

2.20 NOISE

2.20.1 *Introduction*

This section identifies the primary noise sources within the City of Los Angeles. The most pervasive noise source within the City is motor vehicle noise. Therefore, noise is assessed on a Citywide and a Community Plan level.

2.20.2 *Thresholds of Significance*

The Plan would create a significant noise impact if it causes areas with acceptable CNEL levels to exceed State compatibility standards and/or existing ordinances. It should be recognized that there are no noise ordinances to regulate mobile noise sources, but are limited to stationary noise sources. If an area currently exceeds State compatibility standards, then a significant noise impact would be based on UMTA noise guidelines. At the present time, the only established standard limits noise increases from construction to 5 dBA and has established other standards not related specifically to measurable noise increases, but to direction of noise sources away from sensitive land uses. In some cases, a 3 dB threshold has been used to establish significance, as the smallest noise increase audible to most people. Generally, increases of less than 3 dBA are considered insignificant. Increases from 3 to 5 dBA are usually considered substantial, and over 5 dBA, significant.

2.20.3 *Existing Conditions*

The term "noise" is used to describe unwanted sound. The perception of noise is a subjective matter because individual opinions vary as to what constitutes "unwanted sound". Noise can be categorized into two types: background noise, which is a near-constant source of sound associated with a particular environment; and intrusive or peak noises, which are isolated events that stand out from background noise. The background noise environment is generated by a variety of constant or long-term noise sources that are within, close to, and distant from a particular environment or location. The extent to which intrusive noise prevails over the background noise depends on its proximity, intensity, duration, frequency, and time of occurrence.

The results of medical studies show that the primary cause of hearing loss is cumulative long-term exposure to excessive near-constant noise sources. Intrusive noise, although not generally a cause of permanent hearing loss, does contribute to stress, irritability, increased blood pressure, loss of sleep, and low work efficiency. The sound level of speech is typically about 60 to 65 dBA. In general, noise begins to interfere with a listener's understanding of speech when it exceeds 55 to 60 dBA. Sleep can be disturbed when interior noise levels exceed 50 dBA.

The primary concerns in dealing with community and environmental noise are the effect of noise on people, and noise mitigation. To analyze noise effects and develop mitigation, noise must be measured and described, and then compared and evaluated in terms of set guidelines and regulations.

The unit of measurement of environmental noise is the decibel (dB). To better approximate the range of sensitivity of the human ear to sounds of different frequencies, the A-weighted decibel scale was devised. Because the human ear is less sensitive to low frequency sounds, the A-scale de-emphasizes these frequencies by incorporating frequency weighting of the sound signal. When the A-scale is used, the decibel levels are shown as dBA. On this scale, the range of human hearing extends from about 3dBA to about 140 dBA. A 10 dBA increase is judged by most people as a doubling of the sound level: The smallest change that can be heard is about 2 to 3 dBA. The noise levels in a quiet urban area in the daytime are typically about 50 dBA. Normal speech produces a sound level of about 65 dBA at 3 feet while a diesel truck at 50 feet would result in a sound level near 90 dBA. Noise levels above 110 dBA become intolerable and then painful, while levels higher than 70 dBA over continuous periods can result in a loss of hearing.

Since environmental noise fluctuates in intensity over time, noise impacts are commonly evaluated using time-averaged noise levels. The Community Noise Equivalent Level (CNEL) represents an energy average of the A-weighted noise levels over a 24-hour period with 5 dBA and 10 dBA penalties added for nighttime noise between the hours of 7:00 PM and 10:00 PM and 10:00 PM to 7:00 AM, respectively. The penalties were selected to account for reduced ambient noise levels during these time periods. Individual events have a greater impact between 7:00 PM and 7:00 AM due to increased human sensitivity to noise during quieter periods, when sleep is the most probable activity. The level of acceptability of a noise environment is dependent on the activity that is conducted and the type of building construction. Figure N-1 provides noise exposure compatibility guidelines for a variety of land uses. The guidelines are consistent with the ranking of noise levels for various land uses as defined in the City of Los Angeles EIR Manual for Private Projects. The figure shows that for many noise sensitive land uses such as residences, schools, hospitals and religious facilities, the maximum acceptable CNEL is 65 dB. For land uses that are commercial or industrial, the maximum acceptable CNEL is 74 dB.

