNER OF ENFORCEMENT.

A. The Police Department, the Code Enforcement Officer and their duly authorized representatives are directed to enforce the provisions of this chapter.

B. No person shall interfere with, oppose or resist any authorized person charged with the enforcement of this chapter while such person is engaged in the performance of his or her duty.

('61 Code, § 7B.12) (Ord. 812, passed - -)

§ 20.20.040 VIBRATION.

Every use shall be so operated that the ground vibration inherently and recurrently generated does not cause a displacement of the earth greater than .003 of one (1) inch as measured at the property line of the subject use.

(Ord. 425, passed 10-14-68)

§ 20.258.030 SPECIFIC DEVELOPMENT STANDARDS FOR ALL MIXED-USE PROJECTS.

This section provides standards for the development of mixed-use projects. The primary intent of these development standards is to balance the needs of nonresidential uses for access, visibility, parking, loading, safety, and possibly extended hours of operation with the needs of residential uses for privacy, security, and relative quiet.

A. *Integration of uses.*

1. *Integration defined.* Potential ways to integrate the uses allowed in MU-I (Mixed Use I), MU-II (Mixed-Use II), and MU-III (Mixed-Use III) zoning districts include:

a. *Vertical integration.* A mix of nonresidential uses (i.e., commercial, retail, and/or office) located on the ground floor with residential dwelling units located above.

b. *Horizontal integration.* A mix of nonresidential uses located on the primary street frontage of a parcel and residential uses located at the rear of a parcel.

c. *Combined approach.* A combination of vertical and horizontal integration of nonresidential and residential uses.

2. *MU-I zoning districts.* In MU-I (Mixed-Use I) zoning districts, nonresidential and residential uses shall be vertically integrated whenever possible; however, stand-alone residential projects and stand-alone nonresidential projects are allowed when planned and designed as an integrated element of a larger mixed-use development area.

3. *MU-II zoning districts.* In MU-II (Mixed-Use II) zoning districts, both vertical and/or horizontal integration of nonresidential and residential uses shall be allowed; however, stand-alone residential projects and stand-alone nonresidential projects are allowed when planned and designed as an integrated element of a larger mixed-use development area.

4. *MU-III zoning districts.* In MU-III (Mixed-Use III) zoning districts, both vertical and/or horizontal integration of nonresidential and residential uses shall be allowed subject to the following:

a. *Parcels of one (1) acre or greater.* Parcels of one (1) acre or greater in total net area shall provide a vertical and/or horizontal mix of nonresidential and residential uses.

b. *Parcels of less than one (1) acre.* Parcels of less than one (1) acre in total net area may either:

(1) Provide a mix of nonresidential and residential uses; or

(2) Incorporate stand-alone residential projects at a maximum density of fourteen (14) du/acre or stand-alone nonresidential projects. For parcels fronting Brea Boulevard or Imperial Highway, no stand-alone residential projects shall be allowed. Nonresidential projects and access serving nonresidential projects (except for live/work facilities) shall not be allowed on Walnut Avenue.

B. *Parcel Consolidation Incentive Program.* In order to encourage the assemblage of smaller existing parcels into larger parcels that can be more efficiently developed into a mixed-use project, the following incentives are offered:

1. *Allowable incentives for parcel consolidation:*

a. Reduction in required parking for a mixed-use project.

b. Increase in maximum total sign area, up to a maximum of twenty percent (20%).

c. Increase in maximum parcel coverage, up to a maximum of ten percent (10%).

d. Reduction in common and/or private open space requirements, up to a maximum of ten percent (10%).

e. Priority (e.g., fast-track) permit processing.

f. City participation in provision of infrastructure (e.g., installation of curb, gutter, and sidewalk, installation of streetscape, undergrounding of utilities, upgrading of utilities, etc.)

2. *Parcel consolidation thresholds:*

a. Consolidation of existing small parcels into a development project site of one (1) acre or greater up to two (2) acres: Any two (2) of the allowable incentives identified above, except for items e. and f.

b. Consolidation of existing small parcels into a development project site of two (2) acres or greater: Any four (4) of the allowable incentives identified above.

C. *Development standards generally.* Mixed-use projects shall comply with the development standards in this paragraph in addition to the standards in paragraphs D through O, below.

1. *Uses located in a single structure.* For a mixed-use project where nonresidential and residential uses are located in a single structure, the density, floor area ratio (FAR), height of structures, parcel depth, parcel size, parcel width, and setbacks identified in Tables 2-3 through 2-8 shall apply.

2. *Uses located in separate structures.* For a mixed-use project where nonresidential uses and residential uses are located in separate structure(s), the following shall apply:

a. *Nonresidential development.*

(1) Tables 2-3, 2-4, and 2-5 (development standards for mixed use and nonresidential projects in the Mixed-Use I, Mixed-Use II, and Mixed-Use III zoning districts, respectively) shall apply.

b. *Multi-family residential development.*

(1) Tables 2-6, 2-7, and 2-8 (development standards for "stand-alone" residential projects in the Mixed-Use I, Mixed-Use II, and Mixed-Use III zoning districts, respectively) shall apply.

D. *Design standards.*

1. *Generally.* A mixed-use development project shall be designed and constructed to:

a. Be pedestrian in its focus.

b. Allow for vehicles to park once.

c. Be compatible with and complement adjacent land uses.

d. Maintain the scale and character of development along Birch Street, Brea Boulevard, and Imperial Highway, and provide a transition to the adjacent residential uses in the surrounding area

2. *Consistent use of architectural details and materials.* Architectural style and use of quality materials shall be consistent throughout an entire mixed-use project. However, differences in architectural details and/or materials may occur to differentiate between the nonresidential and residential portions of the project. Dwelling units shall exhibit a residential character. Loading areas and recycling and refuse storage facilities shall be compatible in architectural design and details with the overall project.

