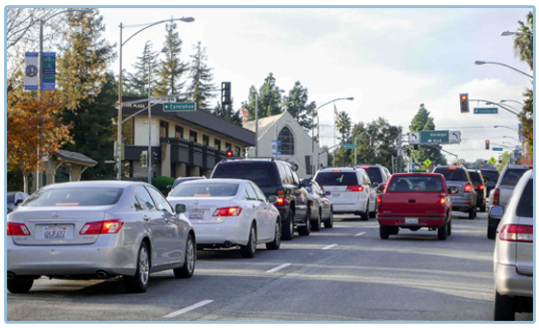
Chapter 7
Noise Element



7.0

NOISE ELEMENT

7.1 Introduction

The quality of life in a city can be affected by the level of noise experienced by those who live, work, and recreate there. The Noise Element of the City's General Plan is intended to identify noise-sensitive land uses and noise sources, define areas of noise impacts, and establish policies and programs to protect the community from excessive noise and to reduce negative impacts from those noise sources.

7.2 Noise Terminology

Noise is generally defined as unwanted sound. Sound is technically described in terms of the loudness (amplitude) and frequency (pitch) of the sound. The standard unit of measurement for sound is the decibel (dB). Because humans do not perceive all frequencies equally well, measured sound levels at certain frequencies are weighted to correspond to the sensitivity of the human ear. This frequency weighting is known as A-weighting, and sound levels that are adjusted in this way are given in units of A-weighted decibels (dBA). Table NE-1 describes typical A-weighted noise levels for various noise sources.

Noise in our daily environment fluctuates over time. Some fluctuations are minor, while some are substantial. Some noise levels occur in regular patterns, while others are random. Some noise levels fluctuate rapidly, while others fluctuate slowly. Some noise levels vary widely, while others are relatively constant. Various noise descriptors, which are described below, have been developed to describe time-varying noise levels.

Equivalent Sound Level (L_{eq}): L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level that, in a stated period, would contain the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour A-

weighted equivalent sound level ($L_{eq[h]}$) is the energy average of the A-weighted sound levels occurring during a 1-hour period. It is the basis for the noise abatement criteria (NAC) used by Caltrans and the Federal Highway Administration (FHWA).

Table NE-1. Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band, concert
Jet fly-over at 1,000 ft		
	100	
Gas lawn mower at 3 ft		
	90	
Diesel truck at 50 ft at 50 mph		Food blender at 3 ft
	80	Garbage disposal at 3 ft
Noisy urban area, daytime		
Gas lawn mower, 100 ft	70	Vacuum cleaner at 10 ft
Commercial area		Normal speech at 3 ft
Heavy traffic at 300 ft	60	
		Large business office
Quiet urban daytime	50	Dishwasher next room
Quiet urban night-time	40	Theater, large conference room (background)
Quiet suburban night-time		
	30	Library
Quiet rural night-time		Bedroom at night
	20	
		Broadcast/recording studio
	10	
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 2008

Community Noise Equivalent Level (CNEL): CNEL is an average sound level during a 24-hour day. CNEL is a noise measurement scale that accounts for noise source, distance, single event duration, single event occurrence, frequency, and time of day. Human reaction to sound between 7:00 p.m. and 10:00 p.m. is as if the sound were actually 5 dBA higher than if it occurred between 7:00 a.m. and 7:00 p.m. From 10:00 p.m. to 7:00 a.m., humans perceive sound as if it were 10 dBA higher due to the lower background level. Hence, the CNEL is obtained

by adding an additional 5 dBA to sound levels in the evening, between 7:00 p.m. and 10:00 p.m., and 10 dBA to sound levels in the night before 7:00 a.m. and after 10:00 p.m. Because CNEL accounts for human sensitivity to sound, the CNEL 24-hour figure is always a higher number than the actual 24-hour average.

Day-Night Level (L_{dn}): L_{dn} is also an average sound level during a 24-hour day. The difference between CNEL and L_{dn} is that CNEL considers the 24-hour day divided into three periods, while L_{dn} uses two periods. L_{dn} is obtained by adding an additional 10 dBA to sound levels in the evening from 10:00 p.m. to 7:00 a.m. The two measurements are very close and are generally accepted as equivalent in community noise studies. L_{dn} is the measure used by the U. S. Environmental Protection Agency for a community noise descriptor, while CNEL is commonly used in California.

The nature of decibel scales is such that individual decibel ratings for different noise sources cannot be added directly to produce the sound level for the combined noise source. Instead, the combined noise level produced by multiple noise sources is calculated using logarithmic summation. For example, if one bulldozer produces a noise level of 80 dBA, two bulldozers would generate a combined noise level of 83 dBA. For another example, assume that a house is located at the intersection of two streets. If the traffic on the heavily traveled street (by itself) generated 60 dBA and the traffic on the lightly traveled street (by itself) generated 50 dBA, the combined noise level caused by traffic on both streets would be 60.4 dBA.

People generally perceive a 10-dBA increase in a noise source as a doubling of loudness. For example, an average person would perceive a 70 dBA sound level as being twice as loud as a 60 dBA sound. People generally cannot detect differences of 1 to 2 dBA between noise levels of a similar nature (e.g., an increase in traffic noise compared to existing traffic noise). However, under ideal listening conditions, some people can detect differences of 2 or 3 dBA. Under normal listening conditions, most people would likely perceive a 5 dBA change in sounds of a similar nature. Note that when the new sound is of a different nature than the background sound (e.g., backup alarms compared to quiet residential sounds), most people can detect changes as low as 1 dBA.