When a noise source is introduced into an area or when an existing source is expected to change, the noise impact associated with this change may be assessed in two ways. First, the absolute noise exposure is compared with the criteria presented in Figure X.1 to evaluate the acceptability of the future noise source. Second, the relative change in the noise exposure is examined. Small changes in noise exposure of 1 to 2 dBA are usually imperceptible to the average person and are insignificant regardless of the absolute level. Changes of 3 to 4 dBA are usually noticeable but may not be significant depending upon the absolute level. Increases of 5 dBA and above are usually considered significant.

Changes in noise levels are most noticeable during quieter periods of the day or night. The hourly energy average sound level (Leq) is used to measure the hourly noise exposure. Leq is a single number which represents the energy averaged sound



LOS ANGELES
CITYWIDE GENERAL PLAN
FRAMEWORK EIR

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE Ldn* or CNEL, db						
	50	55	60	65	70	75	80
RESIDENTIAL - LOW DENSITY SINGLE FAMILY, DUPLEX, MOBILE HOMES	Dotted		Dotted			Solid	
RESIDENTIAL - MULTI. FAMILY	Dotted		Dotted			Solid	
TRANSIENT LODGING - MOTELS, HOTELS	Dotted		Dotted			Solid	
SCHOOLS, LIBRARIES, CHURCHES, HOSPITALS, NURSING HOMES	Dotted		Dotted			Solid	
AUDITORIUMS, CONCERT HALLS, AMPHITHEATRES	Dotted		Dotted			Solid	
SPORTS ARENA, OUTDOOR SPECTATOR SPORTS	Dotted		Dotted			Solid	
PLAYGROUNDS, NEIGHBORHOOD PARKS	Dotted		Dotted			Solid	
GOLF COURSES, RIDING STABLES, WATER RECREATION, CEMETERIES	Dotted		Dotted			Solid	
OFFICE BUILDINGS, BUSINESS COMMERCIAL AND PROFESSIONAL	Dotted		Dotted			Solid	
INDUSTRIAL, MANUFACTURING UTILITIES, AGRICULTURE	Dotted		Dotted			Solid	

INTERPRETATION



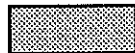
NORMALLY ACCEPTABLE

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



NORMALLY UNACCEPTABLE

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



CONDITIONALLY ACCEPTABLE

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



CLEARLY UNACCEPTABLE

New construction or development should generally not be undertaken.

**Guidelines for
Environmental
(exterior) Noise
Compatible
Land Use**

SOURCE: Office of Noise Control, California Department of Health

Envicom Computer Graphics

FIGURE N-1

level over the measurement period (usually 15 minutes to an hour). An Leq of 70 dBA can often make it difficult to have face-to-face conversations at normal voice levels. For example, freeway traffic noise (70 dBA at 50 feet) can make telephone use difficult.

Noise Sources and Levels

The existing noise environments in the Los Angeles area vary considerably as a result of the variety of land uses and densities. In most areas, automobile, truck, and bus traffic is the major source of noise. Traffic activity generally produces an average sound level that remains fairly constant with time. Individual high-noise-level events that can occur from time to time include honking horns, sirens, operating construction equipment, and passbys of noisy vehicles such as trucks and buses. Air and rail traffic, and commercial and industrial activities are also major sources of noise in some areas. In addition, air conditioning and ventilating systems contribute to the total noise levels, particularly during the summer months.

Major sources of ground-borne vibration in the project areas typically include trucks and buses operating on surface streets, and freight and passenger train operations. The most significant sources of construction-induced ground-borne vibration are pile driving and blasting.

Motor Vehicle Noise The most influential and widely dispersed noise source in Los Angeles is motor vehicle traffic. The rush hour automobile traffic noise impacts on pedestrians violate City noise standards daily on virtually every major highway, State highway, and freeway in the City. Noise generated by motor vehicles varies with the volume and speed of traffic. Noise levels increase as traffic volume and speed increase. Traffic noise levels are also influenced by the proportion of traffic represented by trucks, increasing as the proportion of trucks increases. Traffic noise decreases by about three dBA with each doubling of distance from the roadway. Noise levels can be reduced further by shielding by barriers such as sound walls.

