4.10 NOISE

This section of the EIR analyzes the potential environmental effects on noise and groundborne vibration associated with construction and operational activities from implementation of the proposed Granada Hills–Knollwood and implementing ordinances and the proposed Sylmar Community Plan and implementing ordinances (proposed plans). One comment at the March 3, 2008, public hearing addressing noise was received in response to the Notice of Preparation (NOP) circulated for the proposed plans.

The Initial Study/Notice of Preparation (IS/NOP) (included as Appendix A) identified the potential for impacts associated with the following: exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance; exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels; and a substantial temporary and/or permanent increase in ambient noise levels in the project vicinity. Issues scoped out from further analysis in the EIR include proximity to or association with an airport land use plan or airstrip, as the CPA is not located within an airport land use plan or affected area near an airstrip. Data used to prepare this report were taken from the City of Los Angeles General Plan Noise Element, the City of Los Angeles Municipal Code (LAMC), the Traffic Study prepared by Iteris (Appendix F1 [Transportation Improvement Mitigation Program (Granada Hills–Knollwood)] and Appendix F2 [Transportation Improvement Mitigation Program (Sylmar)]) for the proposed plans, and information obtained by measuring and modeling existing and future noise levels in the CPAs (Appendix E1 [Noise Data (Granada Hills–Knollwood)] and Appendix E2 [Noise Data (Sylmar)]). Full reference-list entries for all cited materials are provided in Section 4.10.5 (References).

4.10.1 Environmental Setting

Fundamentals of Sound and Environmental Noise

Sound is technically described in terms of amplitude (loudness) and frequency (pitch). The standard unit of sound amplitude measurement is the decibel (dB). The decibel scale is a logarithmic scale that describes the physical intensity of the pressure vibrations that make up any sound. The pitch of the sound is related to the frequency of the pressure vibration. Because the human ear is not equally sensitive to a given sound level at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) provides this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear.

Noise, on the other hand, is typically defined as unwanted sound because of its potential to disrupt sleep, interfere with speech communication, and damage hearing. A typical noise environment consists of a base of steady "background" noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These can vary from an occasional aircraft or train passing by to virtually continuous noise from, for example, traffic on a major highway. Table 4.10-1 (Representative Environmental Noise Levels) lists representative noise levels for the environment.

Table 4.10-1 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—	
Lowest Threshold of Human Hearing	—0—	Lowest Threshold of Human Hearing

SOURCE: California Department of Transportation, *Traffic Noise Analysis Protocol for New Highway Construction and Highway Reconstruction Projects* (October 1998).

Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise upon people is largely dependent upon the total acoustical energy content (loudness) of the noise, as well as the time of day when the noise occurs. The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL are measures of community noise. Each is applicable to this analysis and defined as follows:

- L_{eq}, the equivalent energy noise level, is 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.
- L_{dn}, the Day-Night Average Level, is a 24-hour average L_{eq} with a 10 dBA "weighting" added to noise during the hours of 10:00 PM to 7:00 AM to account for noise sensitivity in the nighttime. The

logarithmic effect of these additions is that a 60 dBA 24 hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.

- *CNEL*, the Community Noise Equivalent Level, is a 24-hour average L_{eq} with a 5 dBA "weighting" during the hours of 7:00 PM to 10:00 PM and a 10 dBA "weighting" added to noise during the hours of 10:00 PM to 7:00 AM to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24 hour L_{eq} would result in a measurement of 66.7 dBA CNEL.
- L_{min}, the minimum instantaneous noise level experienced during a given period of time.
- L_{max}, the maximum instantaneous noise level experienced during a given period of time.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night, or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings that can provide noise levels as low as 20 dBA and quiet, suburban, residential streets that provide noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with more noisy urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA).

When evaluating changes in 24-hour community noise levels, a difference of 3 dBA is a barely perceptible increase to most people. A 5 dBA increase is readily noticeable, while a difference of 10 dBA would be perceived as a doubling of loudness.

Noise levels from a particular source decline as distance to the receptor increases. Other factors, such as the weather and reflecting or shielding, also help intensify or reduce the noise level at any given location. A commonly used rule of thumb for roadway noise is that for every doubling of distance from the source, the noise level is reduced by about 3 dBA at acoustically "hard" locations (i.e., where the area between the noise source and the receptor is nearly complete asphalt, concrete, hard-packed soil, or other solid materials) and 4.5 dBA at acoustically "soft" locations (i.e., where the area between the source and receptor is normal earth or has vegetation, including grass). Noise from stationary or point sources is reduced by about 6 to 7.5 dBA for every doubling of distance at acoustically hard and soft locations, respectively. Noise levels may also be reduced by intervening structures; generally, a single row of buildings between the receptor and the noise source reduces the noise level by about 5 dBA, while a solid wall or berm reduces noise levels by 5 to 10 dBA. The manner in which older homes in California were constructed (approximately 30 years old or older) generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units and office buildings is generally 30 dBA or more.[108]

[108] Harris Miller Miller & Hanson Inc., *Transit Noise and Vibration Impact Assessment, Final Report* (May 2006), p. 3-10

Existing Environmental Noise Levels

Granada Hills–Knollwood

Typical of suburban environments, the primary source of noise within the Granada Hills–Knollwood Community Plan Area (CPA) is noise from motor vehicles on roadways (traffic noise). These motor vehicles include automobiles, buses, trucks, and vehicles associated with construction equipment transport. Secondary noise sources in the CPA include construction activities and stationary sources, such as heating and ventilation systems (HVAC) on large commercial and multi-family residential uses.

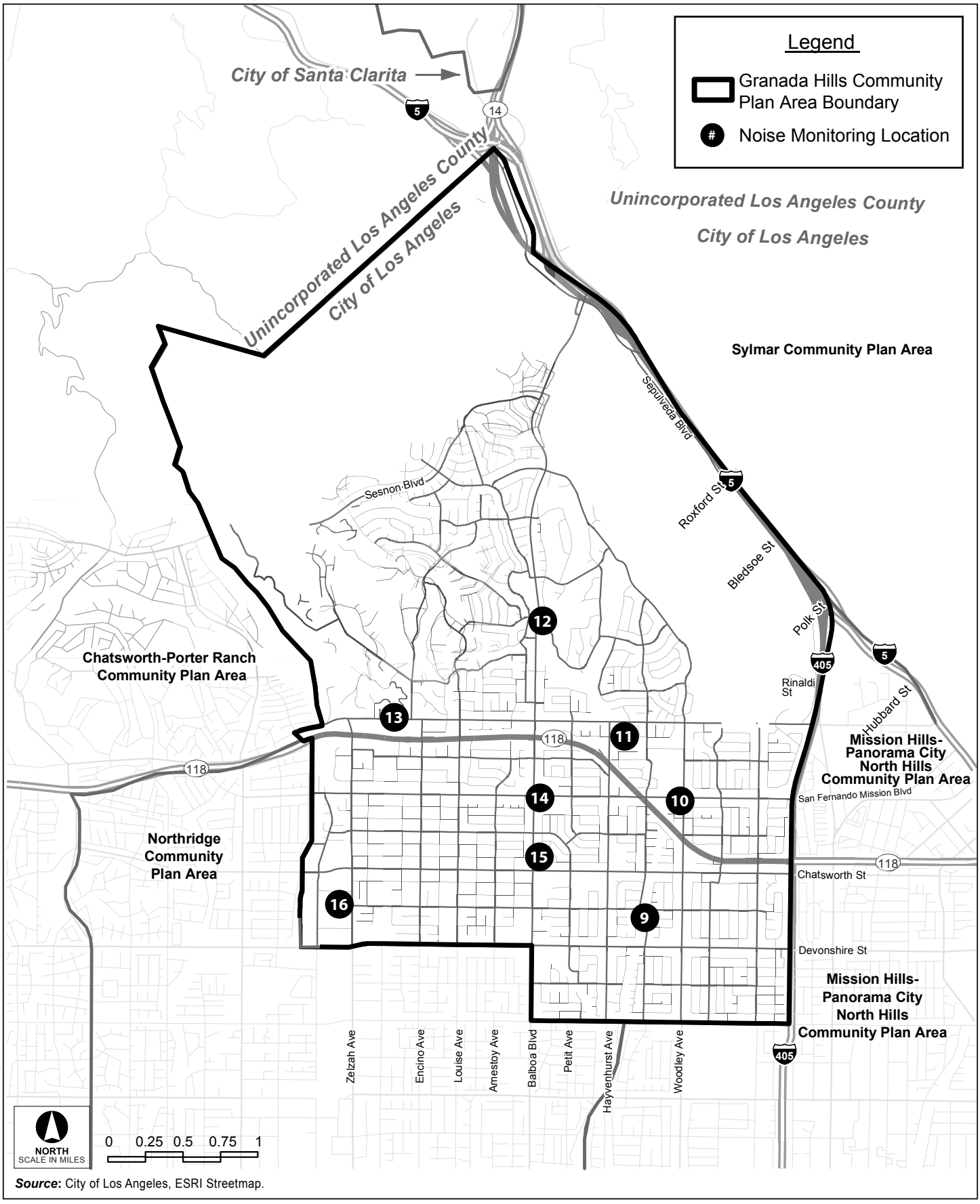
Existing daytime noise levels were monitored at eight (8) locations in the CPA, which are depicted in Figure 4.10-1 (Noise Monitoring Locations in the Granada Hills–Knollwood CPA), in order to identify representative noise levels at various sites. The noise levels were measured using a Larson-Davis Model 814 precision sound level meter, which satisfies the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation. The average noise levels and sources of noise measured at each location are identified in Table 4.10-2 (Existing Noise Levels in the Granada Hills–Knollwood CPA). These daytime noise levels are characteristic of a typical suburban area, with higher noise levels along major roadways, and lower levels along residential areas.

