# NOISE

Most recently amended on January 12, 2010 by resolution 10-R-12725. Originally adopted on November 4, 1975, by Resolution No. 75-R-5345.

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## Overview

The overarching objective of the Noise Element is to ensure that Beverly Hills residents will be protected from excessive noise. The information contained in this document provides a framework to achieve compatible land uses and provides baseline noise levels and sources of noise to aide in enforcement of noise controls.

Sound is created when objects vibrate and produce pressure variations that move rapidly outward into the surrounding air. The main characteristics of these air pressure waves are amplitude, which we experience as a sound's "loudness," and frequency, which we experience as a sound's "pitch." The standard unit of sound amplitude is the decibel (dB), which is a measure of the physical magnitude of the pressure variations relative to the human threshold of perception. The human ear's sensitivity to sound amplitude is frequency-dependent and thus a modification is usually made to the decibel to account for this; A-weighted decibels (dBA) incorporate human sensitivity to a sound's frequency as well as its amplitude.

Table N1 on the following page provides representative environmental noise levels for a number of outdoor and indoor activities.

**Table N1 - Representative Environmental Noise Levels**

| Common Outdoor Activities | Noise Level (dBA) | Common Indoor Activities |
|---|---|---|
| | —110— | Rock Band |
| Jet Fly-over at 100 feet | | |
| | —100— | |
| Gas Lawnmower at 3 feet | | |
| | —90— | |
| | | Food Blender at 3 feet |
| Diesel Truck going 50 mph at 50 feet | —80— | Garbage Disposal at 3 feet |
| Noisy Urban Area During Daytime | | |
| Gas Lawnmower at 100 feet | —70— | Vacuum Cleaner at 10 feet |
| Commercial Area | | Normal Speech at 3 feet |
| Heavy Traffic at 300 feet | —60— | |
| | | Large Business Office |
| Quiet Urban Area During Daytime | —50— | Dishwasher in Next Room |
| | | |
| Quiet Urban Area During Nighttime | —40— | Theater, Large Conference Room (background) |
| Quiet Suburban Area During Nighttime | | |
| | —30— | Library |
| Quiet Rural Area During Nighttime | | Bedroom at Night, Concert Hall (background) |
| | —20— | |
| | | Broadcast/Recording Studio |
| | —10— | |
| | | |
| Threshold of Human Hearing | —0— | Threshold of Human Hearing |

SOURCE: California Department of Transportation 1998

***Noise Terminology***

**dBA**—*Measurement unit for "a-weighted decibels," which are commonly used for measuring environmental and industrial noise and the potential hearing damage associated noise health effects.*

**Equivalent Energy Noise Level ($L_{eq}$)**—*The average acoustic energy content of noise for a stated period of time. Thus, the $L_{eq}$ of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.*

**Community Noise Equivalent Level (CNEL)**—*A 24-hour average $L_{eq}$ with a 10 dBA "weighting" added to noise during the hours of 10:00 P.M. to 7:00 A.M. and an additional 5 dBA weighting during the hours of 7:00 P.M. to 10:00 P.M. to account for noise sensitivity in the evening and nighttime.*

Noise environments and consequences of human activities are usually well represented by median noise levels during the day, night, or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 55 dBA, moderate in the 55 to 70 dBA range, and high above 70 dBA.

### Transportation Noise Sources

The most common sources of noise in Beverly Hills are transportation related, including automobiles, trucks, motorcycles, and aircraft. Motor vehicle noise is of concern, because it is characterized by a high number of individual events, which often create a sustained noise level, and because of its proximity to areas sensitive to noise exposure.

### Major and Minor Arterial Roadways

The major source of traffic noise is generated on major streets. Major streets in Beverly Hills that have high noise readings include Coldwater Canyon; Beverly and Doheny Drives; and La Cienega, Sunset, Santa Monica, Wilshire, and Olympic Boulevards.

### Non-transportation Noise Sources (Stationary Noise Sources)

There are many stationary noise sources within Beverly Hills. These stationary noise sources include restaurant, bar and entertainment establishments, operation of mechanical equipment, and active recreational facilities.