As the Level-of-Service on roadways decreases beyond a certain point (generally Level-of-Service C), reductions in traffic speeds offset increases in traffic volumes, and noise levels decrease.

Aircraft Noise There are three major airports which influence noise levels in Los Angeles. They are the Los Angeles International Airport (LAX), the Van Nuys Airport and the Burbank Airport. The Los Angeles International Airport and the Van Nuys Airport are within the City limits while the Burbank Airport is outside the City. The 65 dBA, CNEL, contours from these airports affect land uses within the City. Two smaller general aviation airports (the Santa Monica Municipal Airport and the Whiteman Airport in Pacoima) are within or adjacent to the City, but the 65 dBA, CNEL, contours from those airports are generally contained within the airport boundaries. The California Airport Noise Standards consider 65 dBA, CNEL, the "noise impact boundary" for airports. Areas outside of the 65 dBA,

CNEL, contour are affected, although to a lesser extent, by aircraft overflights. Aircraft overflights contribute to the noise environment to at least some extent throughout Los Angeles.

The growth of commercial aviation traffic at LAX and Burbank Airport has significantly increased noise impacts in Westchester-Playa Del Rey, South Central Los Angeles, Sun Valley, and North Hollywood. The airports in Van Nuys, Santa Monica, and Pacoima have also increased their noise impacts in the respective adjacent communities.

There are over 50 private heliports within the City of Los Angeles. Helicopter overflights are related to activities such as emergency access, transport of hospital patients, crime prevention and apprehension activities, and private activities. At heights of 400 to 500 feet above the ground, helicopter noise (particularly in the quieter evening and nighttime periods) is clearly discernible to residents on the ground. According to studies prepared for the U.S. Environmental Protection Agency (EPA) light utility helicopters (2-7 seats), single event noise from piston and turbine models ranging from 78 to 86 dBA at a distance of 500 feet.¹ For example, if a helicopter were to operate over the same location for 15 minutes in the evening when neighborhood noise levels are about 50 dBA, then the resulting change in the ambient CNEL would be an increase of about 26-decibels, a significant and noticeable change. Helicopter noise is particularly noticeable in the downtown area. Many of the buildings have helipads on the roof and sound from helicopters taking off and landing can be channeled to the street level by enclosed spaces formed by the buildings.

Railroad Noise Los Angeles is served by three major railroad companies (the Southern Pacific, the Union Pacific, and the Santa Fe). Each has several tracks which receive regular daily freight traffic. Other tracks are used to a lesser extent for local service. Each railroad also has an active rail yard in the vicinity of Los Angeles. The Southern Pacific yard is within the City (in the Boyle Heights Community Plan Area). The Union Pacific and the Santa Fe yards are within Commerce and Vernon, respectively, south of Boyle Heights. AMTRAK operates daily train service through Los Angeles. In addition, Taylor Yard, located to the west of Glassell Park is a major source of railroad noise. Railroad noise sources include noise from moving trains, whistle noise, rail crossing warning signals, and rail yards.

This rail noise and rail vehicular noise impacts areas along the East and Central San Fernando Valley rail corridors, the East Los Angeles and Downtown rail corridors, the South Los Angeles rail corridors, and the Harbor area rail lines. Rail transit (Metro Blue Line) right-of way and facilities are located along Washington Boulevard and Long Beach Avenue. Future rail lines are being planned and construction is already taking place on the Red Line extension on Wilshire

¹ U.S. Environmental Protection Agency, Transportation Noise and Noise from Equipment Powered by Internal Combustion Engines, December 31, 1971, Document No. NTID300.13, p.54

Boulevard and in Hollywood. Although the Red Line extension is a subway, other lines constructed at grade or at an aerial alignment may constitute a noise impact particularly where they are adjacent to residential areas.

Construction Construction activities typically generate noise through the use of heavy machinery and equipment. As well as on-site equipment, haul trucks going to and from the site create additional disturbances, particularly if the construction activity is occurring in a residential area. Construction activities in the City of Los Angeles are limited to the hours between 7:00 AM and 6:00 PM. However, although the noise ordinance limits construction noise increases of 5 decibels or more, construction equipment often exceeds these limits.