When distance is the only factor considered, sound levels from isolated point sources of noise typically decrease by about 6 dBA for every doubling of distance from the noise source. When the noise source is a continuous line (e.g., vehicle traffic on a highway), sound levels decrease by about 3 dBA for every doubling of distance. In traffic studies, an attenuation rate of 4.5 dBA per doubling of distance is often used when the roadway is at ground level and the intervening ground is effective in absorbing sound (e.g., ground vegetation, scattered trees, and clumps of bushes). When the roadway is elevated, 3 dBA of noise attenuation per doubling of distance is used because the sound-absorbing effects of the intervening ground are limited.

Noise levels can also be affected by several factors other than the distance from the noise source. Topographic features and structural barriers that absorb, reflect, or scatter sound waves can affect the reduction of noise levels. Atmospheric conditions (e.g., wind speed and direction, humidity levels, and temperatures) can also affect the degree to which sound is attenuated over distance. As a result, the existing noise environment can be highly variable depending on local conditions.

Noise-sensitive land uses are generally defined as locations where the presence of noise could adversely affect the use of land. These typically include residences, schools, hospitals, libraries, golf courses, and passive recreation sites.

7.3 Setting

Predominant land uses in La Cañada Flintridge include varying densities of residential development (primarily low-density single-family), varying intensities and types of businesses and commercial development (primarily low-scale retail, service, and office), public and private schools and academies, churches, government facilities, open space, trails, recreation venues, and the NASA Jet Propulsion Laboratory (JPL). Traffic noise from the Interstate (I) 210 Freeway, which traverses the City, has the largest noise impact on the community, although the State Route (SR) 2 Freeway and Foothill Boulevard also contribute to the noise environment of La Cañada Flintridge.

The locations, types, and densities and intensities of land uses, in conjunction with noise from transportation-related and other noise sources, create the ambient noise conditions, or setting, of La Cañada Flintridge. Noise-sensitive receivers within the City include existing residential land uses located throughout the City; schools such as Palm Crest Elementary, Flintridge Montessori, and the Foothill School; and other noise-sensitive land uses such as libraries and recreation areas. Existing Noise Conditions

The following section provides an overview of existing and future noise levels and descriptions of major noise sources located within the City. These noise conditions form the basis for goals, objectives, policies, and programs to mitigate undesirable levels of noise. Noise sources are categorized and described as transportation related and non-transportation related.

7.3.1 Existing Conditions

Existing noise conditions within La Cañada Flintridge are characteristic of most any city. Noise sources include transportation noise sources, such as vehicles on local roadways and freeways, and aircraft flyovers. Community noise sources, such as landscaping activities, car alarms, barking dogs, and others, occur throughout the City. Specific noise sources are discussed in more detail below.

Existing noise levels at representative locations throughout the City were quantified on November 11, 2009. Table NE-2, below, shows noise data gathered. Figure NE-1 shows the location of noise measurements taken in the City.

Table NE-2. Typical A-Weighted Noise Levels in Representative Locations in La Cañada Flintridge

					Measurement Results (dBA)					
Site ID	**Measurement Location**	**Start Time[1]**	**Duration (mm:ss)**	**Noise Sources**	**L_{eq}**	**L_{max}**	**L_{min}**	**L90**	**L50**	**L10**
ST-1	626 Foothill Boulevard	8:45 a.m.	15:00	Traffic along Foothill Boulevard	63.8	79.5	50.4	53.4	59.7	66.6
ST-2	140 Foothill Boulevard	9:30 a.m.	15:00	Traffic along Foothill Boulevard, children playing, landscaping activities	59.3	73.1	50.3	53.8	57.2	62.2
ST-3	4310 Chevy Chase Drive	10:30 a.m.	15:00	Traffic along Chevy Chase Drive and Descanso Drive, periodic dog barking	65.4	86.0	42.5	52.1	58.1	67.6
ST-4	265 Berkshire Place	11:05 a.m.	15:00	Traffic along I-210	63.2	72.6	52.4	60.6	62.4	65.1
ST-5	4625 Oak Grove Drive	12:45 p.m.	15:00	Traffic along I-210 and Oak Grove Drive	51.9	69.6	46.1	47.2	49.4	53.6
ST-6	1010 Salisbury Court	1:20 p.m.	15:00	Traffic along I-210	62.4	74.8	57.8	60.3	61.8	63.3
ST-7	Glenola Park	2:00 p.m.	15:00	Traffic along Angeles Crest Highway, construction across the street	58.6	72.4	40.5	44.8	55.1	61.5
ST-8	5025 Palm Crest Drive	2:45 p.m.	15:00	Limited traffic, with traffic on I-210 slightly audible	51.6	71.2	40.2	41.4	43.3	54.4

[1] Measurements taken November 11, 2009, by ICF International noise staff.

7.3.2 Projected Transportation-Related Noise Sources

Traffic noise was evaluated using the FHWA Highway Traffic Noise Prediction Model (Federal Highway Administration FHWA-RD-77-108, 1978) and traffic data located in the Project Traffic Impact Analysis (TIA). The model uses the number of daily vehicles (average daily traffic [ADT]), vehicle speed, the percentage of traffic from medium and heavy trucks, and the day, evening, and night distribution for the calculation of predicted traffic noise levels. The I-210 and SR-2 freeways were analyzed based on the percentage for trucks (both medium and heavy) provided by the Caltrans website. All other roadways were assumed to have three percent trucks (volumes are based on the FHWA Traffic Noise Model [TNM] lookup tables).