Mechanical equipment in residential areas generates noise also. Residential noise generators includes functioning heating and cooling equipment, and use of landscape maintenance equipment such as gasoline-powered lawnmowers and gas-powered leaf blowers.

Commercial uses generate noise through the operation of rooftop heating and cooling equipment as well, and other operational activities such as trash deposit and collection in alleys, noise emanating from within businesses, and deliveries.

Outdoor sports facilities that attract large numbers of spectators, such as high school football

fields, can produce noise that affects nearby receptors. The level of noise produced depends on the size of the facility and the attendance for a specific event.

### Noise-Sensitive Receptors

Sensitive land uses are those uses that have associated human activities that may be subject to stress or significant interference from noise. Potentially sensitive land uses in Beverly Hills include residences (including residences for the elderly), schools, churches, and libraries.


Construction is a temporary noise source

### Community Noise Contours

Existing roadway noise contours are shown in Figure N1. Noise contours represent lines of equal noise exposure, just as the contour lines on a topographic map are lines of equal elevation.

Santa Monica, Sunset, Wilshire, La Cienega, and Olympic Boulevards, and Coldwater Canyon Drive are the greatest sources of roadway noise within the City. Existing residential uses in close proximity to these roadway segments could be exposed to high noise levels on a regular basis; however, as new residential projects are proposed near major roadways or other potential noise sources, future noise levels will be evaluated and noise mitigation strategies required as appropriate to meet the City's noise standards.

### Noise Attenuation Methods.

Noise mitigation measures will be applicable in areas impacted by noise as identified in Figure N1. As new residential projects are proposed, future noise levels will be evaluated and adjusted as necessary.

Building interior noise levels can be reduced by protecting the receiver with acoustical structures, enclosures, or construction techniques. Windows and doors are the most important paths for sound to enter a structure. Use of sound insulating doors and double paned windows can provide substantial reductions of interior noise levels. Because these features have little effect in reducing noise when they are left open, installation of air conditioning for adequate ventilation may be required.

Noise exposure criteria should be incorporated into land use planning to reduce future noise and land use incompatibilities. This is achieved by specifying acceptable noise exposure ranges for various land uses throughout the City. These criteria are designed to integrate noise considerations into land use planning to prevent noise/land use conflicts.

Stationary noise sources such as retail/entertainment establishments can be controlled through the zoning code, and may include site planning requirements and regulation of hours and deliveries. Beverly Hills Municipal Code contains noise regulations and standards (Chapter 1) that limit unnecessary, excessive, and annoying noise in the City including noise generated by construction, machinery, motor vehicles, and animals.

The noise/land use compatibility guidelines presented in Appendix B present broad ranges of compatibility, and are intended to be flexible enough to apply to a wide range of projects and environments. In no case would it be desirable for any land use to have noise exceeding the highest "normally compatible" noise level shown. These guidelines are intended to be used as one of the many factors used in the land use planning process.

Additionally, The State of California requires that interior noise levels in multi-family residential uses not exceed 45 Ldn (day-night noise level). This standard is commonly used as an interior standard for all residential uses, but it is only required of multi-family residential buildings under the California Administrative Code, Title 24, Part 2.

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# EXISTING ROADWAY NOISE CONTOURS