Noise Standards, Plans and Policies

The Los Angeles Noise Ordinance, the Noise Element of the General Plan, and the Los Angeles Noise Compatibility Guidelines are the applicable noise-related standards and guidelines for Los Angeles. Title 24 of the California Administrative Code regulates interior noise levels for new multi-family residential dwellings. Noise from aircraft and motor vehicles is regulated by federal and state law, respectively.

The Los Angeles Noise Ordinance The City of Los Angeles has a Noise Ordinance intended to prohibit loud, unnecessary, and unusual noise which disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitivity working or residing in the area. The ordinance establishes limits for noise sources such as shouting, radios, amplified music, etc. The ordinance also prohibits construction noise between the hours of 6:00 PM and 7:00 AM. The Noise Ordinance is enforced by the Los Angeles Building and Safety Department and the Police Department in response to citizen complaints.

City of Los Angeles Noise Element The Noise Element serves as the official guide to government, businesses and private citizens who wish to identify, mitigate and regulate noise pollution within the City of Los Angeles. The Plan includes definitions, objectives, policies, standards, criteria and programs necessary when decisions are made affecting the noise environment within the City of Los Angeles. However, it does not establish standards and noise regulations for activities such as airplanes and motor vehicles, since such noise-producing activities are not under the jurisdiction of the City of Los Angeles.²

Several key objectives of the Noise Element are listed below:

- To reduce noise levels produced by all present modes of transportation, as well as to require acceptable noise levels for future modes.
- To reduce the impact of construction and industrial noise.

² City of Los Angeles Noise Element 1975

- To provide the basis for noise evaluation in land use considerations and Environmental Impact Reports.
- To abate unnecessary outdoor noises.

City of Los Angeles Noise Regulations Standards for protecting sensitive land uses from short-term noise are established in the City of Los Angeles Noise Ordinances (Nos. 156,363 and 161,574). Ordinance No. 156,363 generally focuses on the enforcement of noise standards based on a residential decibel level of 40 dBA during the day and 50 dBA at night. The burden of proof is on the violator regarding the technical feasibility to conform to Federal EPA standards. This measure affects stationary and mobile noise sources, including construction activities, the operation of equipment and machinery, amplified sound and other nuisance noise sources. As a general rule, the ordinance restricts the hours for noisy activities and also permits up to a 5 decibel increase over ambient conditions for noise sources of short-duration. The ordinance provides sound level measurement procedures, methods to reconcile conflicting noise limits and factors to correct noise problems. Ordinance 161,574 specifies a five-minute duration of time within a sixty minute period between 7:00 a.m.-10:00 p.m. for a violation period. Definitive decibel limits and time periods are given for construction tools, garbage, and vehicle loadings.

The basic premise of the Ordinances is to establish criteria to define when noise levels disturb the tranquillity of neighborhoods or cause discomfort or annoyance to normal human sensitivity by new sound level measurements, define limited periods of time for noise frequencies and specify enforcement actions.³

With respect to construction noise, the City of Los Angeles Noise Ordinance does not permit an intruding noise to raise the ambient noise level by more than 5 dBA. Construction noise in the City of Los Angeles is regulated by the provisions of Sections 112.03 and 41.40 of the noise ordinance. Section 112.03 of the ordinance does not permit construction work in residential areas or within 500 feet of an area that creates noise that "is loud unnecessary and unusual and substantially exceeds the noise customarily and necessarily attendant to reasonable and efficient performance of such work." Section 41.40 prohibits construction work during the nighttime hours of 9:00 p.m. to 7:00 a.m. of the next day which creates noise "to the disturbance of persons occupying sleeping quarters in any dwelling hotel or apartment or other place of residence." Construction work is also prohibited before 8:00 a.m. or after 6:00 p.m. on any Saturday and at any time on any Sunday.

Noise Compatibility Guidelines Not all land-uses are compatible with each other in terms of activities and noise generated. In particular, residential areas that are not separated from industrial or commercial activities by open space or major arterials and/or commercial zones are sources of conflict. Industrial and commercial land use related noise conflicts with residential areas can include hours of operation, use of noisy equipment or processes, truck activity etc. **Figure N-2** illustrates land-use

³ City of Los Angeles, Noise Ordinance 156,363 1982, Noise Ordinance 161,574 1986 and Noise Element 1977.

noise compatibility based on permitted noise levels in zoning categories in the City of Los Angeles.