Table 4.10-2 Existing Noise Levels in the Granada Hills–Knollwood Area

	Location	*Primary Noise Sources*	*Noise Level Statistics*		
			L_{eq} *(dBA)*	L_{min} *(dBA)*	L_{max} *(dBA)*
1	East side of Woodley Avenue, north of Devonshire	Road Traffic on Woodley Avenue	67.3	48.0	85.2
2	Eastside of Woodley Avenue, south of San Fernando Mission Boulevard	Road Traffic on Woodley Avenue	65.5	53.5	78.1
3	East side of Monogram Street, north of Kalisher Street	Road Traffic on SR-118	56.3	51.8	68.4
4	Westside of Balboa Boulevard, north of Midwood Street	Road Traffic on Balboa Boulevard	72.7	51.0	87.6
5	North side of Rinaldi Street, between Shoshone Avenue and Ridgeway Drive	Road Traffic on Rinaldi Street	72.4	55.0	82.6
6	West side of Balboa Boulevard, south of San Fernando Mission Boulevard	Road Traffic on Balboa Boulevard	73.7	57.6	84.6
7	West side of Balboa Boulevard, north of Chatsworth Street	Road Traffic on Balboa Boulevard	71.6	54.6	82.4
8	West side of Zelzah Avenue, south of San Jose Street.	Road Traffic on Zelzah Avenue	70.9	49.1	81.9

SOURCE: Atkins (May 2012).

Existing roadway noise levels were calculated for roadway segments in the CPA that are proximate to existing or future noise-sensitive uses and would receive a moderate to large share of the project trips. This task was accomplished using the Federal Highway Administration Highway Noise Prediction Model (FHWA-RD-77-108) and traffic volumes from the project traffic analysis. The model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and



***Source*:** City of Los Angeles, ESRI Streetmap.

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Figure 4.10-1

Noise Monitoring Locations in the Granada Hills–Knollwood CPA

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site environmental conditions. The average vehicle noise rates (energy rates) utilized in the FHWA Model have been modified to reflect average vehicle noise rates identified for California by Caltrans. The Caltrans data show that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels. The average daily noise levels along these roadway segments are presented in Table 4.10-3 (Existing Roadway Noise Levels in the Granada Hills–Knollwood CPA). As shown in Table 4.10-3, vehicle noise levels are greater along major roadways and arterials, and lower within residential neighborhoods and along collector roads.

Table 4.10-3 Existing Roadway Noise Levels in the Granada Hills–Knollwood CPA

Roadway	*Roadway Segment*	*dBA L_{dn}*
Balboa Boulevard	Timber Ridge to San Fernando Road	70.6
	Sesnon Street to Orozco Street	69.3
	Kingsburry Street to San Jose Street	66.5
Chatsworth Street	Zelzah Avenue to Whiteoak Avenue	60.2
	Haskell Avenue to I-405	62.3
Rinaldi Street	Haskell Avenue to Blucher Avenue	63.2
	White Oak Avenue to Louise Avenue	63.9
Woodley Avenue	San Fernando Mission Boulevard to Chatsworth Street	65.6
Shoshone Street	Nugent Drive to Mayerling Street	52.0
Zelzah Avenue	Chatsworth Street to San Jose Avenue	59.6
	San Fernando Mission Boulevard to Chatsworth Street	58.6
San Fernando Mission Boulevard	Louise Avenue to Zelzah Avenue	59.4
San Jose Avenue	Amestoy Avenue to Encino Avenue	60.9
Devonshire Street	Haskell Avenue to Aqueduct Avenue	67.5
Havenhurst Avenue	Tulsa Street to San Fernando Mission Road	63.1
Lassen Street	Montgomery Avenue to Haskell Avenue	62.8

SOURCE: Atkins (2012) (calculation data and results are provided in Appendix E1)

Sylmar

The primary source of noise within the Sylmar CPA is noise from motor vehicles on roadways (traffic noise). These motor vehicles include automobiles, buses, trucks, and vehicles associated with construction equipment transport. Secondary noise sources in the CPA include construction activities, freight and commuter rail services, industrial uses and stationary sources, such as heating and ventilation systems (HVAC) on large commercial and multi-family residential uses. One rail line runs through the Sylmar CPA, entering from the east at the I-5 Freeway and paralleling San Fernando Road to the CPA limit at Hubbard Street to the west, with the Sylmar/San Fernando Metrolink Station located at 12219 Frank Modugno Drive. Currently, there are a total of twenty-four Metrolink trains that travel through the

CPA each weekday.[109] In addition, up to five Union Pacific trains pass through the area each day.[110] Rail transit traveling at grade typically produces a noise level of 80 dBA at a distance of 50 feet from the tracks while rail transit stopped at a station typically produces a noise level of 65 dBA at a distance of 50 feet.[111] In addition, the sounding of train horns, which is required when approaching at-grade crossings with streets and highways for safety reasons, represents the highest noise levels associated with train services. The sounding of a train horn can generate noise levels in excess of 110 dBA at a distance of 100 feet.

Existing daytime noise levels were monitored at eight locations in the CPA, which are depicted in Figure 4.10-2 (Noise Monitoring Locations in the Sylmar CPA), in order to identify representative noise levels at various sites. The noise levels were measured using a Larson-Davis Model 814 precision sound level meter, which satisfies the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation. The average noise levels and sources of noise measured at each location are identified in Table 4.10-4 (Existing Noise Levels in the Sylmar CPA). These daytime noise levels are characteristic of a typical suburban area, with higher noise levels along major roadways, and lower levels along residential areas.

Table 4.10-4 Existing Noise Levels in the Sylmar CPA

	Location	*Primary Noise Sources*	*Noise Level Statistics*		
			L_{eq} *(dBA)*	L_{min} *(dBA)*	L_{max} *(dBA)*
1	South side Carol Lane, west of Yarnell Street	Road Traffic on Carol Lane	53.8	46.8	70.8
2	South Side of Foothill Boulevard between Glenoaks Boulevard and Roxford Street	Road Traffic on I-210 and Foothill Boulevard	69.9	58.2	84.3
3	East side of Cranston Avenue, South of Harding Street	Road Traffic on Cranston Avenue	53.9	46.0	68.0
4	West side of Adelphia Avenue, south of Maclay Street	Road Traffic on Adelphia Avenue and I-210	56.9	50.8	71.0
5	South side of Beaver Street, west of Wheeler Avenue	Road Traffic on Beaver Street	59.5	45.4	77.2
6	Westside of San Fernando Road, between Tyler Street and El Casco Street	Road Traffic on San Fernando Road and Metrolink	70.8	53.5	84.6
7	South side of Cobalt Street, between Herrick Avenue and Glenoaks Boulevard	Road Traffic on Cobalt Street	62.0	44.5	76.3
8	South Side of Larkspur Street, west of Telfair Avenue	Road Traffic on Larkspur Street	59.7	49.9	76.2

SOURCE: Atkins (May 2012).

[109] Metrolink, Sylmar/San Fernando Station, http://www.metrolinktrains.com/stations/detail/station_id/129.html (accessed August 20, 2012).
[110] Metropolitan Transportation Authority, Advance of Funds for Antelope Valley Line Track Work Projects (2010), http://www.metro.net/board/Items/2010/10_October/20101020P&PItem2.pdf (accessed April 4, 2011).
[111] Harris Miller Miller & Hanson Inc., *Transit Noise and Vibration Impact Assessment, Final Report* (May 2006).