## Beverly Hills General Plan

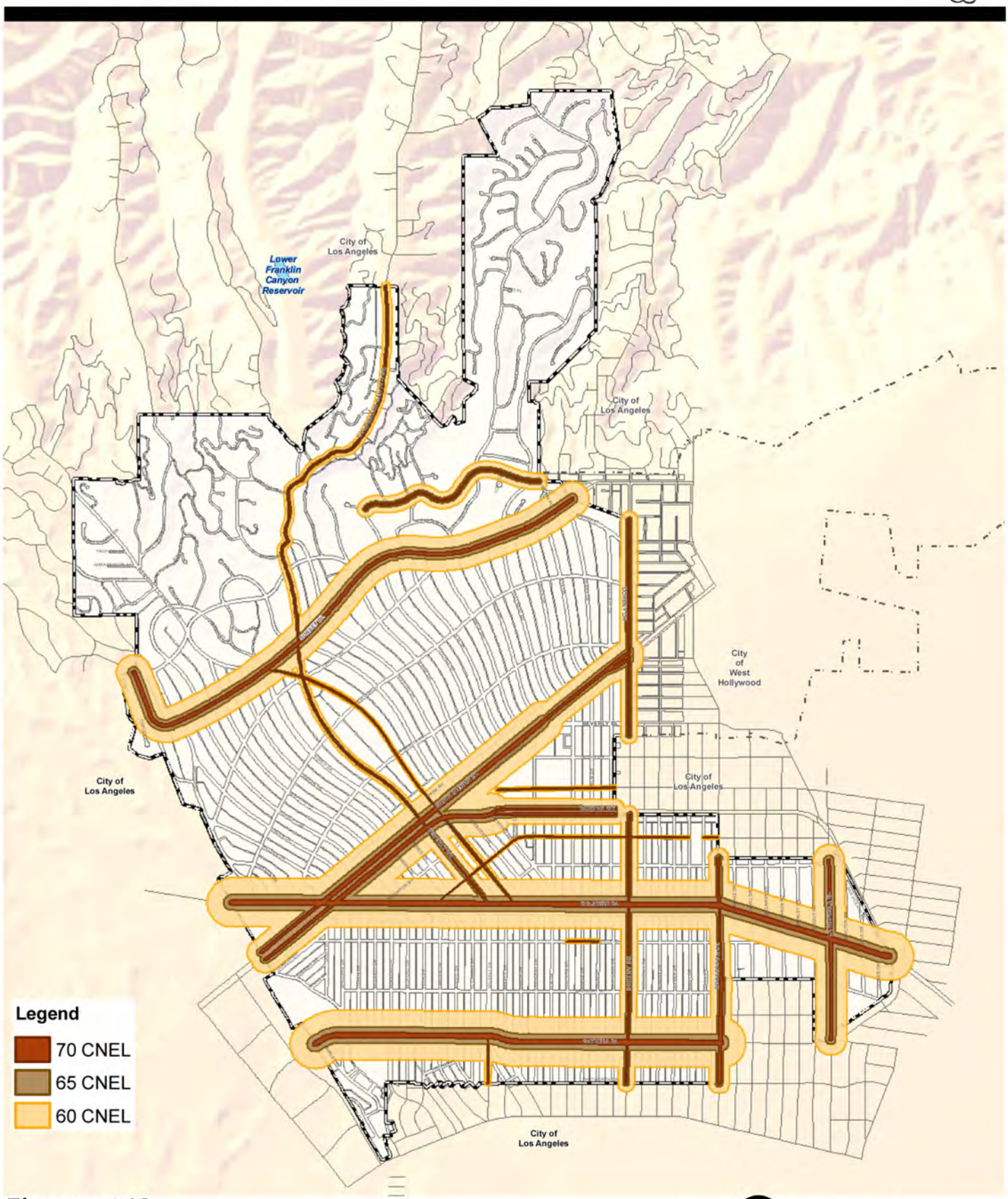


Figure N1

Source: SCAG & PBS&J, August 2008.