3. *Features.*

a. *Street level features.* Long expanses of blank walls or an unbroken series of garage doors shall be prohibited.

b. *Pedestrian-oriented features.* At least seventy-five percent (75%) of the building frontage facing a public street or pedestrian way shall be devoted to pedestrian-oriented features (e.g., pedestrian entrances; landscaping; transparent display windows; windows affording views into retail, office, or lobby spaces, etc.). The review authority may reduce this percentage on a case-by-case basis.

c. *Upper level features.* Upper floor balconies, bays, and windows that overlook the street shall be provided whenever opportunities exist for such features.

d. *Rooflines and setbacks.* Projects shall provide a variety of roof designs as determined to be suitable by the Director.

e. *Storefronts.* The design of ground floor storefronts shall provide primary pedestrian access directly from the adjacent public street frontage, and include different setbacks and/or design features including, but not limited to, overhangs, awnings, and trellis, to visually differentiate the storefronts from other levels.

f. *Entrances.* When nonresidential and residential uses are located in the same structure, separate pedestrian entrances shall be provided for each use. The entrances for nonresidential uses shall be designed to visually distinct from the entrances for residential uses.

g. *Visual relationship between multiple structures.* Multiple structures on a single site shall be designed to create a strong visual relationship between and among the structures. Architectural treatment of structures shall be consistent on all sides.

h. *Preservation of neighborhood character.* The design of new infill development shall respect, complement, and be compatible with the scale, style, theme, and design of established structures and neighborhoods.

E. *Landscaping standards.*

1. *Consistent with landscaping design guidelines.* The landscaping of a mixed-use project shall be consistent with the requirements of § 20.236.040.M.

2. *Open space.* Common open space areas above the ground level shall be landscaped using containerized plant materials that are irrigated by an automatic irrigation system and adequately drained.

3. *Street trees.* Street trees shall be required in compliance with the city's Master Street Tree Plan.

F. *Lighting standards.* Lighting for nonresidential uses shall be appropriately designed, located, and shielded to ensure that they do not negatively impact the residential uses in compliance with § 20.08.040.C.5 (Light and Glare).

G. *Open space standards.* The common and private open spaces required for residential dwelling units shall be designed to limit intrusion by nonresidents. In the case of an infill development project, the Review Authority may approve a reduction in the required open space (common and/or private) for the residential component of mixed-use development projects when it finds that all reasonable attempts to fulfill the requirements have been exhausted and the open space is not able to be accommodated due to the urban infill characteristic of the development site.

H. *Operational standards.*

1. *Hours of operation.* Outdoor nonresidential uses in mixed-use projects shall be prohibited from operating between the hours of 10:00 p.m. and 7:00 a.m. A conditional use permit granted in

compliance with § 20.408.030 (Conditional Use Permit) may modify these hours.

2. *Joint tenants and owners association.*

a. A joint tenants and owners association shall be formed to ensure the well being of each tenant and owner in a mixed-use project.

b. The association bylaws, including voting rights, shall be subject to review by the City Attorney and approval by the Director. The association's bylaws shall include the following:

(1) Assignment of parking spaces per each use.

(2) Identification of maintenance responsibilities for landscaping, parking facilities, and recycling and refuse storage facilities.

(3) Noise notification procedures.

(4) Relationship between uses regarding association representation.

(5) Voting procedures.

(6) Procedures for solving problems that may arise between the different types of uses or residents.

3. *Loading and unloading activities.* Where applicable, the covenants, conditions, and restrictions of a mixed-use project shall indicate the times when the loading and unloading of goods may occur on the street, provided that in no event shall loading or unloading take place after 10:00 p.m. or before 7:00 a.m. on any day of the week.

4. *Noise notification.*

a. Residents, whether owners or tenants, of a mixed-use development project shall be notified in writing before taking up residence that they will be living in an urban type of environment and that the noise levels may be higher than a typical residential area.

b. The covenants, conditions, and restrictions of a mixed-use project shall require that the residents acknowledge their receipt of the written noise notification. Their signatures shall confirm receipt and understanding of this information.

5. *Nuisance mitigation.* The location and design of recycling and refuse storage facilities shall mitigate nuisances from odors when residential uses might be impacted.

6. *Sound mitigation.* Residential dwelling units shall be designed to be sound attenuated against present and future project noise. New projects or new nonresidential uses in existing projects shall provide an acoustical analysis report, by an acoustical engineer, describing the acoustical design features of the structure required to satisfy the exterior and interior noise standards.

I. *Parking facilities standards.*

1. *Number of parking spaces.* The total number of parking spaces shall comply with the requirements in § 20.08.040 (Off-Street Parking and Loading). Guest parking shall be provided for the residential dwelling units. Applicants for a mixed-use project shall prepare and submit a parking study (including any request for a parking reduction) for review and decision by the applicable review authority and a parking management plan for review and decision by the Director.

2. *Separate or shared parking facilities.* Parking facilities may be separate or shared for nonresidential uses and residential uses.

3. *Loading areas.* Loading areas for nonresidential uses shall be located as far as possible from residential units and shall be completely screened from view from the residential portion of the project.

and streets in compliance with subsections 20.236.040. E (Walls and Fences) and 20.220.040. F (Fences, Walls, and Hedges) and subparagraph K. (Screening and buffering standards), below. Loading areas shall be compatible in architectural design and details with the overall project. The location and design of loading areas shall mitigate nuisances from odors when residential uses might be impacted.

4. *Site access driveways.* Separate site access driveways shall be provided, whenever possible, for nonresidential and residential uses. Site access driveways shall incorporate distinctive architectural elements, landscape features, and signs to help differentiate access to nonresidential parking areas from access to residential parking areas.

5. *Enclosed parking.* If enclosed parking is provided for the entire mixed-use complex, separate areas/levels shall be provided for nonresidential and residential uses with separate building entrances, whenever possible, subject to confirmation and approval by the applicable review authority.

6. *Ingress and egress.* Vehicular circulation shall be designed to direct traffic away from residential streets to the greatest extent feasible.

J. *Recycling and refuse storage facilities standards.* Recycling and refuse storage facilities for nonresidential uses shall be located as far as possible from residential units and shall be completely screened from view from the residential portion of the project and streets in compliance with §§ 20.236.040.E (Walls and Fences) and 20.220.040.F (Fences, Walls, and Hedges) and subparagraph K (Screening and buffering standards) below. Recycling and refuse storage facilities for nonresidential uses should be compatible in architectural design and details with the overall project. The location and design of trash enclosures shall mitigate nuisances from odors when residential uses might be impacted.

K. *Screening and buffering standards.*

1. *Loading areas and recycling and refuse storage facilities.* Loading areas and recycling and refuse storage facilities for nonresidential uses shall be completely screened from view from adjacent residential portions of the project or other adjacent residential uses.

2. *Roof-mounted equipment.* Roof-mounted equipment shall be completely screened from public views from the ground elevation.

3. *Noise-generating equipment.* Noise-generating equipment (e.g., refrigeration units, air conditioning, exhaust fans, etc.) shall require special consideration in their location and screening in order to avoid creating a nuisance.