7.3.2.1 Freeways

The primary source of noise in La Cañada Flintridge is from roadway traffic on the I-210 and SR-2 freeways, which traverse the City. Variables such as traffic volume, traffic flow, speed of traffic, road surface, and type of traffic (e.g., tractor trailers versus passenger vehicles) affect noise levels from these roadways within the City. Average daily traffic (ADT) on I-210 through La Cañada Flintridge varies from 107,000 to 121,000 vehicles. On SR-2, ADT south of I-210 is 110,000 vehicles; north of I-210 (Angeles Crest Highway), ADT drops to 12,800 vehicles.

When the segment of I-210 through the La Cañada Flintridge was constructed in the 1970s, it divided existing residential neighborhoods. As a result, many homes within the City abut the I-210 right-of-way and are impacted by unacceptable levels of noise. The City initiated a process, at the request of local residents, to evaluate I-210 noise impacts. Noise measurements were conducted adjacent to I-210 through La Cañada Flintridge as part of the Caltrans *Noise Barrier Scope Summary Report* (NBSSR) (Parsons Transportation Group, Inc. 2007). According to the NBSSR, existing peak-hour noise levels measured at land uses adjacent to the I-210 right-of-way ranged from 59 to 81 dBA (L_{eq}). The study found that existing freeway traffic noise levels in many locations along the freeway exceed the noise abatement criteria established by FHWA, Caltrans, and the Los Angeles Metropolitan Transportation Authority (Metro).

Residential street divided by construction of I-210

Legend
City of La Cañada Flintridge
Noise Measurement Locations
STATE HWY-2
ST-8
ST-7
FOOTHILL BLVD
2
RAMP
ST-6
VERDUGO BLVD
210
ST-1
COULD AVE
ST-3
ST-5
I-210
ST-2
BERKSHIRE AVE
BERKSHIRE PL
CHEVY CHASE DR
ST-4
OAK GROVE DR
HIGHLAND DR
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Source : ESRI USA Imagery (5/2006; 0.5m)

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NE-1
Noise Measurement Locations
La Cañada Flintridge General Plan Program EIR

Ambient noise measurements that were taken for the General Plan Update include two locations along the I-210 Freeway to characterize existing noise levels. Sensitive receiver locations ST-4 and ST-6 were measured at 63 and 62 dBA L_{eq} when rounded to the nearest whole number. The I-210 Freeway was the dominant noise source at each of these locations.

Figures NE-2 and NE-3 show the existing and future 60 and 65 dBA CNEL contours for SR-2 and I-210 throughout the City. Table NE-3 shows the distances from the centerline of these two noise sources to existing and future 60 and 65 dBA CNEL contours. Noise contours for the I-210 and SR-2 freeways were calculated based on the 2008 total vehicles and the percentage of trucks (both medium and heavy) provided by the Caltrans web site. Future volumes were based on a two percent growth factor.

Table NE-3. Existing (2008) and Future (2030) 60 and 65 dBA CNEL contours for I-210 and SR-2

Roadway	Segment	Distance to Existing 60 dBA CNEL Contour (Feet)	Distance to 2030 60 dBA CNEL Contour (Feet)	Distance to Existing 65 dBA CNEL Contour (Feet)	Distance to 2030 65 dBA CNEL Contour (Feet)
SR 2	At I-210 interchange	> 1,000[1]	> 1,000[2]	643	771
SR 2	At Foothill Boulevard	110	134	65	80
I-210	Throughout the City	702	860	414	510

[1] The future noise contours for I-210 do not include the potential extension of the I-710 Freeway. The inclusion of the proposed project could increase traffic volumes on I-210 and increase the distance to the 60 and 65 dBA CNEL contours.

[2] The TNM lookup tables do not calculate beyond 1,000 feet; therefore, the distance of the 60 dBA CNEL contour is not quantified beyond this distance.

According to Metro guidelines, noise abatement measures in the form of retrofit soundwalls will be considered when the existing peak-hour average traffic noise levels are 67 dBA or higher. These soundwalls are considered "Metro Qualified." Where the existing peak-hour average traffic noise levels are less than 67 dBA, soundwalls are considered "Metro Non-Qualified" and should be funded from sources other than Metro.

The NBSSR concluded that approximately 3.3 miles of soundwall would need to be constructed on the westbound side of I-210, ranging in height from 9.8 to 16.1 feet, while approximately 2.0 miles of soundwall would need to be constructed on the eastbound side, ranging from 4.6 to 16.1 feet high. The majority of these soundwalls are considered "Metro Qualified." All portions of the soundwalls would be constructed within the Caltrans right-of-way.

Construction of the proposed soundwalls would provide at least a 5 dB reduction in traffic noise levels.