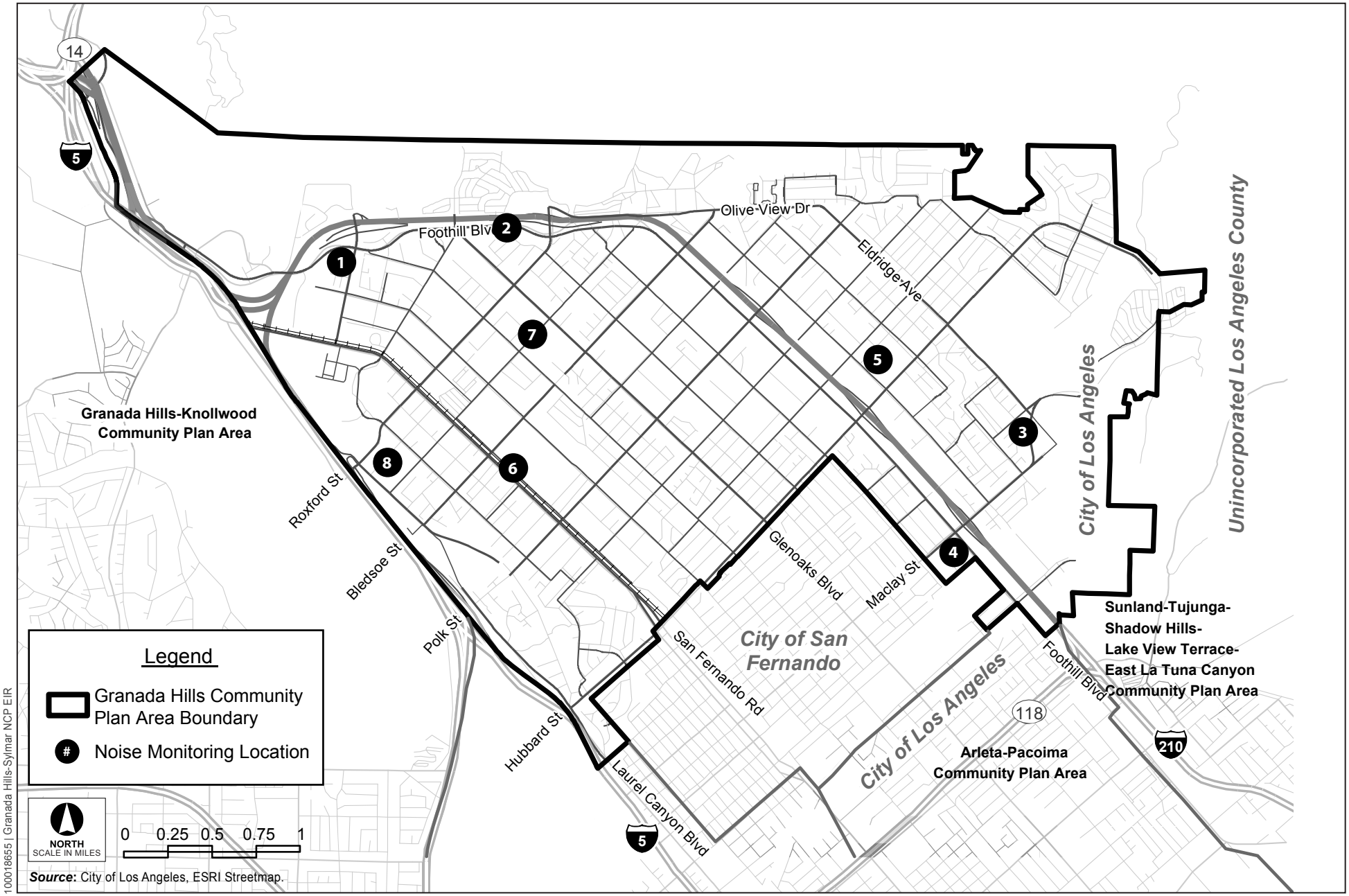

Figure 4.10-2

Noise Monitoring Locations in the Sylmar CPA

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Existing roadway noise levels were calculated for roadway segments in the Sylmar CPA that are proximate to existing or future noise-sensitive uses and would receive a moderate to large share of the project trips. This task was accomplished using the Federal Highway Administration Highway Noise Prediction Model (FHWA-RD-77-108) and traffic volumes from the project traffic analysis. The model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (energy rates) utilized in the FHWA Model have been modified to reflect average vehicle noise rates identified for California by Caltrans. The Caltrans data show that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels. The average daily noise levels along these roadway segments are presented in Table 4.10-5 (Existing Roadway Noise Levels in the Sylmar CPA). As shown in Table 4.10-5, vehicle noise levels are greater along major roadways and arterials, and lower within residential neighborhoods and along collector roads.

Table 4.10-5 Existing Roadway Noise Levels in the Sylmar CPA

Roadway	*Roadway Segment*	*dBA L_{dn}*
Harding Street	Cranston Avenue to Maclay Street	57.8
Hubbard Street	Kismet Avenue to Lexicon Avenue	65.5
	Gladstone Avenue to Wheeler Avenue	65.4
	Foothill Boulevard to Gladstone Avenue	68.0
Maclay Street	Foothill Boulevard to Gladstone Avenue	61.4
Arroyo Street	Foothill Boulevard to Gladstone Avenue	59.7
Polk Street	Fenton Avenue to Eldrige Avenue	62.7
	De Garmo Avenue to Borden Avenue	64.3
	Borden Avenue to Foothill Boulevard	64.1
Roxford Street	Glenoaks Boulevard to Fellows Avenue	56.4
	Bradley Avenue to Herrick Avenue	62.7
Cobalt Street	Bradley Avenue to Foothill Boulevard	58.5
Astoria Street	Ralston Avenue to Bradley Avenue	45.6
San Fernando Road	Polk Street to Astoria Street	64.4
	Bledsoe Street to Tyler Street	60.6
	Roxford Street to Larkspur Avenue	61.7
Foothill Boulevard	Yarnell Street to Filbert Street	59.4
	Yarnell Street to Balboa Boulevard	59.0

SOURCE: Atkins (2012) (calculation data and results are provided in Appendix E2)

Fundamentals of Environmental Groundborne Vibration

Vibration is sound radiated through the ground. The vibration of floors and walls may cause perceptible vibration, rattling of items such as windows or dishes on shelves, or a rumble noise. The rumbling sound

caused by the vibration of room surfaces is called groundborne noise. The ground motion caused by vibration is measured as particle velocity in inches per second and, in the U.S., is referenced as vibration decibels (VdB).

The background vibration velocity level in residential and educational areas is usually around 50 VdB. The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. As such, the range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

The general human response to different levels of groundborne vibration velocity levels is described in Table 4.10-6 (Human Response to Different Levels of Groundborne Vibration).

Table 4.10-6 Human Response to Different Levels of Groundborne Vibration

Vibration Velocity Level	*Human Reaction*
65 VdB	Approximate threshold of perception for many people.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

SOURCE: Harris Miller Miller & Hanson Inc. *Transit Noise and Vibration Impact Assessment, Final Report* (May 2006).

Existing Groundborne Vibration Levels

Granada Hills–Knollwood

Aside from seismic events, the greatest source of groundborne vibration in the Granada Hills–Knollwood area is roadway truck and bus traffic. Trucks and buses typically generate groundborne vibration velocity levels of around 63 VdB. These levels could reach 72 VdB where trucks and buses pass over bumps in the road.

Sylmar

Similar to the Granada Hills–Knollwood area, the greatest source of groundborne vibration in the Sylmar area is roadway truck and bus traffic, with vibration levels of up to 72 VdB where trucks and busses pass over bumps in the road. Additionally, there is a commuter rail located in Sylmar, and trains typically generate noticeable ground-borne vibration velocity levels at the edge of the right-of-way and can generate groundborne vibration levels of 75 VdB to 85 VdB 50 feet from the source.

Noise-Sensitive Receptors

The City of Los Angeles General Plan Noise Element identifies noise-sensitive uses with the goal of protecting such uses from excessive noise levels. The Noise Element considers the following land uses as "noise-sensitive" uses: single-family and multi-unit dwellings; long-term care facilities (including convalescent and retirement facilities); dormitories; motels; hotels; transient lodgings and other residential uses; houses of worship; hospitals; libraries; schools; auditoriums; concert halls; outdoor theaters; nature and wildlife preserves, and parks. All of these uses are located in the Granada Hills–Knollwood and Sylmar CPAs.

4.10.2 Regulatory Framework

Federal

There are no federal regulations related to noise that apply to the proposed plans.

State

State Department of Health Services

The state Office of Noise Control in the state Department of Health Services has established guidelines to provide a community with a noise environment that it deems to be generally acceptable. Specifically, ranges of noise exposure levels have been developed for different land uses to serve as the primary tool a city uses to assess the compatibility between land uses and outdoor noise.

California Noise Insulation Standards (California Code of Regulations, Title 24)

Title 24 establishes an interior noise standard of 45-dBA for multiple unit residential and hotel/motel structures. Acoustical studies must be prepared for proposed multiple unit residential and hotel/motel structures within the CNEL noise contours of 60-dBA or greater. The studies must demonstrate that the design of the building will reduce interior noise to 45-dBA CNEL or lower.

Local

City of Los Angeles Municipal Code

Los Angeles Municipal Code (LAMC) Chapter IV, Article 1, Section 41.40 states that no construction or repair work shall be performed between the hours of 9:00 PM and 7:00 AM Monday through Friday, since such activities would generate loud noises and disturb persons occupying sleeping quarters in any adjacent dwelling, hotel, or apartment or other place of residence. No person, other than an individual homeowner engaged in the repair or construction of his single-family dwelling, shall perform any construction or repair work of any kind or perform such work within 500 feet of land so occupied before 8:00 AM or after 6:00 PM on any Saturday or on a national holiday, or at any time on any Sunday. Under certain conditions, the City of Los Angeles may grant a waiver to allow limited construction activities to occur outside of the time limits described above.

LAMC, Chapter XI, Section 112.05 specifies the maximum noise level of powered equipment or powered hand tools. Any powered equipment or powered hand tool that produces a noise level exceeding 75 dBA at a distance of 50 feet is prohibited. However, this noise limitation does not apply where compliance is technically infeasible. "Technically infeasible" means that the noise standard cannot be met despite the use of mufflers, shields, sound barriers, and/or any other noise-reduction device or techniques during the operation of equipment.

Outside of construction noise requirements, LAMC Section 111.03 identifies presumed ambient noise levels for different zoning designations, as shown in Table 4.10-7 (City of Los Angeles Presumed Ambient Noise Levels). The noise levels shown in Table 4.10-7 are to be used in place of measured ambient noise levels when the measured ambient noise levels are less than those identified in the table below. An increase of more than 5 dB above presumed or measured ambient noise levels, whichever is greater, is prohibited (Sections 114.02(a)3 and 112.04(b)).

Table 4.10-7 City of Los Angeles Presumed Ambient Noise Levels

Zones	*Presumed Ambient Noise Levels*	
	Day: 7:00 AM to 10:00 PM	*Night: 10:00 PM to 7.00 AM*
A1, A2, RA, RE, RS, RD, RW1, RW2, R1, R2, R3, R4, and R5	50 dBA	40 dBA
P, PB, CR, C1, C1.5, C2, C4, C5, and CM	60 dBA	55 dBA
M1, MR1, and MR2	60 dBA	55 dBA
M2 and M3	65 dBA	65 dBA

SOURCE: *City of Los Angeles Municipal Code*, Section 111.03.

LAMC Section 112.02 requires that any heating, ventilation, and air conditioning (HVAC) system within any zone of the City not cause an increase in ambient noise levels on any other occupied property or if a condominium, apartment house, duplex, or attached business, within any adjoining unit to exceed the ambient noise level by more than 5 dBA.

City of Los Angeles General Plan

The California Government Code requires that a noise element be included in the General Plan of each county and city in the state. Each local government's goals, objectives, and policies for noise control are established by the noise element of the General Plan and the passage of specific noise ordinances. The Noise Element of the City of Los Angeles General Plan addresses the issue of noise by identifying sources of noise in the City and providing objectives and policies that ensure that noise from various sources does not create an unacceptable noise environment. The Noise Element establishes standards to ensure that new development is compatible with existing land uses, based on the Governor's Office of Planning and Research "General Plan Guidelines." These noise standards are shown in Figure 4.10-3 (General Plan Guidelines for Noise-Compatible Land Use). As shown in Figure 4.10-3, a noise level standard of 50 dBA CNEL is used for the exterior living areas of new residential land uses. Where a land use is denoted as "normally acceptable" for the given CNEL noise environment, the highest noise level in that range should be considered the maximum desirable for conventional construction that does not incorporate any special acoustic treatment. The acceptability of noise environments classified as

(Based on the Governor's Office of Planning and Research, "General Plan Guidelines", 1990. To help guide determination of appropriate land use and mitigation measures vis-a-vis existing or anticipated ambient noise levels)

Land Use Category	Day-Night Average Exterior Sound Level (CNEL dB)						
	50	55	60	65	70	75	80
Residential Single Family, Duplex, Mobile Home	A	C	C	C	N	U	U
Residential Multi-Family	A	A	C	C	N	U	U
Transient Lodging, Motel, Hotel	A	A	C	C	N	U	U
School, Library, Church, Hospital, Nursing Home	A	A	C	C	N	N	U
Auditorium, Concert Hall, Ampitheater	C	C	C	C/N	U	U	U
Sports Arena, Outdoor Spectator Sports	C	C	C	C	C/U	U	U
Playground, Neighborhood Park	A	A	A	A/N	N	N/U	U
Golf Course, Riding Stable, Water Recreation, Cemetery	A	A	A	A	N	A/N	U
Office Building, Business, Commercial, Professional	A	A	A	A/C	C	C/N	N
Agriculture, Industrial, Manufacturing, Utilities	A	A	A	A	A/C	C/N	N

A = Normally acceptable. Specified land use is satisfactory, based upon assumption buildings involved are conventional construction, without any special noise insulation.