L. *Security standards.* Structures shall be designed to minimize the personal security risks of uses and to minimize the opportunities for vandalism and theft.

M. *Sign standards.* The design of signs shall comply with Chapter 20.28 (Signs).

N. *Site organization standards.*

1. *Limitations on location of residential uses in the Mixed-Use III zone.* In horizontal mixed-use projects along Brea Boulevard and Imperial Highway, residential uses shall not occupy ground floor space within the first fifty (50) feet of a parcel measured from the front property line. In the Mixed-Use III zone, within vertical mixed-use projects along Brea Boulevard or Imperial Highway, residential uses shall not occupy any ground floor space, along the major street frontage, except for entry lobbies. Residential uses may occupy street frontages along secondary/side streets as determined by the Director.

2. *Location of nonresidential uses along street frontages.*

a. Nonresidential uses shall be located along street frontages and shall have a minimum depth of fifty (50) feet. The Director may reduce the depth requirements for nonresidential uses located on a secondary street.

b. On corner parcels, the nonresidential space shall turn (wrap around) the corner for a distance of at least thirty (30) feet along secondary/side streets.

c. A minimum of seventy-five percent (75%) of the street frontage along major or primary streets shall be occupied by nonresidential uses. The remaining twenty-five percent (25%) may be occupied by lobby entrances to residential uses and pedestrian amenities (e.g., plaza, courtyard) The Director may reduce/adjust the percentage frontage requirements.

3. *Entrances.* Primary building entrances shall be oriented to the major street on which the structure has frontage, street corner, courtyard, plaza, park, or other structures on the site but not to interior blocks or parking lots/structures. A structure may have other entrances as long as direct, barrier-free pedestrian access is provided to all entrances.

4. *Sharing of common open space.* Mixed-use structures shall be arranged to create opportunities for common open space for the residential uses. In general, common open space areas for residential uses shall be separated from nonresidential uses on the site. However, the sharing of common open space may be allowed by the applicable review authority when it is clear that the open space will provide direct benefit to residents of the project and subject to the following limitations.

a. Up to thirty percent (30%) of the required common open space for residential uses in a horizontal mixed-use project may be provided within the nonresidential component of the project.

b. Up to sixty percent (60%) of the required common open space for residential uses in a vertical mixed-use project may be provided within the nonresidential component of the project.

5. *Pedestrian environment.* Site planning shall integrate the street pedestrian environment with the nonresidential uses through the use of courtyards, plazas, street furniture, and walkways. Public and private walkways, passages, paseos, and related facilities shall be provided, whenever possible. Pedestrian access to mixed-use structures shall be from the sidewalk. Enhanced pedestrian amenities (i.e., courtyard, plaza, paseo) shall be required for mixed-use projects located along Brea Boulevard and Imperial Highway in the MU-III (Mixed-Use III) zoning district.

O. *Historic structures.* The standards in this section may not apply where they conflict with the design or character of the architecture of existing structures listed on the National Register of Historic Places, Buildings, or Structures; the California State Inventory of Historical Sites and Buildings; the Orange County Historic Register; or the Brea Historic Resources Register. Refer to Chapter 20.60. (Historic Preservation) for design guidelines for renovating or rehabilitating historic structures.

(Ord. 1089, passed 3-7-06; Am. Ord. 1241, passed 8-15-23)

Imagine Brea

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FACT SHEET

Summary of Proposed Updates to CEQA Thresholds Related to Construction Noise and Vibration

January 11, 2024

Background

Pursuant to California Environmental Quality Act (CEQA) Guideline Section 15064.7(b), the Department of City Planning (Department) is considering adopting updated thresholds of significance and methodologies to analyze impacts for construction noise and vibration. Pursuant to the authority of the Director of Planning (Director) under Los Angeles Charter Section 506 to make and enforce any necessary rules and regulations, the Director is considering the adoption of updated thresholds and methodology in the Department's preparation of CEQA clearances. Below is a summary of the proposed updates to the CEQA Thresholds related to Construction Noise and Vibration.

An analysis of the City's current construction noise thresholds, as well as a review of best practices and thresholds used by other jurisdictions, found that the City's existing thresholds are overly conservative, especially in the context of impacts to public health. In particular, the use of a numeric threshold based on the increase in decibel levels over existing ambient conditions (e.g., a 5 dBA [A-weighted decibel] increase over ambient conditions) often results in a determination that construction noise impacts are significant, even for routine construction activities that are expected to occur in an urban environment. The increase in ambient level threshold is so low that it has the potential to show significant environmental impacts, even for activities such as a single day of construction or exterior remodeling of a single-family home in a residential area involving no unusual noise-producing equipment. As a result, a more appropriate construction noise threshold should be crafted in consideration that construction noise is temporary and periodic, and that while construction noise could result in human annoyance, it may not necessarily result in direct health impacts unless a certain absolute noise threshold is attained.



The thresholds were developed based on input from noise experts, Department staff, and review of noise thresholds used by other state and local agencies.

Purpose

- The new set of thresholds are intended to:
 - Be better suited to the City's urban nature, yet still recognize the importance of human health, including sleep disruption.
 - Account for reasonable expectations regarding noise and vibration during daytime and nighttime hours, and also include absolute noise levels that are intended to protect human health.

Current Thresholds

Construction Noise

Daytime - Increase Above Ambient

- Construction activities lasting more than one day would exceed existing ambient exterior sound levels by 10 dBA or more at a noise-sensitive use.
- Construction activities lasting more than 10 days in a three-month period would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive use.

Nighttime - Increase Above Ambient

- Construction activities would exceed the ambient noise level by 5 dBA at a noise-sensitive use outside of LAMC construction hours (between the hours of 9:00 P.M. and 7:00 A.M. Monday through Friday, before 8:00 A.M. or after 6:00 P.M. on Saturday, or at any time on Sunday).

Construction Vibration

The City utilizes guidance from the Federal Transit Administration (FTA) to assess ground-borne vibration impacts related to potential building damage and human annoyance.