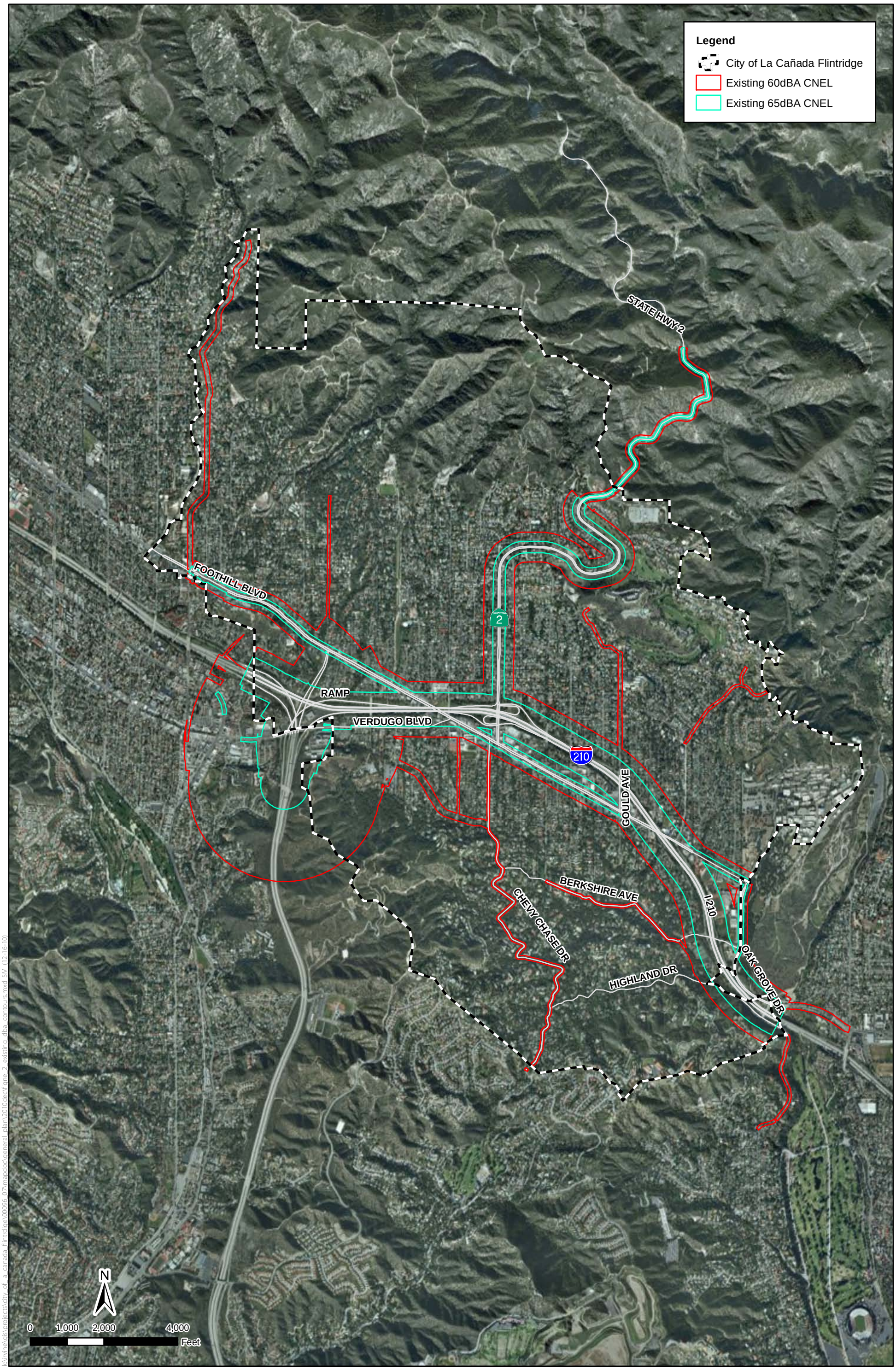
Total cost for the "Metro Qualified" soundwalls would be approximately $34 million (in 2007 dollars). The City is seeking funding for the "Metro Qualified" soundwalls from a variety of sources, including Metro, federal discretionary, and State funds. As of the adoption date of this update to the General Plan, the timing of construction of needed soundwalls has not been established; however, some funding has been identified. Construction of the soundwalls will continue to be the City's highest priority regarding noise mitigation in the planning period.

7.3.2.2 Primary Arterials and Major Local Streets

Noise from primary and secondary arterial streets also can contribute to the noise environment, often substantially. The short-term noise measurements that were conducted on representative roadways located with the City on November 11, 2009, indicate that noise levels ranged from 52 dBA L_{eq} up to 65 dBA L_{eq}. Table NE-2 shows the representative noise levels at each measurement location. Table NE-4 shows the distance to the 60 and 65 dBA CNEL contours for modeled roadways within the City. Traffic volumes for local roadways were taken from the traffic impact analysis prepared for the General Plan update. Figures NE-2 and NE-3 show the existing and future 60 and 65 dBA CNEL contours for some of the major thoroughfares throughout the City. All local roadways analyzed were assumed to have three percent trucks (volumes are based on the FHWA TNM lookup tables).

Foothill Boulevard

Foothill Boulevard, which is one of three primary roadways in La Cañada Flintridge, is the only regional arterial; it is also the primary commercial thoroughfare. ADT on Foothill Boulevard is approximately 23,000 vehicles. Noise modeling was conducted for the La Cañada Flintridge Town Center Project (EIP Associates 2006), which is located on Foothill Boulevard east of Angeles Crest Highway. The modeled existing noise levels at a distance of 100 feet from the applicable roadway centerline varied from approximately 49 dBA CNEL on Foothill Boulevard at Bel Air Drive and south of Bel Air Drive, to 65 dBA CNEL at numerous locations along the I-210 Freeway and along Foothill Boulevard from Chevy Chase Drive to Foothill Boulevard. Traffic noise