C = Conditionally acceptable. New construction or development only after a detailed analysis of noise mitigation is made and needed noise insulation features are included in project design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning normally will suffice.

N = Normally unacceptable. New construction or development generally should be discouraged. A detailed analysis of noise reduction requirements must be made and noise insulation features included in the design of a project.

U = Clearly unacceptable. New construction or development generally should not be undertaken.

Source: City of Los Angeles, City Planning Commission, November 12, 1998, Adopted by the City Council, February 3,1999.

Figure 4.10-3

General Plan Guidelines for Noise-Compatible Land Use

"conditionally acceptable" or "normally unacceptable" will depend on the anticipated amount of time that will normally be spent outside the structure and the acoustic treatment to be incorporated in the structure's design.

Goals are described as a general setting of direction, objectives as intermediate steps in attaining the goal, policies as specific guides to decision-making, and programs as specific means of achieving the policies. The Noise Element goals, objectives, and policies that are relevant to the proposed plan are identified below in Table 4.10-8 (General Plan Policies Relevant to Noise). Specific programs that would serve to reduce potential noise impacts are described under Section 4.10.3 (Project Impacts and Mitigation).

Table 4.10-8 General Plan Policies Relevant to Noise

No.	*Policy*
Policy 2.2	Enforce and/or implement applicable city, state, and federal regulations intended to mitigate proposed noise producing activities, reduce intrusive noise, and alleviate noise that is deemed a public nuisance.
Policy 3.1	Develop land use policies and programs that will reduce or eliminate potential and existing noise impacts.

SOURCE: City of Los Angeles General Plan, Noise Element, adopted 1999

Proposed Plan Policies

The proposed plans include several policies that are directly and indirectly related to noise. Table 4.10-9 (Proposed Granada Hills–Knollwood Community Plan Policies) and Table 4.10-10 (Proposed Sylmar Community Plan Policies) list the proposed policies that are applicable to issues of community noise.

Table 4.10-9 Proposed Granada Hills–Knollwood Community Plan Policies

Policy No.	*Policy*
Policy LU14.2	Design and Screening. Set commercial buildings back from property lines, and utilize landscape buffers and decorative walls to minimize visual and operational impacts of commercial development on the surrounding residential neighborhoods.
Policy M13.1	Industrial Center Siting. Site regional distribution centers and other industrial districts proximate to the freeway system, regional truck routes, and rail lines, avoiding adjacency to residential neighborhoods.
Policy M13.2	Efficient Truck and Freight Movement. Provide appropriately designed and maintained roadways to safely accommodate truck travel and minimize adverse impacts of freight transport on residential neighborhoods.
Policy M13.3	On-site Loading. Ensure that all commercial and industrial development has adequate off-street accommodations for loading and unloading of commercial vehicles. Minimize potential conflicts between truck loading and unloading and pedestrian, bicycle, and transit access and circulation.

Consistency Analysis

The analysis includes City requirements and mitigation measures to ensure that noise levels in the exterior activity environments meet City standards, including limiting the hours of construction in accordance with the City of Los Angeles Municipal Code.

Table 4.10-10 Proposed Sylmar Community Plan Policies

Policy No.	*Policy*
Policy LU12.2	Commercial Development. Locate new commercial uses within existing established commercial areas. Accommodate larger projects in designated Community Centers and near the Sylmar/San Fernando Metrolink Station to minimize impact on residential neighborhoods and help retain the existing community fabric.
Policy LU22.2	Neighborhood Compatibility. Require design techniques, such as appropriate building orientation and scale, landscaping, buffering, noise insulation and increased setbacks, in the development of new industrial properties, particularly adjacent to non-industrial uses, to improve land use compatibility with adjacent uses and to enhance the physical environment.
Policy LU22.3	Transitional Uses. Require transitions for industrial uses, including scale, massing, and setbacks, in those areas in close proximity to residential neighborhoods.
Policy LU22.4	Landscaped Buffers. Incorporate landscaped buffers between the buildings and abutting properties. Methods to buffer projects should include a combination of increased setbacks, landscaping, berms and/or screening, and fencing.
Policy M11.1	Traffic Calming. Support traffic calming measures and parking management for local and collector streets where demonstrated need exists and with active community involvement.
Policy M11.2	Traffic Mitigations for Development. Require major developments to mitigate traffic impacts on residential neighborhoods.
Policy M13.1	Industrial Center Siting. Site regional distribution centers and other industrial districts proximate to the freeway system, regional truck routes, and rail lines, avoiding adjacency to residential neighborhoods.
Policy M13.2	Goods Movement. Encourage the efficient movement of goods by rail through development of efficient intermodal freight facilities and a shift of a portion of the goods previously moved by trucks onto the rail freight system. Limit truck traffic in residential and commercial areas to designated truck routes.
Policy M13.4	Truck Movement. Provide appropriately designed and maintained roadways to safely accommodate truck travel and minimize the adverse impacts of freight transport on residential neighborhoods.
Policy M13.5	On-site Loading. Ensure that all commercial and industrial development have adequate off-street accommodations for loading and unloading of commercial vehicles. Minimize potential conflicts between truck loading and unloading and pedestrian, bicycle, and transit access and circulation.

The proposed plans would be consistent with the Policy 3.1 of the City's Noise Element. As identified below under Impact 4.10-1, development of new residences in areas where existing noise levels currently exceed the City standard would be required to demonstrate that interior and exterior noise standards would be met through design or acoustical treatment.

As demonstrated below, the proposed plan would generate increased local traffic volumes in the near term but actually reduce net long-term trips as a result of the incorporation of mixed uses, pedestrian walkways, and connections to nearby transit. Further, as discussed below, the proposed plans would not increase local ambient noise levels by more than the identified threshold (0.3 dBA) under near-term conditions when compared to anticipated noise levels without the proposed plans. With respect to long-term conditions, because the proposed plans are anticipated to result in fewer future vehicle trips than would the current Community Plan for the CPAs, noise levels would actually decrease under long-term conditions compared to long-term conditions without implementation of the land use changes under the proposed plans. Therefore, the proposed plans would not conflict with these applicable policies.

4.10.3 Project Impacts and Mitigation

Analytic Method

This analysis of the existing and future noise environments is based on noise-level monitoring, noise-prediction modeling, and empirical observations. As defined in the City's General Plan Noise Element, noise-sensitive land uses residential uses; houses of worship; hospitals; libraries; schools; auditoriums; concert halls; outdoor theaters; nature and wildlife preserves, and parks. Therefore, for the purposes of this analysis, the nearest existing sensitive receptors to the project site would be the residential uses located within 50 feet of the potential areas of change as identified in Chapter 3 (Project Description).

Existing noise levels were monitored at selected locations within the project area using a Larson-Davis Model 814 precision sound-level meter, which is consistent with the standards of the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation. Noise modeling procedures involved the calculation of existing and future vehicular noise levels along individual roadway segments in the project area. These roadways were selected in consultation with City of Los Angeles staff based on the anticipated increase in traffic upon build-out of the proposed plans, the presence of noise-sensitive land uses along the roadways, and along roadways that transition from high-intensity industrial or commercial uses into lower intensity residential areas. The modeling was accomplished using the Federal Highway Administration (FHWA) Highway Noise Prediction Model (FHWA RD 77 108). The model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. Traffic volumes utilized as data inputs in the noise prediction model were provided by the Traffic Impact Analysis prepared by Iteris Inc. for the proposed plans. The analysis considers future cumulative traffic noise levels, in recognition of expected higher traffic volumes and resultant noise levels in the future, which provide an appropriate benchmark against which future noise resulting from implementation of the proposed plans can be assessed.

The Los Angeles CEQA Thresholds Guide (2006) sets forth guidance for the determination of significance of noise related impacts. This guidance is based on CEQA Guidelines Appendix G and provides specific criteria to be considered when making a significance determination. In some cases, the Thresholds Guide includes quantitative thresholds. For purposes of this analysis, Thresholds Guide criteria are used, supplemented by the thresholds identified in Appendix G, where appropriate.

Thresholds of Significance

For purposes of this EIR, implementation of the proposed plans may have a significant adverse impact on noise if it would:

- Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
- Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels
- Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project

- Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project due to construction activities lasting more than 1 day that would result in noise levels that would exceed the existing ambient exterior noise levels pursuant to Los Angeles Municipal Code Chapter IV, Article 1, Section 41.40
- Would the operation of the proposed plans result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project
- If located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels
- If located within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels

Human Exposure to Vibration

The CEQA Guidelines also do not define the levels at which groundborne vibration or groundborne noise is considered "excessive." For the purpose of this analysis, groundborne vibration impacts associated with human annoyance would be significant if vibration caused by implementation of the proposed plans exceeds 85 VdB, which is the vibration level that is considered by the Federal Transit Administration (FTA) to be acceptable only if there are an infrequent number of events per day (as described in Table 4.10-6). In terms of groundborne vibration impacts on structures, this analysis will use the Federal Transit Administration's vibration damage threshold of approximately 100 VdB for fragile buildings and approximately 95 VdB for extremely fragile historic buildings.