Title 24 Noise Insulation Standards Title 24 specifies the maximum allowable sound transmission between dwelling units in new multi-family buildings, and limits allowable interior noise levels in new multi-family residential units to 45 dBA, CNEL. For new multi-family construction proposed in areas where the existing exterior noise level is greater than 60 dBA, CNEL, Title 24 requires that an acoustical analysis be performed to demonstrate that interior levels would not exceed 45 dBA, CNEL.

Sensitive Receptors

Some land uses are considered more sensitive to ambient noise levels than others, due to the amount of noise (in terms of both exposure time and "insulation" from noise) and the types of activities typically involved. Residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, parks and outdoor recreational areas are generally more sensitive to noise than are commercial and industrial land uses. Noise-sensitive receptors are dispersed throughout the City of Los Angeles.

While the Plan and the City's Noise Ordinance regulate construction equipment noise and noise increases beyond 5dBA in any neighborhood (i.e., above the expected ambient noise level), presumed ambient day and night time noise levels exceeding 65dBA are permitted in M2 and M3 zones citywide. Because of the attenuation rate (the rate at which noise dissipates as you move further from the source) of point and area noise generators, it is possible for legal noise levels in less restrictive zones to intrude into more restrictive zones. This intrusion potential is the most severe when M2 and M3 zones abut residential zones. The greatest potential for this is adjacent industrial corridors of the East and Central San Fernando Valley, East and South Los Angeles, LAX, Harbor-Gateway, and the Harbor Area. Smaller areas may be impacted in the Southwest San Fernando Valley, Hollywood and Western Los Angeles.

2.20.4 Project Impacts

While it is true that the Framework Policy level of development will constitute an increase in traffic, this alone does not mean that noise levels will automatically increase in areas adjacent to freeways, arterials and collectors. An important factor in traffic noise is the actual speed of the traffic. As future traffic volumes increase, the capacity of the roads to carry traffic will be greatly diminished, and the result will be a decrease in overall traffic speed. Although traffic volume increases clearly contribute to traffic noise increases, without an accompanying increase in speed, there will not be significant changes in noise levels and the impact on adjacent land-uses will not be as high as anticipated. While it is detrimental to circulation to experience a decrease in traffic speed, from the standpoint of noise impacts it is beneficial.

FIGURE N-2: POTENTIAL CHANGE IN AMBIENT NOISE LEVELS (DECIBELS) FROM ADJACENT LAND-USE ZONES

	Residential Ambient day: 50dBA Ambient night:40dBA		Commercial Ambient day: 60dBA Ambient night:55dBA		Light Manufacturing Ambient day: 65dBA Ambient night:65dBA		Heavy Manufacturing Ambient day: 70dBA Ambient night:70dBA	
	Day	Night	Day	Night	Day	Night	Day	Night
Residential Ambient day: 50dBA Ambient night:40dBA	3	3	10	15	15	25	20	30
Commercial Ambient day: 60dBA Ambient night:55dBA	10	15	3	3	6	10	10	15
Light Manufacturing Ambient day: 65dBA Ambient night:65dBA	15	25	6	10	3	3	6	6
Heavy Manufacturing Ambient day: 70dBA Ambient night:70dBA	20	30	10	15	6	6	3	3

Shaded boxes represent a significant increase in ambient noise levels from adjacent land-uses. A 5 dBA change is the City's threshold level.

Ambient day (7:00 AM to 10:00 PM) and Ambient night (10:00 PM to 7:00 AM) numbers are the permitted ambient for the City of Los Angeles.

Residential Zones (all zones equally or less restrictive than R5) include A1, A2, RA, RE40, RE20, RE15, RE11, RE9, R5, R1, RU, RE2.5, RE3, RE4, RW1, RW2, R2, RD1.5, RD2, RD3, RD4, RD6, R3, R4, R5, OS.

Commercial Zones include CR, C1, C1.5, C2, C4, C5, CM, P, PB, PF

Light Manufacturing Zones include MR1, MR2, M1

Heavy Manufacturing Zones include M2, M3

The Public Facilities zone (PF) is included with commercial zones because it permits activities similar to those in commercial zones with regard to the noise levels typically generated.