0 900 1,800 3,600 Feet

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## Goals and Policies

**N 1 Land Use Conflicts.** Minimize land use conflicts between various noise sources and other human activities.

| | |
|---|---|
| N 1.1 | **Land Use Compatibility Guidelines.** Revise the noise regulations of the Municipal Code to eliminate current ambient noise level standards in residential and commercial areas and replace them with Land Use Noise Compatibility Matrix (Appendix B), to govern acceptable levels of noise for specific land uses and provide a baseline for mitigating land uses that exceed acceptable noise levels. (Imp. 2.1) |
| N 1.2 | **Noise between Adjacent Uses.** Consider developing standards for new high-density residential development that adequately minimize noise between adjacent units within the development and between the development and adjacent buildings through the use of design features and building materials such as orientation, window insulation, common wall separation, common floor/ceilings separation. (Imp. 1.3, 2.1, 2.2) |
| N 1.3 | **Limit Hours of Commercial and Entertainment Operations.** Limit hours of commercial and entertainment operations adjacent to residential neighborhoods and other noise-sensitive receptors in order to minimize exposure to excessive noise. (Imp. 1.3, 2.1, 2.2) |
| N 1.4 | **Limit Hours of Truck Deliveries.** Limit the hours of truck deliveries to commercial uses abutting residential neighborhoods and other noise-sensitive receptors in order to minimize exposure to excessive noise, unless there is no feasible alternative or there are overriding transportation benefits by scheduling deliveries at other hours. (Imp. 1.3, 2.1, 2.2) |

## Goals and Policies

N 1.5 **Noise Mitigation Measures.** Require noise mitigation measures for noise-sensitive receptors when a significant noise impact is identified. A significant noise impact occurs when there is an increase in CNEL, as shown in the table below. (Imp. 1.3, 2.1, 2.2)

| CNEL (dBA) | dBA Increase |
|---|---|
| 55 | 3 |
| 60 | 2 |
| 65 | 1 |
| 70 | 1 |
| Over 75 | 1 |

N 1.6 **Construction.** In Beverly Hills, it is against the law to operate equipment or perform any outside construction or repair work on any building, structure, pneumatic hammer, derrick, steam or electric hoist, or other construction type devices, between the hours of 6:00 P.M. of one day and 8:00 A.M. of the next day, or at any time on any public holiday so as to cause discomfort or annoyance in a residential zone, unless beforehand a permit therefore has been obtained. (N 2.2.4, pg N-2)

**N 2 Motor Vehicles.** Minimized motor vehicle traffic noise impacts on sensitive noise receptors

N 2.1 **Sensitive Land Uses Adjacent to Heavy Arterials.** Require that the design of new residential or other new noise sensitive land uses within the 60 dBA and 65 dBA CNEL (and higher) roadway contours demonstrate that the project will meet interior and exterior noise standards. Require the use of interior noise insulation, double paned windows, or other noise mitigation measures, as appropriate, to achieve required standards. (Imp. 1.3, 2.1, 2.2)

## Goals and Policies

N 2.2 **State Motor Vehicle Noise Standards.** Encourage the enforcement of State Motor Vehicle noise standards for cars, trucks, and motorcycles through coordination with the California Highway Patrol and Beverly Hills Police Department. (Imp. 7.1, 7.2)

N 2.3 **Limit Cut-Through Traffic.** Continue Efforts to Discourage Traffic on Residential Streets. (N 2.5.1, pg N-6)

**N 3 Non-Transportation Noise.** Minimized non-transportation related noise impacts on sensitive noise receptors.

N 3.1 **Protection from Stationary Noise Sources.** Continue to enforce interior and exterior noise standards to ensure that sensitive noise receptors are not exposed to excessive noise levels from stationary noise sources such as machinery, equipment, fans, and air conditioning equipment. (Imp. 1.3, 2.1, 2.2, 5.3)

N 3.2 **Regulation of Sound-amplifying Equipment.** Continue to regulate the use of sound-amplifying equipment. (Imp. 1.3, 2.1, 2.2, 5.3)

**N 4 Construction Noise.** Minimize excessive construction-related noise.

N 4.1 **Enforce Hours of Construction Activity.** Continue to enforce restrictions on hours of construction activity to minimize the impact of noise and vibration from trucks, heavy drilling equipment, and other heavy machinery on adjacent noise-sensitive receptors, particularly in and near residential areas. (Imp. 5.3)

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## Amendments

| Date | Resolution | Description |
|---|---|---|
| November 4, 1975 | 75-R-5345 | Adoption of element |
| January 12, 2010 | 10-R-12725 | Broad range of amendments updating the element to include local desires and State requirements |

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