Effects Not Found to Be Significant

The closest airport is Whiteman Airpark located at 12653 Osborne Street in Pacoima. Whiteman Airpark is approximately 3 miles east of the Granada Hills–Knollwood CPA and 3.75 southeast of the Sylmar CPA. The Van Nuys Airport is located at 16461 Sherman Way in Van Nuys. The Van Nuys Airport is approximately 5 miles south of the Granada Hills–Knollwood CPA and 7 miles southwest of the central portion of the Sylmar CPA. The Granada Hills–Knollwood CPA and Sylmar CPA are not subject to greater aviation noise levels than the rest of the City of Los Angeles. Neither CPA are within the airport influence areas for the Van Nuys Airport and the Whiteman Airpark.[112,113] There are no public or private airports within 2 miles of the CPAs, and implementation of their respective proposed plan would not result in excessive noise level exposure for people residing or working in the Granada Hills–Knollwood or the Sylmar CPAs. Furthermore, the CPAs are not located within the boundaries of an airport land use plan or airstrip. No impact would occur, and no further analysis of these issues is required in the EIR.

[112] Los Angeles County Airport Land Use Commission, Airport Influence Area Map for Van Nuys (2011), http://planning.lacounty.gov/assets/upl/project/aluc_airport-van-nuys.pdf.
[113] Los Angeles County Airport Land Use Commission, Airport Influence Area Map for Van Nuys (2011), http://planning.lacounty.gov/assets/upl/project/aluc_airport-van-nuys.pdf.

Less-Than-Significant Impacts

Impact 4.10-1 **Operation of development under the proposed plans could result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Compliance with LAMC regulations would ensure this impact is *less than significant*.**

Granada Hills–Knollwood

Sources of noise generated by implementation of development under the proposed plans would include new stationary sources such as HVAC systems. Large-scale HVAC systems would be installed for new limited industrial, commercial and multi-family residential buildings in the CPAs. Large HVAC systems could result in noise levels that average between 50 and 65 dBA L_{eq} at 50 feet from the equipment. It is assumed that most HVAC units would be mounted on the rooftops of all future limited industrial, commercial and multi-family buildings. As required by LAMC Section 112.02, all newly installed HVAC units would be required to reduce HVAC noise such that the noise levels of adjoining units and adjacent properties do not exceed ambient noise levels by 5 dB. Compliance with Section 112.02 would ensure that noise levels from the introduction of new HVAC units remains below LAMC standards and exposure to persons to noise levels above City standards would not occur.

New activity and noise would be introduced to the Granada Hills–Knollwood CPA, as new residences and people are attracted to the new mix of uses that would develop from implementation of the proposed plan. As shown in Table 4.10-2, noise monitoring in the Granada Hills–Knollwood CPA indicates that existing noise levels at various points in the CPA currently exceed the City noise standards for residential uses, especially where road traffic is concentrated. Development of new residential uses within the CPA where existing noise levels currently exceed the City standard would constitute a significant impact. Discretionary development projects would be required to comply with LAMC regulations.

Compliance with LAMC Section 112.02 would ensure that noise levels attributed to new HVAC systems would not increase noise levels above City standards. In addition, implementation of City Building Code regulations would ensure that exterior living spaces, such as porches and patios, are constructed in a manner that noise levels do not exceed City noise standards. Therefore, this impact would be reduced to a level of *less than significant*.

Sylmar

Sources of noise generated by implementation of development under the proposed plans would include new stationary sources such as HVAC systems. Large-scale HVAC systems would be installed for new limited industrial, commercial and multi-family residential buildings in the CPAs. Large HVAC systems could result in noise levels that average between 50 and 65 dBA L_{eq} at 50 feet from the equipment. It is assumed that most HVAC units would be mounted on the rooftops of all future limited industrial, commercial and multi-family buildings. As required by LAMC Section 112.02, all newly installed HVAC units would be required to reduce HVAC noise such that the noise levels of adjoining units and adjacent properties do not exceed ambient noise levels by 5 dB. Compliance with Section 112.02 would ensure

that noise levels from the introduction of new HVAC units remains below LAMC standards and exposure to persons to noise levels above City standards would not occur.

New activity and noise would be introduced to the Granada Hills–Knollwood CPA, as new residences and people are attracted to the new mix of uses that would develop from implementation of the proposed plans. As shown in Table 4.10-3, noise monitoring in the Sylmar CPA indicates that existing noise levels at various points in the CPA currently exceed the City noise standards for residential uses, especially where road traffic is most concentrated. Development of new residential uses within the CPA where existing noise levels currently exceed the City standard would constitute a significant impact. Discretionary development projects would be required to comply with LAMC regulations.

Compliance with LAMC Section 112.02 would ensure that noise levels attributed to new HVAC systems would not increase noise levels above City standards. In addition, implementation of City Building Code regulations would ensure that exterior living spaces, such as porches and patios, are constructed in a manner that noise levels do not exceed City noise standards. Therefore, this impact would be reduced to a level of *less than significant*.

Impact 4.10-2GHK Development under the proposed Granada Hills–Knollwood Community Plan would not result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. This impact is *less than significant*.

During activities associated with potential development under the proposed plan, background operational vibration levels would be expected to average around 50 VdB, as discussed previously in this section. This is substantially less than the 85 VdB threshold for people in the vicinity of the new development. Groundborne vibration resulting from operational activities would primarily be generated by trucks making periodic deliveries to the uses within the Granada Hills–Knollwood CPA boundaries. However, these types of deliveries would be consistent with deliveries that are currently made along roadways to commercial uses in the CPA boundaries and are not anticipated to increase groundborne vibration above existing levels because the proposed plan would increase the level of uses (residential) that do not typically require this type of delivery and decrease the level of uses (office and commercial) that do.

Because no substantial sources of groundborne vibration would be built as part of the proposed plan, no vibration impacts would occur during operation of the proposed plan. Therefore, operational activities related to development projects would not expose sensitive receptors within the CPA to excessive groundborne vibration or groundborne noise levels, and this impact is *less than significant*.

Impact 4.10-2SYL Development under the proposed Sylmar Community Plan could result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. This is a potentially significant impact. Project-level environmental review and implementation of mitigation measure MM4.10-1SYL for discretionary projects would reduce this impact to *less than significant*.

Similar to the proposed Granada Hills–Knollwood Community Plan, groundborne vibration resulting from operational activities would primarily be generated by trucks making periodic deliveries to the uses

within the CPA. These deliveries would be consistent with existing conditions in the Sylmar CPA, and no increase in operational vibration is anticipated as a result of implementation of the proposed Sylmar Community Plan.

Residential uses could be built in close proximity to existing railroad tracks as part of the Sylmar Community Plan. The FTA classifies passing trains as an infrequent event (less than 30 vibration events per day) and the impact level for residential uses would be 80 VdB. According to the FTA's Transit Noise and Vibration Impact Assessment, passenger and freight locomotives generate approximately 85 VdB at 50 feet and approximately 80 VdB at 100 feet.[114] It is anticipated that new residential uses could be located within 100 feet of the existing rail line along San Fernando Road. These residential uses would potentially experience vibration levels that exceed 80 VdB due to the rail line operations, and this would be a potentially significant impact. Mitigation measure MM4.10-1SYL has been identified to reduce this potential impact to levels beneath the 80 VdB threshold. MM4.10-1SYL would require that any future development within 150 feet of the existing rail line perform a site specific vibration analysis to determine the vibration levels at the project site. If the analysis concludes that vibration levels would exceed 80 VdB, then the project applicant shall prepare design measures to ensure that residential occupants would not be subjected to vibration levels greater than 72 VdB. The design could include the use of increase building foundation mass or vibration isolation design techniques. Upon completion of construction of the future project, the applicant shall demonstrate to the Department of Building and Safety that residential units would not experience vibration levels above 72 VdB prior to issuance of an occupancy permit. With implementation of MM4.10-1SYL, operation of development pursuant to the proposed Sylmar Community Plan would not expose sensitive receptors on or off site to excessive groundborne vibration or groundborne noise levels, and this impact would be *less than significant*.

Impact 4.10-3 **Implementation of the proposed plans would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. This would be a *less-than-significant* impact.**

Granada Hills–Knollwood

Substantial permanent increases in noise would occur primarily as a result of increased traffic on local roadways due to the new mix of uses that could develop from implementation of the proposed Granada Hills–Knollwood Community Plan. As stated in the Thresholds of Significance, an increase in 3 dBA in CNEL that would result in exterior noise levels reaching or exceeding the "normally unacceptable" or "clearly unacceptable" category, or any 5 dBA or greater noise increase would be considered significant. As shown in Table 4.10-11 (Current and Future [2030] Roadway Noise Levels [Granada Hills–Knollwood]), existing roadway noise levels were compared to future roadway noise projections without the project (2030) and future roadway noise projections with the project (2030). As shown in Table 4.10-11, increases in roadway noise levels with the Granada Hills–Knollwood proposed plan would not increase by more than 1.0 dBA CNEL compared to future roadway noise levels without the proposed plan, and, therefore, this increase would be considered less than significant.

[114] Harris Miller Miller & Hanson Inc., *Transit Noise and Vibration Impact Assessment, Final Report* (May 2006).