Source: City of Los Angeles General Plan Noise Element and Municipal Code 1994

This argument is illustrated in **Table N-1**. It can be seen that while traffic volumes have increased by approximately 20 percent for all three facility types, speed has decreased between 19 and 43 percent with a subsequent drop in CNEL of 7 to 8 percent.

Guidelines for environmental noise compatibility are established by the Environmental Protection Agency.⁴ According to these guidelines, 60 decibels is defined as "normally acceptable" for residential neighborhoods and 65 decibels is defined as "normally unacceptable". For commercial areas these numbers are raised by 5 decibels respectively. Noise calculations for the Los Angeles General Plan Framework are calculated for a distance of 20 feet outside the right-of-way. This means that a significant noise level for residential areas within this distance is 65 decibels, and for commercial areas 70.

Table N-2 illustrates noise levels for all the community plans in the City of Los Angeles. The CNEL is calculated using Los Angeles General Plan Framework daily traffic volumes by facility type.⁵ From this it can be seen that there are no exceedances of the standard of 65 decibels, which means that the Framework Policy level of development does not constitute an impact.

2.20.5 *Alternative Impacts*

All five alternatives show a decrease in average CNEL between 1990 and 2010.

For Theoretical Buildout (**Table N-3**) the level of 65 decibels is exceeded for freeways in Beverly Crest/Bel Air and Westwood, which means that in these three community plan areas, the threshold for residential noise is exceeded and constitutes an impact.

For Alternative A (See **Table N-4**) thirty of the thirty-five plans show exceedances of 65 decibels and two (Beverly Crest/Bel Air and Westwood) show exceedances of 70 decibels on freeways. This alternative will constitute an impact.

For the Community Plan Buildout (**Table N-5**) none of the 35 community plans exceeds 65 decibels. Therefore, the Community Plan Buildout alternative does not constitute an impact.

For the No Project, No Growth alternative, (**Table N-7**) the threshold of 65 decibels is exceeded for one community plan (Beverly Crest/Bel Air), and for this community plan would constitute an impact. The same is true for the 2010 Market alternative (**Table N-6**).

⁴ Environmental Protection Agency - Information in Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety Report No. 550/9-74-004, March 1974

⁵ Estimates based upon information provided in document RD-77-108, U.S. Department of Transportation, Federal Highway Administration, 1977.

TABLE N-1

RELATIVE CHANGES IN TRAFFIC VOLUME, DAILY AVERAGE SPEED AND CNEL FOR POLICY ALLOCATION

Facility Type	Volume - Average Daily Traffic			Average Speed			CNEL		
	Existing	Policy	% Change	Existing /a/	Policy /b/	% Change	Existing	Policy	% Change
Freeways	297,720	417,124	+40	48	17	-65	69	60	-13
Arterials	264,390	367,971	+39	32	15	-53	63	57	-10
Collectors	42,583	60,047	+41	21	11	-48	59	54	-8

/a/ 1990 average daily speed

/a/ Estimated by applying ratio of future peak hour speed to existing peak hour speed

Source: Terry A. Hayes Associates

TABLE N-2

Policy Allocation Community Noise Equivalent Level (CNEL in decibels)

COMMUNITY	FREEWAY	ARTERIAL	COLLECTOR
Arleta-Pacoima	62	58	56
Beverly Crest	65	57	54
Boyle Heights	62	58	55
Brentwood	62	58	53
Canoga Park	63	57	53
Central City	61	57	55
Central City North	62	58	55
Chatsworth	62	57	54
Encino-Tarzana	63	58	52
Granada Hills	62	57	54
Harbor Gateway	62	57	55
Hollywood	62	58	55
Mission Hills	63	59	55
North Hollywood	62	58	56
Northeast LA	62	58	55
Northridge	62	58	55
Palms	62	57	54
Reseda	62	58	55
San Pedro	57	55	53
Sherman Oaks	63	58	55
Silverlake	62	58	56
South Central LA	60	57	55
Southeast LA	62	56	54
Sun Valley	61	57	55
Sunland-Tujunga	62	58	55
Sylmar	63	57	52
Van Nuys	63	58	55
Venice	0	57	52
West Adams	63	58	54
West LA	63	58	55
Westchester	63	57	52
Westlake	60	58	55
Westwood	65	57	52
Wilmington	60	57	55
Wilshire	63	58	56
Maximum Value	65	59	56

Notes: Sound level calculated for 20 feet outside right-of-way.
Assumes sound propagation over hard surface with no barriers
Assumes at grade vertical alignment of all facilities.