Building Damage

- Project construction activities cause ground-borne vibration levels to exceed 0.5 peak particle velocity (PPV) at the nearest off-site reinforced concrete, steel, or timber building.
- Exceed 0.3 PPV at the nearest off-site engineered concrete and masonry building
- Exceed 0.2 PPV at the nearest off-site non-engineered timber and masonry building
- Exceed 0.12 PPV at buildings extremely susceptible to vibration damage, such as historic buildings

Human Annoyance

- Exceed 72 VdB at off-site sensitive uses, including residential, hotel and theater uses

New Thresholds

Construction Noise

Daytime - Increase Over Ambient

None for daytime construction activities (between 7:00 A.M. and 7:00 P.M. Monday through Friday, and between 8:00 A.M. and 6:00 P.M. on Saturdays)

Daytime - Absolute Threshold

Maximum 80 dBA Leq (8-hour) absolute threshold at sensitive uses (at the property line with outdoor uses or at the exterior of the building), including outdoor public recreational areas

Nighttime - Increase Over Ambient

Maximum 5 dBA increase above the ambient noise level at sensitive uses (between 7:00 P.M. and 7:00 A.M. Monday through Friday, and between 6:00 P.M. and 8:00 A.M. on Saturdays, and anytime on Sundays or national holidays). Certain mat pour activities are exempt from this provision.

Nighttime - Absolute Noise

- Maximum 55 dBA Leq (Equivalent Continuous Sound Pressure Level) for sensitive uses within older buildings that would have operable windows that may be open
- Maximum 65 dBA Leq for sensitive uses with windows closed that are not operable and are single-glazed
- Maximum 70 dBA Leq for sensitive uses that have newer construction (i.e., the structures have been designed to ensure that an interior 45 dBA is obtained with double-paned windows). Certain mat pour activities are exempt from this provision.

Vibration

Daytime - Human Annoyance

No numerical threshold

Nighttime - Human Annoyance

Maximum 0.80 VdB at the exterior of a sensitive use building

Building Damage

Construction activities shall not exceed the following building damage thresholds for the identified structures:

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

Public Process

Director-level Public Hearing. Per State CEQA law, public notice and a hearing is required. The hearing may be held by the Director, the City Planning Commission, or the City Council. The Department of City Planning conducted a Director-level public hearing on December 20, 2023. A 10-day notice was provided to the City's internal environmental and historic resource consultant list, Neighborhood Councils, Interested Parties, and those signed up as Land Use Expeditors, and for News Alerts and Citywide Code Amendments through media communications.

Next Steps

The Director of City Planning will consider the public testimony received, before potentially adopting Updated CEQA Thresholds. Any updated guidance would be publically available on the Department's website at:
<https://planning.lacity.org/project-review/environmental-resources>.

For questions, please email mindy.nguyen@lacity.org.

AMBIENT NOISE MONITORING DATA

Measurement Report

Report Summary

Meter's File Name	LxT_Data.011.s	Computer's File Name	LxT_0005426-20240809 151402-LxT_Data.011.ldbin		
Meter	LxT1 0005426	Firmware	2.404		
User	AC	Location	ST-1		
Job Description	BREA-05.0				
Note					
Start Time	2024-08-09 15:14:02	Duration	0:15:00.0		
End Time	2024-08-09 15:29:02	Run Time	0:15:00.0	Pause Time	0:00:00.0
Pre-Calibration	2024-08-09 12:05:52	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA _{eq}	65.2 dB		
LAE	94.7 dB	SEA	--- dB
EA	331.1 $\mu\text{Pa}^2\text{h}$		
EA8	10.6 mPa^2h		
EA40	53.0 mPa^2h		
LA _{Speak}	87.5 dB	2024-08-09 15:25:12	
LA _{Smax}	69.9 dB	2024-08-09 15:27:17	
LA _{Smin}	60.8 dB	2024-08-09 15:22:54	
LA _{eq}	65.2 dB		
LC _{eq}	75.4 dB	LC _{eq} - LA _{eq}	10.2 dB
LA _l _{eq}	65.8 dB	LA _l _{eq} - LA _{eq}	0.6 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

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

Any Data

A		C		Z	
Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	65.2 dB	--- dB		--- dB	
L _{S(max)}	69.9 dB	--- dB	None	--- dB	None
L _{S(min)}	60.8 dB	--- dB	None	--- dB	None
L _{Peak(max)}	87.5 dB	--- dB	None	--- dB	None

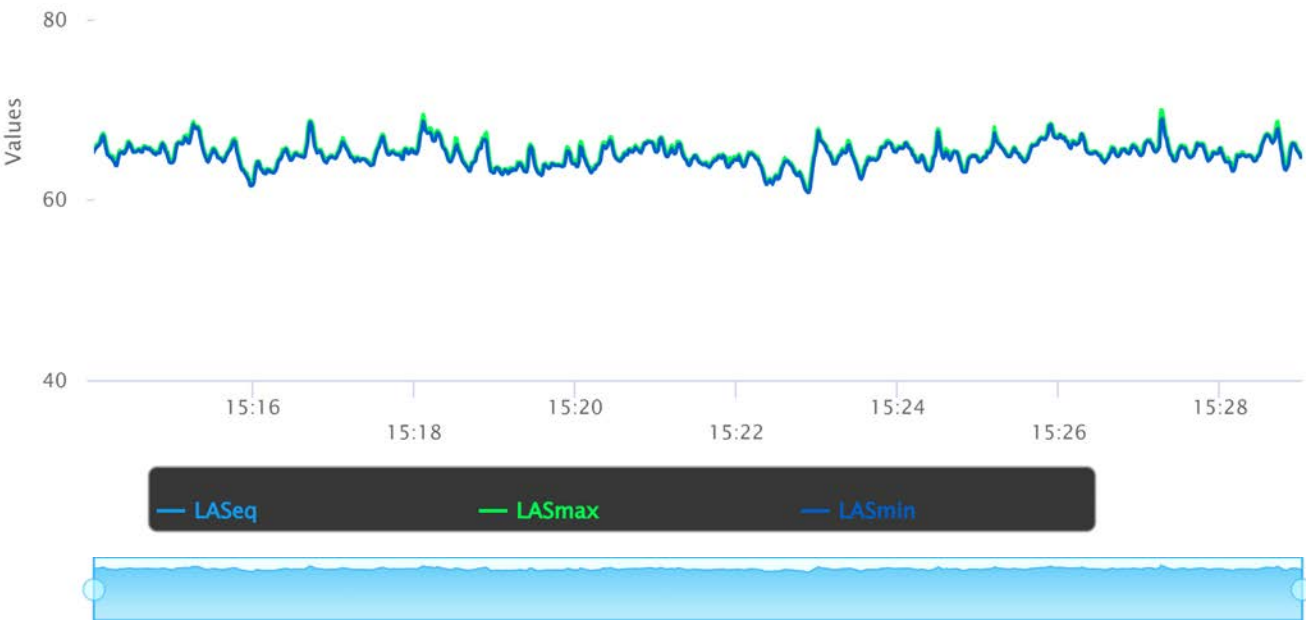
Overloads

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

Statistics

LAS 2.0	67.9 dB
LAS 8.0	66.8 dB
LAS 25.0	65.8 dB
LAS 50.0	65.0 dB
LAS 90.0	63.4 dB
LAS 99.0	61.8 dB