Table 4.10-11 Current and Future (2030) Roadway Noise Levels (Granada Hills–Knollwood)

Roadway Segment		*Noise Levels in dBA L_{dn}*						
		Existing	*Year 2030 Without Project Traffic*	*Year 2030 Increase Without Project*	*Year 2030 With Project Traffic*	*Project Related Increase*	*Significance Threshold[1]*	*Exceeds Significance Threshold?*
Balboa Boulevard	Timber Ridge to San Fernando Road	70.6	72.6	2.0	73.0	0.4	3.0	No
	Sesnon Street to Orozco Street	69.3	71.3	2.0	71.7	0.4	3.0	No
	Kingsburry Street to San Jose Street	66.5	69.6	4.1	69.0	-0.6	3.0	No
Chatsworth Street	Zelzah Avenue to Whiteoak Avenue	60.2	66.2	6.0	64.3	-1.9	3.0	No
	Haskell Avenue to I-405	62.3	65.2	2.9	65.5	-0.3	3.0	No
Rinaldi Street	Haskell Avenue to Blucher Avenue	63.2	69.8	6.6	69.8	0.0	3.0	No
	White Oak Avenue to Louise Avenue	63.9	67.8	3.9	67.5	-0.3	3.0	No
Woodley Avenue	San Fernando Mission Boulevard to Chatsworth Street	65.6	68.5	2.9	68.8	0.3	3.0	No
Shoshone Street	Nugent Drive to Mayerling Street	52.0	55.6	3.6	55.8	0.2	5.0	No
Zelzah Avenue	Chatsworth Street to San Jose Avenue	59.6	62.9	3.3	63.1	0.2	3.0	No
	San Fernando Mission Boulevard to Chatsworth Street	58.6	62.7	4.1	62.3	-0.4	3.0	No
San Fernando Mission Boulevard	Louise Avenue to Zelzah Avenue	59.4	64.0	4.6	64.0	0	3.0	No
San Jose Avenue	Amestoy Avenue to Encino Avenue	60.9	62.4	1.5	62.5	0	3.0	No
Devonshire Street	Haskell Avenue to Aqueduct Avenue	67.5	68.6	1.1	67.8	-0.8	3.0	No
Havenhurst Avenue	Tulsa Street to San Fernando Mission Road	63.1	64.8	1.7	64.6	-0.2	3.0	No
Lassen Street	Montgomery Avenue to Haskell Avenue	62.8	65.2	2.4	65.5	0.3	3.0	No

SOURCE: Atkins (2012) (calculation data and results are provided in Appendix E1)

Sylmar

Similar to the Granada Hills–Knollwood Community Plan, substantial permanent increases in noise would occur primarily as a result of increased traffic on local roadways due to the new mix of uses that

could develop from implementation of the proposed Sylmar Community Plan. As stated in the Thresholds of Significance, an increase in 3 dBA in CNEL that would result in exterior noise levels reaching or exceeding the "normally unacceptable" or "clearly unacceptable" category, or any 5 dBA or greater noise increase would be considered significant. As shown in Table 4.10-12 (Current and Future [2030] Roadway Noise Levels [Sylmar]), existing roadway noise levels were compared to future roadway noise projections without the plan (2030) and future roadway noise projections with the plan (2030). As shown in Table 4.10-12, increases in roadway noise levels with the proposed plan would not increase by more than 1.0 dBA CNEL compared to future roadway noise levels without the proposed plan. The greatest project related increase would occur along the roadway of Astoria Street between Ralston and Bradley Avenue. The vehicle noise levels would result in a 3.2 dBA increase above noise levels without the proposed plan. However, background noise levels are predicted to be 52.3 dBA CNEL, which is within "normally acceptable" range for residential uses and, therefore, this increase would be considered *less than significant*.

Impact 4.10-4 **Implementation of the proposed plans would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. Compliance with LAMC Sections 112.02 and 115.02 would reduce this impact to *less than significant*.**

Granada Hills–Knollwood

Implementation of the proposed plan could result in special events or temporary activities that would cause an increase in ambient noise levels. Noise-creating events such as parades and street festivals would not be located within residential areas and would be required to obtain permits and comply with the requirements of LAMC Section 115.02 regarding amplified sound. In addition, operation of development pursuant to the proposed plan would not require periodic use of special stationary equipment that would expose off-site sensitive receptors to an increase in ambient noise levels above those existing without the proposed plan. Impact 4.10-1 evaluates the potential for a constant/permanent source of increased ambient noise from mechanical equipment, attributable to the proposed plan to increase ambient noise levels. Compliance with LAMC Section 112.02 would ensure that noise levels attributed to new HVAC systems would not increase noise levels above City standards. Therefore, there would be no temporary or periodic noise impacts to on- or off-site receptors due to operation of the proposed Granada Hills–Knollwood Community Plan. This impact is *less than significant*.

Sylmar

Implementation of the proposed plan could result in special events or temporary activities that would cause an increase in ambient noise levels. Noise-creating events such as parades and street festivals would not be located within residential areas and would be required to obtain permits and comply with the requirements of LAMC Section 115.02 regarding amplified sound. In addition, operation of development pursuant to the proposed plan would not require periodic use of special stationary equipment that would expose off-site sensitive receptors to an increase in ambient noise levels above those existing without the proposed plan. Impact 4.10-1 evaluates the potential for a constant/ permanent source of increased ambient noise from mechanical equipment, attributable to the proposed plans to increase ambient noise

Table 4.10-12 Current and Future (2030) Roadway Noise Levels (Sylmar)

Roadway Segment		Noise Levels in dBA L_{dn}						
		Existing	*Year 2030 Without Project Traffic*	*Year 2030 Increase Without Project*	*Year 2030 With Project Traffic*	*Project Related Increase*	*Significance Threshold*[1]	*Exceeds Significance Threshold?*
Harding Street	Cranston Avenue to Maclay Street	57.8	51.7	-6.1	49.1	-2.6	5.0	No
Hubbard Street	Kismet Avenue to Lexicon Avenue	65.5	66.5	1.0	65.5	-0.1	3.0	No
	Gladstone Avenue to Wheeler Avenue	65.4	66.1	0.7	65.1	-1.0	3.0	No
	Foothill Boulevard to Gladstone Avenue	68.0	68.7	0.7	67.9	-0.8	3.0	No
Maclay Street	Foothill Boulevard to Gladstone Avenue	61.4	62.8	1.4	62.2	-0.6	3.0	No
Arroyo Street	Foothill Boulevard to Gladstone Avenue	59.7	61.3	1.6	60.1	-0.2	5.0	No
Polk Street	Fenton Avenue to Eldrige Avenue	62.7	62.9	0.02	61.9	-1.0	3.0	No
	De Garmo Avenue to Borden Avenue	64.3	67.8	3.5	67.2	-0.6	3.0	No
	Borden Avenue to Foothill Boulevard	64.1	65.9	1.8	66.0	0.1	3.0	No
Roxford Street	Glenoaks Boulevard to Fellows Avenue	56.4	59.8	3.4	59.1	-0.7	5.0	No
	Bradley Avenue to Herrick Avenue	62.7	63.4	0.7	63.4	0.0	3.0	No
Cobalt Street	Bradley Avenue to Foothill Boulevard	58.5	57.3	-0.8	55.6	-1.7	5.0	No
Astoria Street	Ralston Avenue to Bradley Avenue	45.6	49.1	3.5	52.3	3.2	5.0	No
San Fernando Road	Polk Street to Astoria Street	64.4	67.9	3.5	67.5	-0.4	3.0	No
	Bledsoe Street to Tyler Street	60.6	66.8	6.2	66.9	0.1	3.0	No
	Roxford Street to Larkspur Avenue	61.7	66.8	5.1	66.8	0.0	3.0	No
Foothill Boulevard	Yarnell Street to Filbert Street	59.4	65.1	5.7	64.8	-0.3	3.0	No
	Yarnell Street to Balboa Boulevard	59.0	64.2	5.2	63.8	-0.4	3.0	No

SOURCE: Atkins (2012) (calculation data and results are provided in Appendix E2)

levels. Compliance with LAMC Section 112.02 would ensure that noise levels attributed to new HVAC systems would not increase noise levels above City standards. Therefore, there would be no temporary or

periodic noise impacts to on- or off-site receptors due to operation of the proposed Sylmar Community Plan. This impact is *less than significant*.

Significant and Unavoidable Impacts

Impact 4.10-5 **Construction of development pursuant to the proposed plans could result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Project-level environmental review and implementation of mitigation measure MM4.10-2 for discretionary projects would reduce this impact, but not necessarily to a less-than-significant level. Therefore, this impact is *significant and unavoidable*.**

Granada Hills–Knollwood

The proposed Granada Hills–Knollwood Community Plan provides a framework on a program level for future development in the CPA and specifies the type of uses, densities, and intensities that would be permitted. Plan amendments would potentially change or refine land use plan designations, including the development of mixed-use. Other changes would be implemented throughout the CPA, including zone changes to retain existing single- and multi-family residential uses, existing industrial land uses, and commercial uses and zone changes to encourage mixed-use and transit-oriented development. Implementation of the proposed plan would result in construction activities associated with the development of these new uses. While specific development plans are not known at this time, it is likely that construction activities associated with development pursuant to the proposed plans would be located within 50 feet of existing or future noise-sensitive uses.

Development of projects pursuant to the proposed plan would require the use of heavy equipment for demolition, site excavation, installation of utilities, site grading, paving, and building fabrication. Construction activities would also involve the use of smaller power tools, generators, and other sources of noise. During each stage of construction, there would be a different mix of equipment operating, and noise levels would vary based on the amount of equipment in operation and the location of the activity.

The EPA has compiled data regarding the noise-generating characteristics of specific types of construction equipment and typical construction activities. These data are presented in Table 4.10-13 (Noise Ranges of Typical Construction Equipment) and Table 4.10-14 (Typical Outdoor Construction Noise Levels). These noise levels would diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 86 dBA measured at 50 feet from the noise source to the receptor would reduce to 80 dBA at 100 feet from the source to the receptor, and reduce by another 6 to 74 dBA at 200 feet from the source to the receptor.

The LAMC regulates construction noise levels through the provisions of Chapter IV, Article 1, Section 41.40. Section 41.40 states that noise from construction activities, provided it occurs between the designated hours (7:00 AM to 9:00 PM Monday through Friday, and 8:00 AM to 6:00 PM on Saturdays) is exempt from the noise standards established in Section 111.03 (refer to Table 4.10-7 [City of Los Angeles Presumed Ambient Noise Levels]).

Table 4.10-13 Noise Ranges of Typical Construction Equipment

Equipment	*Noise Levels in dBA L_{eq} at 50 feet* [a]
Front Loader	73 to 86
Trucks	82 to 95
Cranes (moveable)	75 to 88
Cranes (derrick)	86 to 89
Vibrator	68 to 82
Saws	72 to 82
Pneumatic Impact Equipment	83 to 88
Jackhammers	81 to 98
Pumps	68 to 72
Generators	71 to 83
Compressors	75 to 87
Concrete Mixers	75 to 88
Concrete Pumps	81 to 85
Back Hoe	73 to 95
Pile Driving (peaks)	95 to 107
Tractor	77 to 98
Scraper/Grader	80 to 93
Paver	85 to 88

SOURCE: U.S. Environmental Protection Agency. *Noise from Construction Equipment and Operations, Building Equipment and Home Appliances* (1971).

a. Machinery equipped with noise control devices or other noise-reducing design features does not generate the same level of noise emissions as that shown in this table.