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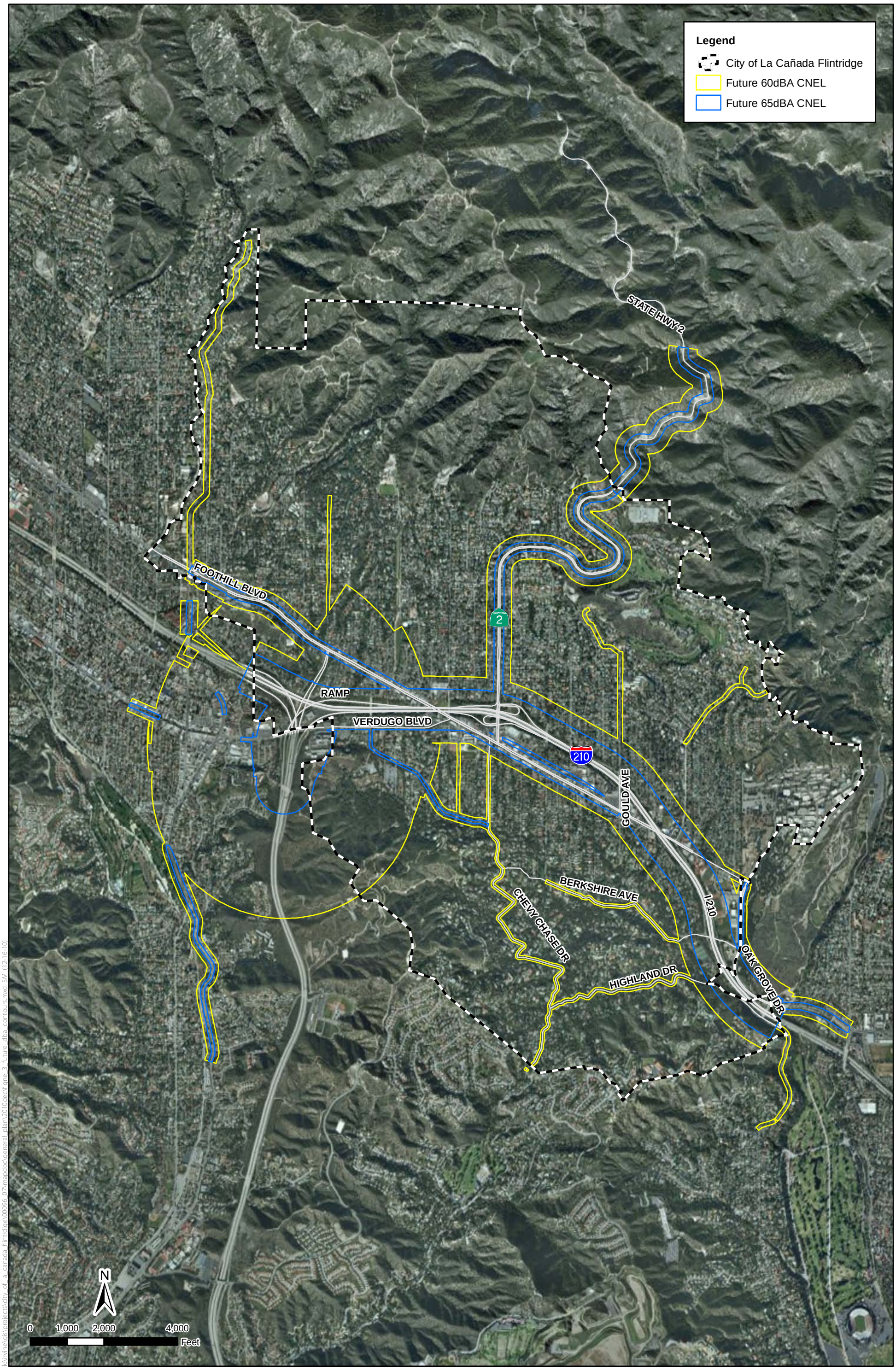
NE-2
Existing 60 and 65 dBA CNEL Contours
La Cañada Flintridge General Plan Program EIR



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NE-3
Future 60 and 65 dBA CNEL Contours
La Cañada Flintridge General Plan Program EIR

on Foothill Boulevard currently does not exceed acceptable noise levels for existing or future uses along the corridor (Table NE-2); however, the presence of residential neighborhoods directly adjacent to the corridor poses an issue that the City will address during the planning period.

Because Foothill Boulevard is a regional arterial street, the City cannot restrict potential increases of through-traffic that could occur during the planning period. However, it can continue to work with neighboring jurisdictions through the regional councils of governments to monitor and address future traffic levels. The transportation demand management measures identified in Chapter 6, *Circulation Element*, and Chapter 8, *Air Quality Element*, including increased use of transit and other techniques, can help to maintain or even reduce levels of traffic on Foothill Boulevard and other major roadways.

Angeles Crest Highway and Verdugo Boulevard are the other two primary roadways, with approximate ADTs of 16,900 and 15,800 vehicles, respectively. Noise levels along portions of Angeles Crest Highway near Foothill Boulevard and the I-210 Freeway could meet or exceed 65 dBA CNEL; however, based on short-term ambient noise measurements conducted at Glenola Park (ST-7), noise levels would not likely exceed 65 dBA CNEL for this stretch of Angeles Crest Highway. Other roadways modeled (with existing or future traffic volumes) are not expected to exceed 65 dBA CNEL.

In addition to noise from passenger vehicles, transit buses and trucks also can contribute to roadway noise and vibration. Transit services in La Cañada Flintridge operate along the entire length of Foothill Boulevard, along Verdugo Boulevard, and on Oak Grove Drive (which serves JPL).

Traffic on local residential streets is relatively low and does not contribute significantly to excessive noise levels. However, noise and vibration associated with delivery and refuse trucks can cause periodic disturbances.