Time History



Measurement Report

Report Summary

Meter's File Name	LxT_Data.009.s	Computer's File Name	LxT_0005426-20240809 142347-LxT_Data.009.ldbin		
Meter	LxT1 0005426	Firmware	2.404		
User	AC	Location	ST-2		
Job Description	BREA-05.0				
Note					
Start Time	2024-08-09 14:23:47	Duration	0:15:00.0		
End Time	2024-08-09 14:38:47	Run Time	0:15:00.0	Pause Time	0:00:00.0
Pre-Calibration	2024-08-09 12:05:52	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA _{eq}	54.0 dB		
LAE	83.5 dB	SEA	--- dB
EA	25.1 µPa²h		
EA8	803.8 µPa²h		
EA40	4.0 mPa²h		
LA _{Speak}	86.8 dB	2024-08-09 14:24:14	
LA _{Smax}	65.5 dB	2024-08-09 14:35:57	
LA _{Smin}	50.4 dB	2024-08-09 14:38:27	
LA _{eq}	54.0 dB		
LC _{eq}	66.4 dB	LC _{eq} - LA _{eq}	12.4 dB
LA _l _{eq}	55.7 dB	LA _l _{eq} - LA _{eq}	1.7 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	L _{DN}	L _{Day}	L _{Night}	
	--- dB	--- dB	0.0 dB	
	L _{DEN}	L _{Day}	L _{Eve}	L _{Night}
	--- dB	--- dB	--- dB	--- dB

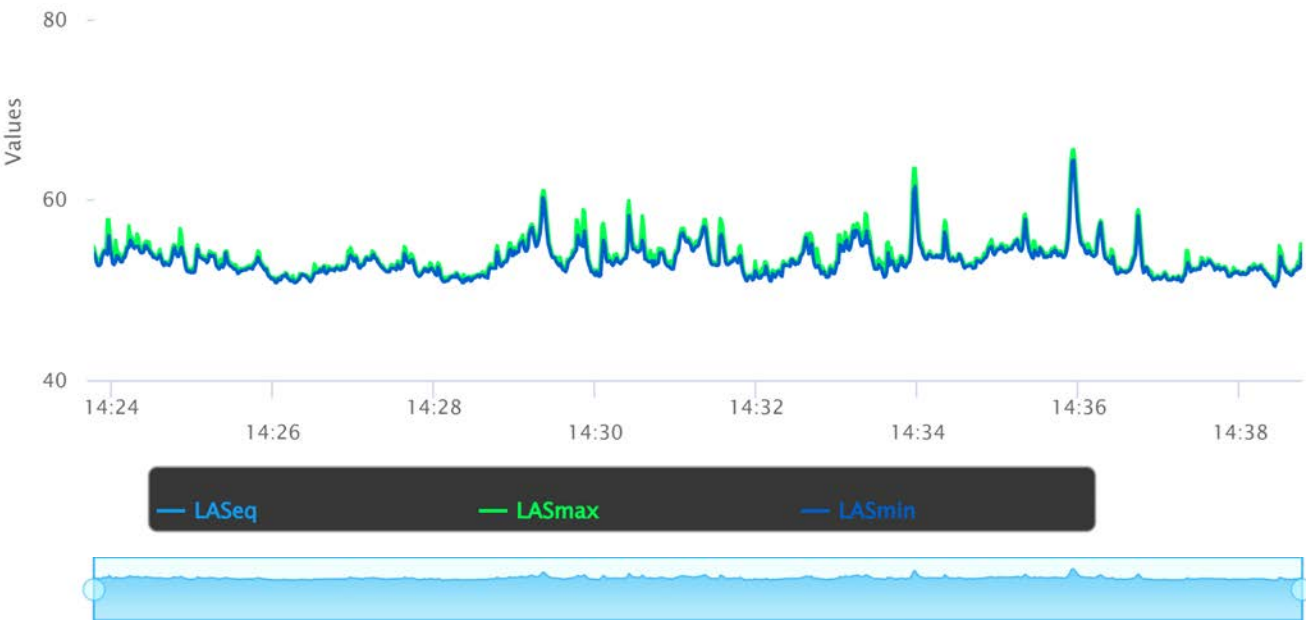
Any Data	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	54.0 dB		--- dB		--- dB	
L _{S(max)}	65.5 dB	2024-08-09 14:35:57	--- dB	None	--- dB	None
L _{S(min)}	50.4 dB	2024-08-09 14:38:27	--- dB	None	--- dB	None
L _{Peak(max)}	86.8 dB	2024-08-09 14:24:14	--- dB	None	--- dB	None

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

Statistics

LAS 2.0	58.2 dB
LAS 8.0	55.9 dB
LAS 25.0	54.3 dB
LAS 50.0	53.2 dB
LAS 90.0	51.5 dB
LAS 99.0	51.0 dB

Time History



Measurement Report

Report Summary

Meter's File Name	LxT_Data.010.s	Computer's File Name	LxT_0005426-20240809 144824-LxT_Data.010.ldbin		
Meter	LxT1 0005426	Firmware	2.404		
User	AC	Location	ST-3		
Job Description	BREA-05.0				
Note					
Start Time	2024-08-09 14:48:24	Duration	0:15:00.0		
End Time	2024-08-09 15:03:24	Run Time	0:15:00.0	Pause Time	0:00:00.0
Pre-Calibration	2024-08-09 12:05:52	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA _{eq}	56.5 dB		
LAE	86.0 dB	SEA	--- dB
EA	44.7 µPa²h		
EA8	1.4 mPa²h		
EA40	7.1 mPa²h		
LA _{Speak}	76.1 dB		2024-08-09 14:48:28
LA _{Smax}	63.1 dB		2024-08-09 15:00:43
LA _{Smin}	52.3 dB		2024-08-09 14:58:06
LA _{eq}	56.5 dB		
LC _{eq}	66.9 dB	LC _{eq} - LA _{eq}	10.4 dB
LA _{Ieq}	57.1 dB	LA _{Ieq} - LA _{eq}	0.6 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