Table 4.10-14 Typical Outdoor Construction Noise Levels

Construction Phase	*Noise Levels at 50 Feet (dBA L_{eq})*	*Noise Levels at 50 Feet with Mufflers (dBA L_{eq})*
Ground Clearing	84	82
Excavation, Grading	89	86
Foundations	78	77
Structural	85	83
Finishing	89	86

SOURCE: U.S. Environmental Protection Agency. *Noise from Construction Equipment and Operations, Building Equipment and Home Appliances* (1971).

Notwithstanding the exemption provided in Section 41.40, LAMC Section 112.05 establishes performance standards for powered equipment or tools. The maximum allowable noise level for most construction equipment within 500 feet of any residential zone is 75 dBA measured at 50 feet from the noise source. This restriction holds unless compliance is not technically feasible even with the use of noise "mufflers, shields, sound barriers, and/or other noise reduction devices or techniques."

Noise that would be experienced by sensitive uses due to development associated with implementation of the proposed plan is determined at their property lines. While the nearest sensitive uses vary at different locations in and around the CPAs, and as specific development plans have not yet been determined at individual sites, for the purpose of this analysis it is assumed that sensitive receptors could be as close as 50 feet from where construction would take place. Sensitive receptors in the project vicinity could experience noise levels up to 86 dBA L_{eq} as a result of construction activities, or as high as 107 dBA L_{eq} in the event that pile drivers are used during the construction of building foundations. In order to reduce construction noise levels, project-level environmental review and mitigation measure MM4.10-1 would be implemented for discretionary projects to reduce construction noise.

Implementation of mitigation measure MM4.10-1 would reduce construction noise levels at existing and future noise-sensitive receptors during construction activities associated with implementation of the proposed plan; however, as identified in Table 4.10-13, noise levels from various mechanized construction equipment would exceed 75 dBA at distances of 50 feet from the equipment which could exceed the limitations established in LAMC Section 112.05. Depending on the location of construction activities, typical construction noise levels could still exceed 75 dBA despite implementation of mitigation. Implementation of environmental review on a discretionary project level would help to reduce this impact, but not necessarily to less than significant, because certain construction activities may still be required in proximity to nearby sensitive receptors and construction-related noise levels could exceed the 75 dBA threshold. Because specific development projects are not known, this impact would be ***significant and unavoidable***.

Sylmar

The proposed Granada Hills–Knollwood Community Plan provides a framework on a program level for future development in the CPA and specifies the type of uses, densities, and intensities that would be permitted. Plan amendments would potentially change or refine land use plan designations, including the development of mixed-use. Other changes would be implemented throughout the CPA, including zone changes to retain existing single- and multi-family residential uses, existing industrial land uses, and commercial uses and zone changes to encourage mixed-use and transit-oriented development. Implementation of the proposed plan would result in construction activities associated with the development of these new uses. While specific development plans are not known at this time, it is likely that construction activities associated with development pursuant to the proposed plan would be located within 50 feet of existing or future noise-sensitive uses.

Development of projects pursuant to the proposed plan would require the use of heavy equipment for demolition, site excavation, installation of utilities, site grading, paving, and building fabrication. Construction activities would also involve the use of smaller power tools, generators, and other sources of noise. During each stage of construction, there would be a different mix of equipment operating, and noise levels would vary based on the amount of equipment in operation and the location of the activity.

The EPA has compiled data regarding the noise-generating characteristics of specific types of construction equipment and typical construction activities. These data are presented in Table 4.10-13 (Noise Ranges of Typical Construction Equipment) and Table 4.10-14 (Typical Outdoor Construction Noise Levels). These noise levels would diminish rapidly with distance from the construction site at a

rate of approximately 6 dBA per doubling of distance. For example, a noise level of 86 dBA measured at 50 feet from the noise source to the receptor would reduce to 80 dBA at 100 feet from the source to the receptor, and reduce by another 6 to 74 dBA at 200 feet from the source to the receptor.

The LAMC regulates construction noise levels through the provisions of Chapter IV, Article 1, Section 41.40. Section 41.40 states that noise from construction activities, provided it occurs between the designated hours (7:00 AM to 9:00 PM Monday through Friday, and 8:00 AM to 6:00 PM on Saturdays) is exempt from the noise standards established in Section 111.03 (refer to Table 4.10-7 [City of Los Angeles Presumed Ambient Noise Levels]).

Notwithstanding the exemption provided in Section 41.40, LAMC Section 112.05 establishes performance standards for powered equipment or tools. The maximum allowable noise level for most construction equipment within 500 feet of any residential zone is 75 dBA measured at 50 feet from the noise source. This restriction holds unless compliance is not technically feasible even with the use of noise "mufflers, shields, sound barriers, and/or other noise reduction devices or techniques."

Noise that would be experienced by sensitive uses due to development associated with implementation of the proposed plan is determined at their property lines. While the nearest sensitive uses vary at different locations in and around the CPA, and as specific development plans have not yet been determined at individual sites, for the purpose of this analysis it is assumed that sensitive receptors could be as close as 50 feet from where construction would take place. Sensitive receptors in the project vicinity could experience noise levels up to 86 dBA L_{eq} as a result of construction activities, or as high as 107 dBA L_{eq} in the event that pile drivers are used during the construction of building foundations. In order to reduce construction noise levels, project-level environmental review and mitigation measure MM4.10-1 would be implemented for discretionary projects to reduce construction noise.

Implementation of mitigation measure MM4.10-1 would reduce construction noise levels at existing and future noise-sensitive receptors during construction activities associated with implementation of the proposed plan; however, as identified in Table 4.10-14, noise levels from various mechanized construction equipment would exceed 75 dBA at distances of 50 feet from the equipment which could exceed the limitations established in LAMC Section 112.05. Depending on the location of construction activities, typical construction noise levels could still exceed 75 dBA despite implementation of mitigation. Implementation of environmental review on a discretionary project level would help to reduce this impact, but not necessarily to less than significant, because certain construction activities may still be required in proximity to nearby sensitive receptors and construction-related noise levels could exceed the 75 dBA threshold. Because specific development projects are not known, this impact would be ***significant and unavoidable***.

Impact 4.10-6SYL **Development of new residential uses adjacent to the Sylmar/San Fernando Metrolink Station under the Sylmar Community Plan could result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. Project-level environmental review and implementation of mitigation measure MM4.10-1SYL for discretionary projects would reduce this impact, but not necessarily to a less-than-significant level. Therefore, this impact is *significant and unavoidable*.**

Implementation of the proposed Sylmar Community Plan would focus new housing around the Sylmar/San Fernando Metrolink Station and residential uses could potentially be located within 100 feet of the existing Union Pacific Rail (UPR) line. Currently, Metrolink operates 24 daily trains during weekdays, and UPR operates up to five freight trains along the rail line. With Metrolink and UPR both utilizing the corridor, and a passenger station located within the CPA, train noise is a daily occurrence within the project area. As stated previously, typical commuter train noise produces a noise level of 80 dBA at 50 feet from the tracks, while a stopped commuter train would produce a noise level of 65 dBA. Per the Federal Railway Administration, noise levels associated with trains are anticipated to attenuate/reduce at a rate of 4.5 dBA for each doubling of distance. As such, potentially noise-sensitive uses, such as residential structures, would likely experience noise levels ranging from 60.5 to 75.5 dBA due to the physical movement and idling of commuter trains along the rail line. In addition to movement and idling noise levels, trains are required to use horns at any at-grade crossing for safety reasons. Depending on the type of horn used, noise levels could reach 110 dBA at a distance of 100 feet.

Under the proposed plan, sensitive uses, both interior and exterior, could be located within areas that may experience excessive noise levels due to train horns. Interior uses would include predominantly residential structures, while exterior uses at new developments adjacent to the rail station and the rail line may include communal open spaces, such as pocket parks or pedestrian walkways. While no specific development is proposed under the proposed plan, it is expected that these uses could be located within the interior of new developments or on the opposite side of the development from the rail station and train tracks, thereby mitigating some of the noise generated by those transportation facilities. In terms of interior uses and as stated previously, under new construction practices, noise levels inside structures, such as residential buildings, can be expected to be 30 dBA less than exterior noise levels. As such, the instantaneous interior noise levels attributable to residential units located within 100 feet of the train tracks would be reduced to approximately 80 dBA when a train horn blows. However, this noise level would remain in excess of City noise standards as established in LAMC Section 111.03 by approximately 30 dBA for instantaneous exterior noise. These noise levels would equate to CNEL levels of greater than 65 dBA, which would also exceed the exterior residential noise standards of the General Plan. As such, this impact would be considered potentially significant.

As specific development projects and site plans are not included in the Sylmar Community Plan, the potential exists that noise levels at future residential uses could exceed exterior and interior levels established in the LACM. When mixed-use developments are located adjacent to the railroad tracks, noise-tolerant project components such as parking garages could be built on the back side of the development facing the tracks in an effort to reduce the noise levels experienced at the residential uses. The garages could act as a buffer and help attenuate the noise generated by the trains. Additionally, under

the City's Standard Mitigation Measures, sound walls could be developed adjacent to the railroad tracks to mitigate train noise. In addition, mitigation measure MM4.10-1SYL would be implemented.

Although mitigation measure MM4.10-1SYL and the City's Standard Mitigation Measures would reduce impacts, they would not serve to fully mitigate the potential impact to future residents located adjacent to the Sylmar/San Fernando Metrolink Station. As discussed above, implementation of mitigation measure MM4.10-1SYL and the City's Standard Mitigation Measures, which requires the provision of a sound wall for any residential uses adjacent to an existing rail line, would serve to reduce interior noise levels to acceptable levels, but exterior noise levels could still violate LACM standards. Therefore, the use of train horns would be considered to have a ***significant and unavoidable*** impact on sensitive receptors developed as part of the proposed Sylmar Community Plan.