Table NE-4. Existing (2008) and Future (2030) 60 and 65 dBA CNEL Contours for Selected Roadways

Roadway	Segment	Distance to Existing 60 dBA CNEL Contour (Feet)	Distance to 2030 60 dBA CNEL Contour (Feet)	Distance to Existing 65 dBA CNEL Contour (Feet)	Distance to 2030 65 dBA CNEL Contour (Feet)
Alta Canyada Road	North of Foothill Boulevard	--	--	--	--
Angeles Crest Highway	North of Foothill Boulevard	388	311	140	107
Angeles Crest Highway	North of Bay Tree Road	111	389	35	140
Berkshire Avenue	East of Commonwealth Avenue	40	50	--	--
Chevy Chase Drive	South of Berkshire Avenue	48	51	--	--
Chevy Chase Drive	South of Foothill Boulevard	35	44	--	--
Chevy Chase Drive	Between Emerald Isle and Sussex	--	--	--	--
Commonwealth Avenue	South of Foothill Boulevard	--	--	--	--
Cornishon Avenue	South of Foothill Boulevard	35	44	--	--
Crown Avenue	North of Santa Ynez Way	36	49	--	--
Descanso Drive	West of Chevy Chase Drive	95	126	--	40
Foothill Boulevard	East of Ocean View Boulevard	268	304	89	103
Foothill Boulevard	East of Hillard Avenue	267	299	89	101
Foothill Boulevard	East of Verdugo Boulevard	291	352	98	123
Foothill Boulevard	East of Gould Avenue	287	106	96	--
Foothill Boulevard	Between La Crescenta and Rosemont	251	294	83	99

Roadway	Segment	Distance to Existing 60 dBA CNEL Contour (Feet)	Distance to 2030 60 dBA CNEL Contour (Feet)	Distance to Existing 65 dBA CNEL Contour (Feet)	Distance to 2030 65 dBA CNEL Contour (Feet)
Gould Avenue	North of I-210 Westbound Ramp	40	52	--	--
Highland Drive	East of Chevy Chase Drive	--	61	--	--
Hillard Avenue	North of Foothill Boulevard	35	45	--	--
Honolulu Avenue	Between Sunset and Wickham	180	183	57	58
La Cañada Boulevard	North of Fairview Drive	--	--	--	--
Lida Street	Between Figueroa and Art Center Driveway	--	--	--	--
Linda Vista Avenue	Between Inverness and I-210	44	55	--	--
Montrose Avenue	Between Mira Vista Avenue and Waltonia Drive	175	179	56	57
Oak Grove Drive	South of Foothill Boulevard	159	139	51	45
Oak Grove Drive	West of Windsor Avenue	66	226	--	72
Ocean View Boulevard	North of Foothill Boulevard	67	80	--	--
Ocean View Boulevard	Between Barton Lane and I-210	227	233	72	75
Verdugo Boulevard	East of Alta Canyada Road	103	120	--	37
Verdugo Boulevard	Between Park Place and Lanterman Lane	184	195	58	61
Verdugo Boulevard	South of La Crescenta Avenue	137	157	43	50

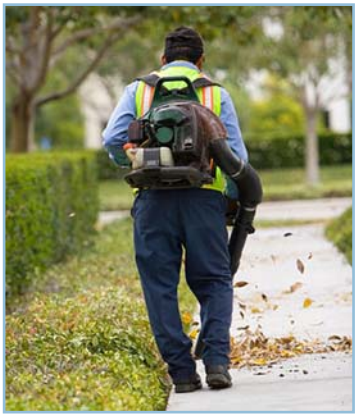
7.3.2.3 Aircraft

The Burbank–Bob Hope Airport is approximately 8 miles west of La Cañada Flintridge and separated by mountains. The nearest public-use airport is Whiteman Airport, which is located approximately 12 miles west-northwest and is also separated from the City by mountains. Although La Cañada Flintridge experiences aircraft flyovers typical of a city located near a major metropolitan region, airport noise does not represent a significant part of its noise environment.

La Cañada Flintridge also experiences periodic noise from helicopters. One of the County of Los Angeles Fire Department's ten training camps, Camp 2 Regional Training Center, is located immediately south of JPL, just south of the City boundary off Oak Grove Drive. Camp 2 is a helicopter standby location during the fire season, with a crew of fire fighters. Helicopters also fly to and from JPL periodically. The Verdugo Hills Hospital, which is located in Glendale directly adjacent to the City's southwest boundary, also has a private helipad on-site for transport of trauma patients. In general, the helicopter flights are not regular and the noise associated with them is infrequent and not a significant source of noise within the City. The exception would be during major fire events when the Camp 2 fire crew would be responding.

7.3.3 Non-Transportation Noise Sources

There are a variety of non-transportation noise sources within La Cañada Flintridge, both stationary and periodic. Although commercial establishments within the City are predominantly low scale and low intensity, they can produce unwanted sources of noise. These noise sources include periodic loading and unloading operations, restaurants and live music venues, use of pneumatic auto repair tools, and use of mechanical equipment. Other land uses in the City can be sources of noise, including schools, parks, and other active recreation venues. Typically, the sources of noise associated with these uses are most intrusive into residential areas that are directly adjacent to the specific uses.



Example of "nuisance noise"

Periodic noise also can be disruptive to the City's quiet residential neighborhoods. These noise sources include use of landscaping maintenance equipment, construction noise, barking dogs, and loud music. This type of "nuisance noise" is especially annoying when it occurs in the early morning or late night hours.

7.4 Planning to Address Noise

La Cañada Flintridge will continue to be a community that retains its quiet, small-town feeling and predominantly single-family residential character with a limited amount of local-serving commercial development. The Land Use Element does not propose changes to land use designations that would increase exposure of people to sources of noise. Therefore, implementation of the General Plan during the planning period will focus on three main efforts: 1) maintaining areas deemed currently acceptable in terms of noise exposure; 2) mitigating impacts from existing sources of noise on existing sensitive land uses; and 3) implementing planning policies and zoning to ensure that new development both is protected from unwarranted noise and does not contribute to unacceptable levels of noise within the community.