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

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	56.5 dB		--- dB		--- dB	
L _{S(max)}	63.1 dB	2024-08-09 15:00:43	--- dB	None	--- dB	None
L _{S(min)}	52.3 dB	2024-08-09 14:58:06	--- dB	None	--- dB	None
L _{Peak(max)}	76.1 dB	2024-08-09 14:48:28	--- dB	None	--- dB	None

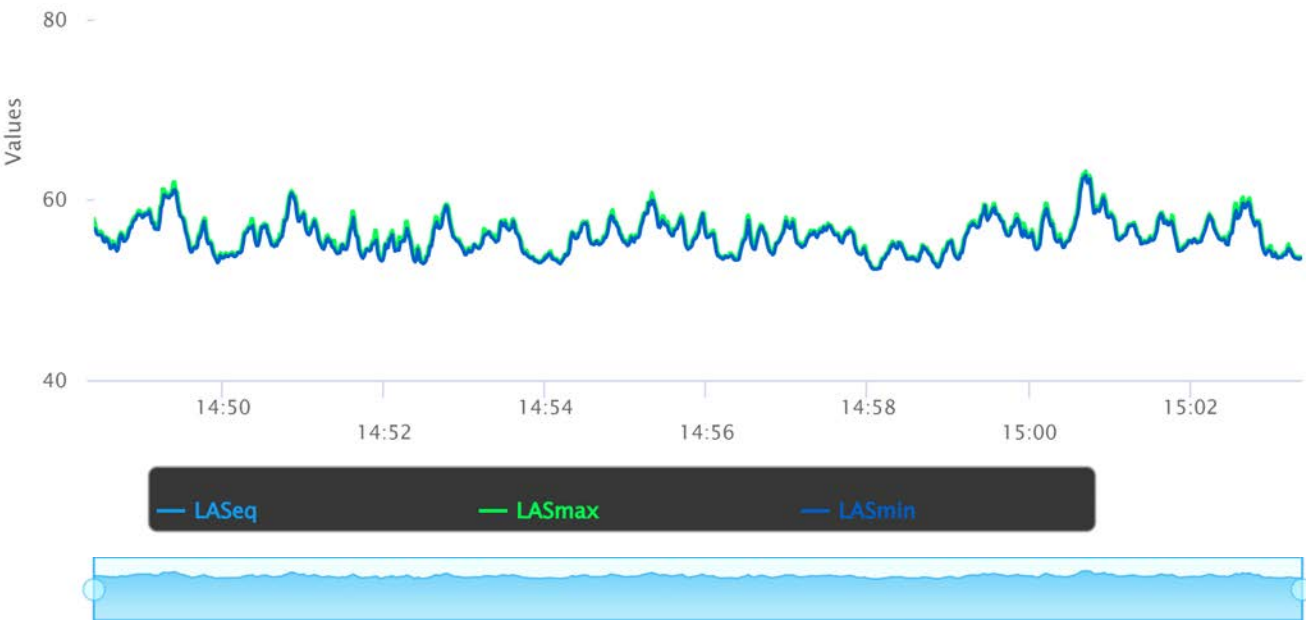
Overloads

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

Statistics

LAS 2.0	60.7 dB
LAS 8.0	58.7 dB
LAS 25.0	57.2 dB
LAS 50.0	55.9 dB
LAS 90.0	53.7 dB
LAS 99.0	52.7 dB

Time History



Measurement Report

Report Summary

Meter's File Name	LxT_Data.008.s	Computer's File Name	LxT_0005426-20240809 140019-LxT_Data.008.ldbin		
Meter	LxT1 0005426	Firmware	2.404		
User	AC	Location	ST-4		
Job Description	BREA-05.0				
Note					
Start Time	2024-08-09 14:00:19	Duration	0:15:08.8		
End Time	2024-08-09 14:16:09	Run Time	0:15:08.8	Pause Time	0:00:00.0
Pre-Calibration	2024-08-09 12:05:52	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA _{eq}	58.3 dB		
LAE	87.9 dB	SEA	--- dB
EA	68.3 $\mu\text{Pa}^2\text{h}$		
EA8	2.2 mPa^2h		
EA40	10.8 mPa^2h		
LA _{Speak}	87.3 dB		2024-08-09 14:02:09
LA _{Smax}	69.3 dB		2024-08-09 14:05:57
LA _{Smin}	53.7 dB		2024-08-09 14:14:45
LA _{eq}	58.3 dB		
LC _{eq}	70.6 dB	LC _{eq} - LA _{eq}	12.3 dB
LA _{Ieq}	60.7 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

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

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L _{eq}	58.3 dB		--- dB		--- dB	
L _{S(max)}	69.3 dB	2024-08-09 14:05:57	--- dB	None	--- dB	None
L _{S(min)}	53.7 dB	2024-08-09 14:14:45	--- dB	None	--- dB	None
L _{Peak(max)}	87.3 dB	2024-08-09 14:02:09	--- dB	None	--- dB	None

Overloads

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

Statistics

LAS 2.0	64.9 dB
LAS 8.0	60.5 dB
LAS 25.0	58.1 dB
LAS 50.0	56.8 dB
LAS 90.0	55.2 dB
LAS 99.0	54.3 dB

Time History



CONSTRUCTION NOISE MODELING

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 08/30/2024
Case Description: BRE A-05.0 Demolition

**** Receptor #1 ****

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

Equipment						
Description	Impact Device	Usage (%)	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
Excavator	No	40		80.7	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
Equipment		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
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
	Total	80.7	81.5	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: 08/30/2024
Case Description: BRE A-05.0 Grading

**** Receptor #1 ****

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

Description	Impact Device	Usage (%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Scraper	No	40		83.6	50.0	0.0
Dozer	No	40		81.7	50.0	0.0
Dozer	No	40		81.7	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															
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
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
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
Total		83.6	83.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Report date: 08/30/2024
Case Description: BREA-05.0 Building Construction

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

Results

D-42

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 08/30/2024
Case Description: BREA-05.0 Paving

**** Receptor #1 ****

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Receptor at 50 ft	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
Pumps	No	50		80.9	50.0	0.0

Results															
Equipment				Noise Limits (dBA)						Noise Limit Exceedance (dBA)					
				Calculated (dBA)		Day		Evening		Night		Day		Evening	
				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
Pumps				80.9	77.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total			80.9	79.5	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: 08/30/2024
Case Description: BREA-05.0 Architectural Coating