TABLE N-3

RELATIVE CHANGES IN TRAFFIC VOLUME, DAILY AVERAGE SPEED AND CNEL FOR THEORETICAL BUILDOUT

Facility Type	Volume - Average Daily Traffic			Average Speed			CNEL		
	Existing	Theor. Bldout.	% Change	Existing /a/	Theor. Bldout.	% Change	Existing	Theor. Bldout.	% Change
Freeways	297,720	521,676	+75	48	24	-50	69	67	-3
Arterials	264,390	408,685	+55	32	19	-41	63	60	-5
Collectors	42,583	69,725	+64	21	13	-38	59	58	-2

/a/ 1990 average daily speed
 Source: Terry A. Hayes Associates

TABLE N-4

RELATIVE CHANGES IN TRAFFIC VOLUME, DAILY AVERAGE SPEED AND CNEL FOR ALTERNATIVE A

Facility Type	Volume - Average Daily Traffic			Average Speed			CNEL		
	Existing	Alt A.	% Change	Existing /a/	Alt A. /b/	% Change	Existing	Alt A.	% Change
Freeways	297,720	486,914	+64	48	27	-44	69	65	-6
Arterials	264,390	361,980	+37	32	23	-28	63	61	-3
Collectors	42,583	65,311	+53	21	14	-33	59	57	-2

/a/ 1990 average daily speed
 /b/ Estimated by applying ratio of future peak hour speed to existing peak hour speed
 Source: Terry A. Hayes Associates

TABLE N-5

RELATIVE CHANGES IN TRAFFIC VOLUME, DAILY AVERAGE SPEED AND CNEL FOR COMMUNITY PLAN BUILDOUT

Facility Type	Volume - Average Daily Traffic			Average Speed			CNEL		
	Existing	CPA Bldout.	% Change	Existing /a/	CPA Bldout.	% Change	Existing	CPA Bldout.	% Change
Freeways	297,390	586,376	+97	48	17	-65	69	62	-10
Arterials	264,390	508,636	+92	32	15	-53	63	59	-6
Collectors	42,583	87,573	+106	21	11	-48	59	56	-5

/a/ 1990 average daily speed
 Source: Terry A. Hayes Associates

TABLE N-6
RELATIVE CHANGES IN TRAFFIC VOLUME, DAILY AVERAGE SPEED AND CNEL FOR
2010 MARKET

Facility Type	Volume - Average Daily Traffic			Average Speed			CNEL		
	Existing	CPA. Bldout.	% Change	Existing /a/	CPA. Bldout.	% Change	Existing	CPA. Bldout.	% Change
Freeways	297,720	417,192	+40	48	34	-29	69	62	-6
Arterials	264,390	366,140	+46	32	26	-19	63	58	-8
Collectors	42,583	59,782	+40	21	17	-19	59	56	-5

/a/ 1990 average daily speed
 Source: Terry A. Hayes Associates

TABLE N-7

**RELATIVE CHANGES IN TRAFFIC VOLUME, DAILY AVERAGE SPEED AND CNEL FOR
NO PROJECT, NO GROWTH**

Facility Type	Volume - Average Daily Traffic			Average Speed			CNEL		
	Existing	CPA. Bldout.	% Change	Existing /a/	CPA. Bldout.	% Change	Existing	CPA. Bldout.	% Change
Freeways	297,720	391,401	+32	48	38	-21	69	65	-6
Arterials	264,390	315,764	+19	32	29	-9	63	58	-8
Collectors	42,583	52,364	+23	21	19	-10	59	55	-7

/a/ 1990 average daily speed
Source: Terry A. Hayes Associates

2.20.6 *Mitigation Measures*

In conformance with Caltrans noise abatement policies, if noise levels in residential areas exceed the threshold of 65 decibels, it is anticipated that a soundwall construction program will be developed and planned adjacent to residential areas on the city freeway system.

2.20.8 *Level of Impact Significance*

None.