7.4.1 Land Use Compatibility and Noise

Table NE-5 below provides guidance for the acceptability of certain types of development within specific CNEL noise contours; this guidance will serve as criteria for assessing the compatibility of proposed land uses in corresponding land use designations. Table NE-5 depicts "clearly acceptable," "normally acceptable," "normally unacceptable," and "clearly unacceptable" exterior noise levels for those uses and land use designations. The primary purpose of the noise/land use compatibility matrix is to identify potential conflicts between proposed land uses and the noise environment. The City will utilize it as part of the criteria for assessing the compatibility of proposed development. The matrix is usually used at the General Plan or zoning levels of approval, as well as for California Environmental Quality Act (CEQA) analysis.

Table NE-6 provides the interior and exterior noise guidelines for various types of uses and developments. The noise guidelines will function as City policy for new land uses and acceptable noise levels for development of new land uses. In addition, the provisions of the State of California Noise Insulation Standards (California Code of Regulations, Title 24) will be enforced to specify that the indoor noise levels for multi-family residential living spaces shall not exceed 45 dB CNEL (or L_{dn}) due to the combined effect of all noise sources. The State requires implementation of this indoor standard when the outdoor noise levels exceed 60 dB CNEL (or L_{dn}). Title 24 requires that this standard be applied to all new hotels, motels, and apartment houses and dwellings other than detached single-family dwellings. As a matter of policy, the City also will apply this standard to new single-family developments, mixed-use developments, and condominium conversions, where feasible.

An acoustical analysis, prepared by a qualified acoustical engineer, should be required in instances where noise-sensitive uses are proposed in noise-impacted

areas. The acoustical analysis will verify that the structure has been designed, and/or mitigation measures have been proposed, to limit noise to the prescribed maximum allowable levels for interiors and exteriors.

Table NE-5. Noise and Land Use Compatibility Matrix

Land Use		**Day-Night Noise Level (L_{dn})**						
Designations	**Uses**	**≤55**	**60**	**65**	**70**	**75**	**80≥**	
Hillside, Estate, Very Low Density, Low Density, Medium Density Residential	Single-Family, Duplex, Accessory Living Units	A	A	B	C	C	D	D
Medium-High, High Density Residential	Multiple-Family, Senior Housing	A	A	B	B	C	D	D
Commercial/Office, Mixed Use 1 (DVSP), Mixed Use 2 (DVSP), Mixed Use (New), Mixed Use Overlay (New)	Commercial, Retail, Bank, Restaurant, Business Professional, Movie Theatre, Mixed Use (Commercial/Residential)	A	A	A	A	B	B	C
Commercial/Office	Auditorium, Concert Hall	B	B	C	C	D	D	D
Institutional, Public	Schools, Libraries, Churches, Nursing Homes, Hospitals, Medical Offices, Museums, Other Public	A	A	B	C	C	D	D
Parks and Recreation	Parks, Riding Clubs, Community Centers, Swimming Pools, Tennis Courts, Ball Fields	A	A	A	B	C	D	D
Open Space	Golf Courses, Botanical Gardens, Low-Intensity Public Recreation Uses, Trails, Public and Private Natural Open Space Areas	A	A	A	A	B	C	C
Interpretation								
Zone A Clearly Acceptable	Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.							
Zone B Normally Acceptable	New construction or development should be undertaken only after detailed analysis of the noise reduction requirements are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.							
Zone C 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 the design.							
Zone D Clearly Unacceptable	New construction or development should generally not be undertaken.							

Table NE-6. Interior and Exterior Noise Guidelines

Land Use	Maximum Noise Level (L_{dn} or CNEL, dBA)	
	Interior[1, 2]	Exterior
Residential—Single-family, multi-family, duplex	45	65[3]
Residential—Nursing homes, hospitals	45	65[3]
Private offices, church sanctuaries, libraries, board rooms, conference rooms, theaters, auditoriums, concert halls, meeting halls, etc.	45	–
Schools	45	67[4]
General offices, reception, clerical, etc.	50	–
Bank lobby, retail store, etc.	55	–
Manufacturing, kitchen, warehousing, etc.	65	–
Parks, playgrounds, etc.	–	65[4]
Golf courses, outdoor spectator sports, amusement parks, etc.	–	70[4]

Notes:

[1] Noise standard with windows closed. Mechanical ventilation will be provided per Unified Building Code requirements to provide a habitable environment.

[2] Indoor environment excluding bathrooms, toilets, closets, and corridors.

[3] Outdoor environment limited to rear yard of single-family homes, multi-family patios and balconies (with a depth of 6 feet or more), and common recreation areas.

[4] Outdoor environment limited to playground areas, picnic areas, and other areas of frequent human use.

The City currently does not have a comprehensive noise ordinance, although several individual ordinances place restrictions on specific types of noise, such as time restrictions placed on construction activities, barking dogs, and noise related to landscaping activities. During the 2030 planning period the City will develop and adopt a noise ordinance to address excessive noise sources (e.g., leaf blowers, construction noise) and nuisance noise in excess of that which is appropriate to residential living (e.g., loud parties, loud stereos, barking dogs). The noise ordinance also will codify application of the guidelines previously discussed.

7.4.2 Mitigation of Existing Noise Sources

Excessive noise from I-210 is the City's major noise impact. During the planning period, the City will pursue funding for and construction of soundwalls, as identified in the NBSSR, to reduce the impact of freeway noise on noise-sensitive uses adjacent to the I-210 Freeway. In certain areas, however, construction of soundwalls will not reduce noise levels to those that are at or below the noise

abatement criteria established by FHWA, Caltrans, and Metro. The City will support efforts of residents and owners of other noise-sensitive uses to reduce the impact of excessive noise levels along the freeways and Foothill Boulevard.