**** Receptor #1 ****

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

Description	Impact Device	Usage (%)	Equipment			
			Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Drum Mixer	No	50		80.0	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
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
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	80.0	78.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

BREA-05.0 - Construction Noise Modeling Attenuation Calculations

Levels in dBA Leq

Phase	RCNM Reference			
	Noise Level	Receptor to North	Receptor to East	Receptor to South
	<i>Distance in feet</i>	<i>50</i>	<i>215</i>	<i>425</i>
		<i>235</i>		
Demolition	85.0	72.3	66.4	71.6
Site Prep	85.0	72.3	66.4	71.6
Grading	85.0	72.3	66.4	71.6
	<i>Distance in feet</i>	<i>50</i>	<i>90</i>	<i>240</i>
				<i>300</i>
Building Construction	80.0	74.9	66.4	64.4
Architectural Coating	74.0	68.9	60.4	58.4
	<i>Distance in feet</i>	<i>50</i>	<i>95</i>	<i>250</i>
				<i>100</i>
Paving	80.0	74.4	66.0	74.0

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

BRE-A-05.0 - Vibration Annoyance Attenuation Calculations				
Levels in VdB				
Equipment		Receptor to North	Receptor to East	Receptor to South
<i>Distance in feet</i>	<i>Vibration @ 25 ft</i>	<i>180</i>	<i>400</i>	<i>180</i>
Vibratory Roller	94	68	58	68
Hoe Ram	87	61	51	61
Large Bulldozer	87	61	51	61
Loaded Trucks	86	60	50	60
Jackhammer	79	53	43	53
Small Bulldozer	58	32	22	32

BREA-05.0 - Vibration Damage Attenuation Calculations

Levels, PPV (in/sec)

<i>Distance in feet</i>	Vibration Reference Level	Receptor to North	Receptor to East	Receptor to South
	at 25 feet	<i>70</i>	<i>250</i>	<i>55</i>
Vibratory Roller	0.21	0.045	0.007	0.064
Hoe Ram	0.089	0.019	0.003	0.027
Large Bulldozer	0.089	0.019	0.003	0.027
Loaded Trucks	0.076	0.016	0.002	0.023
Jackhammer	0.035	0.007	0.001	0.011
Small Bulldozer	0.003	0.001	0.000	0.001

TRAFFIC NOISE MODELING

Traffic Noise Calculator: FHWA 77-108																							
Greenbriar EIR (BREA-05.0) Existing Traffic Noise																							
	Output						Inputs														Auto Inputs		
	dBA at 50 feet			Distance to CNEL Contour																			
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	71.9	75.6	76.0	125	269	579	Imperial Hwy	SR-57 SB Ramps	to the West	46620	40	0.0%	94.3%	2.9%	2.8%	75.0%	10.0%	15.0%	6	Soft	50	0.5	68
2	70.8	74.5	74.9	105	227	489	Imperial Hwy	SR-57 SB Ramps	Associated Rd	36120	40	0.0%	94.3%	2.9%	2.8%	75.0%	10.0%	15.0%	6	Soft	50	0.5	68
3	70.8	74.5	74.9	106	228	491	Imperial Hwy	Associated Rd	Castlegate Ln/Placentia Ave	36420	40	0.0%	94.3%	2.9%	2.8%	75.0%	10.0%	15.0%	6	Soft	50	0.5	68
4	70.9	74.6	75.0	107	231	497	Imperial Hwy	Castlegate Ln/Placentia Ave	to the East	37010	40	0.0%	94.3%	2.9%	2.8%	75.0%	10.0%	15.0%	6	Soft	50	0.5	68
5	49.4	53.1	53.5	4	9	19	Greenbriar Ln	Associated Rd	Ravencrest Dr	1160	25	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20
6	46.6	50.3	50.7	3	6	12	Greenbriar Ln	Associated Rd	Project Dwy 1	600	25	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20
7	46.8	50.5	50.9	3	6	12	Greenbriar Ln	Project Dwy 1	Project Dwy 2	630	25	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20
8	67.0	70.7	71.1	59	128	276	E Birch St	Redbay Ave	to the West	26550	35	0.0%	95.0%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44
9	66.8	70.5	70.9	57	123	265	E Birch St	Redbay Ave	Associated Rd	25990	35	0.0%	88.1%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44
10	66.8	70.6	70.9	58	124	268	E Birch St	Associated Rd	to the East	25650	35	0.0%	93.5%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44
11	55.8	59.5	59.9	11	23	49	Aurora Ave	E Birch St	to the North	1320	45	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20
12	47.1	50.8	51.2	3	6	13	Aurora Ave	E Birch St	to the South	680	25	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20
13	47.1	50.8	51.2	3	6	13	Aurora Ave	Project Dwy 2	to the North	680	25	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20
14	53.7	57.4	57.8	8	17	36	Associated Rd	E Birch St	to the North	920	40	0.0%	95.0%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44
15	64.6	68.4	68.7	41	89	191	Associated Rd	E Birch St	Greenbriar Ln	11570	40	0.0%	93.1%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44
16	64.2	67.9	68.3	38	83	178	Associated Rd	Greenbriar Ln	Shopping Ctr Dwy	10940	40	0.0%	85.9%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44
17	64.3	68.0	68.4	39	84	180	Associated Rd	Shopping Ctr Dwy	Imperial Hwy	10800	40	0.0%	90.4%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44
18	63.9	67.6	68.0	37	79	170	Associated Rd	Imperial Hwy	to the South	9890	40	0.0%	90.4%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44
19	50.5	54.2	54.6	5	10	22	Castlegate Ln	Imperial Hwy	to the North	1560	25	0.0%	87.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20
20	64.8	68.5	68.9	42	91	196	Placentia Ave	Imperial Hwy	to the South	9010	45	0.0%	96.0%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44

Traffic Noise Calculator: FHWA 77-108																									
Greenbriar EIR (BREA-05.0) Opening Year Traffic Noise																									
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	72.2	75.9	76.2	130	281	606	Imperial Hwy	SR-57 SB Ramps	to the West	49840	40	0.0%	94.3%	2.9%	2.8%	75.0%	10.0%	15.0%	6	Soft	50	0.5	68		
2	71.1	74.9	75.2	112	241	518	Imperial Hwy	SR-57 SB Ramps	Associated Rd	39450	40	0.0%	94.3%	2.9%	2.8%	75.0%	10.0%	15.0%	6	Soft	50	0.5	68		
3	71.2	74.9	75.3	112	242	521	Imperial Hwy	Associated Rd	Castlegate Ln/Placentia Ave	39750	40	0.0%	94.3%	2.9%	2.8%	75.0%	10.0%	15.0%	6	Soft	50	0.5	68		
4	71.2	74.9	75.3	113	243	523	Imperial Hwy	Castlegate Ln/Placentia Ave	to the East	39960	40	0.0%	94.3%	2.9%	2.8%	75.0%	10.0%	15.0%	6	Soft	50	0.5	68		
5	49.6	53.3	53.7	4	9	19	Greenbriar Ln	Associated Rd	Ravencrest Dr	1210	25	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20		
6	46.6	50.3	50.7	3	6	12	Greenbriar Ln	Associated Rd	Project Dwy 1	600	25	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20		
7	46.9	50.6	50.9	3	6	12	Greenbriar Ln	Project Dwy 1	Project Dwy 2	640	25	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20		
8	67.2	70.9	71.3	61	132	284	E Birch St	Redbay Ave	to the West	27730	35	0.0%	95.0%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44		
9	67.0	70.7	71.1	59	128	275	E Birch St	Redbay Ave	Associated Rd	27510	35	0.0%	88.1%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44		
10	67.2	70.9	71.2	61	130	281	E Birch St	Associated Rd	to the East	27500	35	0.0%	93.5%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44		
11	55.9	59.6	60.0	11	23	50	Aurora Ave	E Birch St	to the North	1350	45	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20		
12	47.2	50.9	51.3	3	6	13	Aurora Ave	E Birch St	to the South	690	25	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20		
13	47.2	50.9	51.3	3	6	13	Aurora Ave	Project Dwy 2	to the North	690	25	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20		
14	53.7	57.4	57.8	8	17	36	Associated Rd	E Birch St	to the North	920	40	0.0%	95.0%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44		
15	64.9	68.7	69.0	43	93	200	Associated Rd	E Birch St	Greenbriar Ln	12380	40	0.0%	93.1%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44		
16	64.4	68.1	68.5	39	85	183	Associated Rd	Greenbriar Ln	Shopping Ctr Dwy	11410	40	0.0%	85.9%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44		
17	64.7	68.4	68.8	42	90	194	Associated Rd	Shopping Ctr Dwy	Imperial Hwy	12030	40	0.0%	90.4%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44		
18	64.1	67.9	68.2	38	82	177	Associated Rd	Imperial Hwy	to the South	10490	40	0.0%	90.4%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44		
19	50.6	54.3	54.6	5	10	22	Castlegate Ln	Imperial Hwy	to the North	1580	25	0.0%	87.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20		
20	65.1	68.8	69.2	44	95	205	Placentia Ave	Imperial Hwy	to the South	9610	45	0.0%	96.0%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44		

Traffic Noise Calculator: FHWA 77-108																							
Greenbriar EIR (BREA-05.0) Opening YearPlus Project Traffic Noise																							
ID	Output					Inputs													Auto Inputs				
	dBA at 50 feet			Distance to CNEL Contour																			
	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	72.3	76.0	76.4	133	286	617	Imperial Hwy	SR-57 SB Ramps	to the West	51250	40	0.0%	94.3%	2.9%	2.8%	75.0%	10.0%	15.0%	6	Soft	50	0.5	68
2	71.2	74.9	75.3	112	242	522	Imperial Hwy	SR-57 SB Ramps	Associated Rd	39850	40	0.0%	94.3%	2.9%	2.8%	75.0%	10.0%	15.0%	6	Soft	50	0.5	68
3	71.2	74.9	75.3	113	242	522	Imperial Hwy	Associated Rd	Castlegate Ln/Placentia Ave	39900	40	0.0%	94.3%	2.9%	2.8%	75.0%	10.0%	15.0%	6	Soft	50	0.5	68
4	71.2	74.9	75.3	113	243	524	Imperial Hwy	Castlegate Ln/Placentia Ave	to the East	40060	40	0.0%	94.3%	2.9%	2.8%	75.0%	10.0%	15.0%	6	Soft	50	0.5	68
5	49.6	53.3	53.7	4	9	19	Greenbriar Ln	Associated Rd	Ravencrest Dr	1210	25	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20
6	50.3	54.0	54.3	5	10	21	Greenbriar Ln	Associated Rd	Project Dwy 1	1400	25	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20
7	48.5	52.2	52.6	3	7	16	Greenbriar Ln	Project Dwy 1	Project Dwy 2	930	25	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20
8	67.3	71.0	71.4	62	133	286	E Birch St	Redbay Ave	to the West	28040	35	0.0%	95.0%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44
9	67.0	70.8	71.1	60	128	276	E Birch St	Redbay Ave	Associated Rd	27740	35	0.0%	88.1%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44
10	67.2	70.9	71.3	61	131	282	E Birch St	Associated Rd	to the East	27600	35	0.0%	93.5%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44
11	55.9	59.6	60.0	11	23	50	Aurora Ave	E Birch St	to the North	1350	45	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20
12	48.1	51.8	52.2	3	7	15	Aurora Ave	E Birch St	to the South	850	25	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20
13	47.2	50.9	51.3	3	6	13	Aurora Ave	Project Dwy 2	to the North	690	25	0.0%	96.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20
14	53.7	57.4	57.8	8	17	36	Associated Rd	E Birch St	to the North	920	40	0.0%	95.0%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44
15	65.0	68.7	69.1	44	94	202	Associated Rd	E Birch St	Greenbriar Ln	12570	40	0.0%	93.1%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44
16	64.7	68.4	68.8	41	89	192	Associated Rd	Greenbriar Ln	Shopping Ctr Dwy	12260	40	0.0%	85.9%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44
17	65.0	68.7	69.1	44	94	203	Associated Rd	Shopping Ctr Dwy	Imperial Hwy	12900	40	0.0%	90.4%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44
18	64.2	67.9	68.3	38	83	178	Associated Rd	Imperial Hwy	to the South	10590	40	0.0%	90.4%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44
19	50.6	54.3	54.6	5	10	22	Castlegate Ln	Imperial Hwy	to the North	1580	25	0.0%	87.0%	1.5%	1.0%	75.0%	10.0%	15.0%	2	Soft	50	0.5	20
20	65.1	68.8	69.2	44	95	205	Placentia Ave	Imperial Hwy	to the South	9660	45	0.0%	96.0%	2.5%	1.5%	75.0%	10.0%	15.0%	4	Soft	50	0.5	44