7.4.3 Land Use Planning to Address Noise

Since the last update of the Noise Element and as a part of the current update, the City has added several Mixed Use designations to its land use map: two in the *City of La Cañada Flintridge Downtown Village Specific Plan* (DVSP), adopted in 2000, and one as a part of this update to the General Plan, which applies to larger commercial properties on Foothill and Verdugo Boulevards. The City is nearly built out, so significant amounts of new development are not expected during the planning period. Other than infill development on existing residentially designated and zoned land, new residential development will be limited to senior housing and multi-family residential development within the Mixed Use land use and zoning designations.

Implementation of the DVSP and the Land Use and Circulation Elements will maintain the single-family character of the community and enhance the existing pedestrian-oriented, low scale village atmosphere along Foothill Boulevard. During the 2030 planning period, the City will develop and implement planning policies, guidelines, and standards that minimize human exposure to excessive noise, with special emphasis on protecting residential neighborhoods from intrusive noise.

Mixed-use development, which in this case means office, retail, and/or other commercial uses combined with residential, poses unique challenges regarding noise, as certain commercial uses (e.g., restaurants and live music venues) may be located in proximity to residential units. Through the discretionary review process, the City will ensure that noise from the commercial portions of mixed-use developments is not transferred to the residential units.

7.5 Goals, Objectives, and Policies

The following goals, objectives, and policies of the Noise Element, when coupled with those in the Land Use and Circulation Elements, are intended to protect residents from unwarranted and offensive noise and prevent its intrusion into residential neighborhoods.

NE GOAL 1: Protect people who live, work, and recreate in the City from excessive transportation noise.

NE Objective 1.1: Utilize noise control measures to reduce the impact from roadway noise sources.

NE Policy 1.1.1: Pursue all reasonable steps to encourage Metro and other relevant agencies to install noise attenuation features (i.e., berms, soundwalls, rubberized pavement, or a combination thereof) along freeways and freeway approaches in areas adjoining residences and other noise-sensitive uses where noise levels exceed 67 dBA (L_{eq}), as recommended in the NBSSR.

NE Policy 1.1.2: Ensure that new soundwalls are consistent with the existing vegetation and foliage, which are a hallmark of the City's character.

NE Policy 1.1.3: Support the efforts of residents and owners of other noise-sensitive uses to reduce the impact of excessive noise levels along the freeways and Foothill Boulevard.

NE Policy 1.1.4: Discourage new noise-sensitive land uses from locating, and existing noise-sensitive land uses from expanding, in areas adjacent to roadways where noise levels are 65 dB CNEL or above.

NE Policy 1.1.5: Require developers to implement noise abatement that meets Caltrans' acoustical criteria or other standards established by the City, if new developments cause increases in traffic volumes that result in roadway noise levels greater than 65 dB CNEL at sensitive receptors.

NE Objective 1.2: Cooperate and coordinate with local, regional, and State agencies to minimize the impact of transportation-related noise.

NE Policy 1.2.1: Continue to work with Caltrans and Metro to monitor the freeway noise levels and update the NBSSR, as necessary.

NE Policy 1.2.2: Work with appropriate public agencies to develop and implement programs to abate transportation noise.

NE Policy 1.2.3: Work with transit providers to minimize noise associated with transit operations.

NE Policy 1.2.4: Oppose any SR-710 tunnel or surface freeway extension that would increase traffic volumes on the I-210 Freeway through La Cañada Flintridge due to the air quality, noise, and traffic congestion impacts to the community that such alternatives would create. Encourage the development of multi-modal transportation alternatives in lieu of a direct connection between the SR-710 and I-210 Freeways that address regional transportation needs without significantly impacting the City.

NE Policy 1.2.5: Monitor proposed changes to the Airport Land Use Plan for the Burbank–Bob Hope Airport and oppose changes that would negatively affect La Cañada Flintridge.

NE GOAL 2: Protect people who live, work, and recreate in the City from unwarranted and excessive levels of non-transportation noise.

NE Objective 2.1: Develop methods and measures to mitigate excessive non-transportation noise.

NE Policy 2.1.1: Develop and implement a Noise Ordinance to be incorporated into the La Cañada Flintridge Municipal Code. The Noise Ordinance should address excessive noise sources and nuisance noise in excess of that which is appropriate to residential living, including mitigation of excessive noise arising from commercial uses or the support of commercial uses next to or near residential or other noise-sensitive uses.

NE Policy 2.1.2: Encourage that new equipment and vehicles purchased by the City comply with noise performance standards consistent with available noise reduction technology.

NE Policy 2.1.3: Encourage local businesses and employers to mitigate excessive noise generated by their operations voluntarily through outreach and education.

NE Objective 2.2: Promote land use planning policies, guidelines, and standards that minimize human exposure to excessive noise, with special emphasis on protecting residential neighborhoods and other sensitive noise receptors from intrusive noise.

NE Policy 2.2.1: Adopt and apply the Noise and Land Use Compatibility Matrix and the Interior and Exterior Noise Guidelines as guidelines to establish acceptable noise standards for various uses throughout the City, to avoid noise and land use conflicts, and to mitigate unacceptable levels of noise on new and existing development.

NE Policy 2.2.2: Require new development to minimize noise impacts on adjacent uses through site and building design, setbacks, berms, landscaping, and/or other noise abatement techniques.

NE Policy 2.2.3: Apply California Administrative Code Title 24 noise insulation standards to the construction of multi-family housing, residential portions of mixed-use development, new single-family developments, and conversion of existing apartments into condominiums.

NE Policy 2.2.4: Require mixed-use developments to control the levels of noise generated by commercial uses from affecting residential uses.

NE Policy 2.2.5: Require that an acoustical analysis be prepared by a qualified acoustical engineer in instances where noise-sensitive uses are proposed in noise-impacted areas. The recommendations of the acoustical analysis to mitigate noise will be considered during deliberations on the project.