Impact 4.10-7 **Construction of development pursuant to the proposed plans could generate or expose persons or structures to excessive groundborne vibration. Project-level environmental review and implementation of mitigation measure MM4.10-2 for discretionary projects would reduce this impact, but not necessarily to a less-than-significant level. Therefore, this impact is *significant and unavoidable*.**

Granada Hills–Knollwood

Construction-related groundborne noise and vibration have two potential impacts. First, groundborne noise and vibration at high enough levels can result in human annoyance. Second, groundborne vibration can potentially damage the foundations and exteriors of historic structures. Groundborne vibration that can cause this kind of damage is typically limited to impact equipment, especially pile drivers. Construction activities that would occur for development pursuant to the proposed plan have the potential to generate low levels of groundborne vibration. Table 4.10-15 (Vibration Source Levels for Construction Equipment) identifies various vibration velocity levels for the types of construction equipment that would operate within the CPA during construction.

Table 4.10-15 Vibration Source Levels for Construction Equipment

Equipment	*Approximate VdB*			
	25 Feet	*50 Feet*	*75 Feet*	*100 Feet*
Pile Driver (Impact)	112	106	102	100
Large Bulldozer	87	81	77	75
Loaded Trucks	86	80	76	74
Jackhammer	79	73	69	67
Small Bulldozer	58	52	48	46

SOURCE: U.S. Department of Transportation, Federal Railroad Administration, *High-Speed Ground Transportation Noise and Vibration Impact Assessment* (October 2005).

In addition to the construction equipment shown in Table 4.10-15, vibration that would be experienced from the use of impact pile drivers could reach as high as 112 VdB at a distance of 25 feet.[115] Like noise,

[115] Harris Miller Miller & Hanson Inc., *Transit Noise and Vibration Impact Assessment, Final Report* (May 2006).

groundborne noise and vibration will attenuate at a rate of approximately 6 VdB per doubling of distance. The groundborne noise and vibration generated during construction activities would primarily impact existing sensitive uses (e.g., residences, schools, and hospitals) that are located adjacent to, or within, the vicinity of specific projects. These sensitive uses could sometimes be located as close as 25 feet to the construction site or as far as several hundred feet away. Based on the information presented in Table 4.10-15, vibration levels (excluding pile driving) could reach up to 87 VdB at sensitive uses located within 25 feet of construction, or up to 112 VdB if pile driving is required. For sensitive uses that are located at or within 25 feet of project construction sites, sensitive receptors (e.g., residents, school children, and hospital patients) at these locations may experience groundborne noise and vibration levels during construction activities that exceed the FTA's vibration impact threshold of 85 VdB for human annoyance. As long as construction occurs more than 50 feet from sensitive receptors, the impact associated with groundborne noise and vibration generated by the equipment would be below 85 VdB and, thus, would be less than significant. However, as specific project-level site plans or construction schedules are unknown at this time, it is possible that construction activities could occur as close as 25 feet from sensitive receptors. This would result in these sensitive receptors experiencing groundborne noise and vibration impacts above the threshold of 85 VdB, in which case this impact would be potentially significant. Implementation of project-level environmental review and mitigation measures MM4.10-2 would help to reduce this impact, but not to a less-than-significant level, because certain construction activities may still be required in proximity to nearby sensitive receptors. Because specific development projects are not known, this impact would be ***significant and unavoidable***.

Sylmar

Construction-related groundborne noise and vibration have two potential impacts. First, groundborne noise and vibration at high enough levels can result in human annoyance. Second, groundborne vibration can potentially damage the foundations and exteriors of historic structures. Groundborne vibration that can cause this kind of damage is typically limited to impact equipment, especially pile drivers. Construction activities that would occur for development pursuant to the proposed plans have the potential to generate low levels of groundborne vibration. Table 4.10-15 (Vibration Source Levels for Construction Equipment) identifies various vibration velocity levels for the types of construction equipment that would operate within the CPA during construction.

In addition to the construction equipment shown in Table 4.10-15, vibration that would be experienced from the use of impact pile drivers could reach as high as 112 VdB at a distance of 25 feet.[116] Like noise, groundborne noise and vibration will attenuate at a rate of approximately 6 VdB per doubling of distance. The groundborne noise and vibration generated during construction activities would primarily impact existing sensitive uses (e.g., residences, schools, and hospitals) that are located adjacent to, or within, the vicinity of specific projects. These sensitive uses could sometimes be located as close as 25 feet to the construction site or as far as several hundred feet away. Based on the information presented in Table 4.10-15, vibration levels (excluding pile driving) could reach up to 87 VdB at sensitive uses located within 25 feet of construction, or up to 112 VdB if pile driving is required. For sensitive uses that are located at or within 25 feet of project construction sites, sensitive receptors (e.g., residents,

[116] Harris Miller Miller & Hanson Inc., *Transit Noise and Vibration Impact Assessment, Final Report* (May 2006).

school children, and hospital patients) at these locations may experience groundborne noise and vibration levels during construction activities that exceed the FTA's vibration impact threshold of 85 VdB for human annoyance. As long as construction occurs more than 50 feet from sensitive receptors, the impact associated with groundborne noise and vibration generated by the equipment would be below 85 VdB and, thus, would be less than significant. However, as specific project-level site plans or construction schedules are unknown at this time, it is possible that construction activities could occur as close as 25 feet from sensitive receptors. This would result in these sensitive receptors experiencing groundborne noise and vibration impacts above the threshold of 85 VdB, in which case this impact would be potentially significant. Implementation of project-level environmental review and mitigation measures MM4.10-2 would help to reduce this impact, but not to a less-than-significant level, because certain construction activities may still be required in proximity to nearby sensitive receptors. Because specific development projects are not known, this impact would be ***significant and unavoidable***.

Impact 4.10-8 **Construction of development pursuant to the proposed plans could result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project due to construction activities. Implementation of project-level environmental review and mitigation measure MM4.10-2 for discretionary projects would reduce this impact, but not necessarily to a less-than-significant level. Therefore, this impact is *significant and unavoidable*.**

Granada Hills–Knollwood

Construction activities related to development projects occurring as a result of implementation of the proposed plan would involve demolition, grading, and excavation activities, followed by construction and external finishing of the proposed buildings and associated parking areas, as well as roadway and landscaping improvements. These activities would involve the use of heavy equipment. Construction activities would also involve the use of smaller power tools, generators, and other equipment that generates noise. Each stage of construction would use a different mix of equipment, and noise levels would vary based on the amount and types of equipment in operation and the location of the activity related to potential receptors.

As described under Impact 4.10-5, specific development plans have not been identified for future projects contemplated under the proposed plan, and, therefore, the location of noise-sensitive receptors would vary from project to project and the actual noise levels experienced by noise-sensitive receptors cannot be determined at this time. However, for the purpose of this analysis, it is assumed that sensitive receptors could be as close as 50 feet from where construction would take place. Sensitive receptors in the individual project vicinity could experience noise levels up to 86 dBA L_{eq} as a result of construction activities, or as high as 107 dBA L_{eq} in the event that pile drivers are used during the construction of building foundations.

Development projects would be required to comply with the LAMC Section 41.10, limiting construction hours to 7:00 AM to 9:00 PM Monday through Friday, and 8:00 AM to 6:00 PM on Saturdays. However, construction activity would generate temporary and periodic increases in ambient noise levels that would potentially exceed the thresholds established by the City of Los Angeles Thresholds Guide as follows:

- Construction activities lasting more than 1 day would exceed existing ambient exterior noise levels by 10 dBA or more at a noise-sensitive use
- Construction activities lasting more than 10 days in a 3-month period would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive use
- Construction activities would exceed the ambient noise level by 5 dBA at a noise-sensitive use between the hours of 9:00 PM and 7:00 AM Monday through Friday, before 8:00 AM or after 6:00 PM on Saturday, or at any time on Sunday

Construction activities associated with implementation of projects pursuant to the proposed plans would likely last for a period of several weeks and would generate noise levels at noise-sensitive uses ranging from 86 dBA L_{eq} to as high as 107 dBA L_{eq}. These noise levels would occur during various stages of individual project construction and could exceed the limits established by the Threshold Guidelines. Implementation of project level environmental review and mitigation measure MM4.10-2 for discretionary projects would reduce noise levels, but not below the thresholds of significance. Therefore, this impact would be ***significant and unavoidable***.

Sylmar

Construction activities related to development projects occurring as a result of implementation of the proposed plan would involve demolition, grading, and excavation activities, followed by construction and external finishing of the proposed buildings and associated parking areas, as well as roadway and landscaping improvements. These activities would involve the use of heavy equipment. Construction activities would also involve the use of smaller power tools, generators, and other equipment that generates noise. Each stage of construction would use a different mix of equipment, and noise levels would vary based on the amount and types of equipment in operation and the location of the activity related to potential receptors.

As described under Impact 4.10-5, specific development plans have not been identified for future projects contemplated under the proposed plan, and, therefore, the location of noise-sensitive receptors would vary from project to project and the actual noise levels experienced by noise-sensitive receptors cannot be determined at this time. However, for the purpose of this analysis, it is assumed that sensitive receptors could be as close as 50 feet from where construction would take place. Sensitive receptors in the individual project vicinity could experience noise levels up to 86 dBA L_{eq} as a result of construction activities, or as high as 107 dBA L_{eq} in the event that pile drivers are used during the construction of building foundations.

Development projects would be required to comply with the LAMC Section 41.10, limiting construction hours to 7:00 AM to 9:00 PM Monday through Friday, and 8:00 AM to 6:00 PM on Saturdays. However, construction activity would generate temporary and periodic increases in ambient noise levels that would potentially exceed the thresholds established by the City of Los Angeles Thresholds Guide as follows:

- Construction activities lasting more than 1 day would exceed existing ambient exterior noise levels by 10 dBA or more at a noise-sensitive use
- Construction activities lasting more than 10 days in a 3-month period would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive use

- Construction activities would exceed the ambient noise level by 5 dBA at a noise-sensitive use between the hours of 9:00 PM and 7:00 AM Monday through Friday, before 8:00 AM or after 6:00 PM on Saturday, or at any time on Sunday

Construction activities associated with implementation of projects pursuant to the proposed plans would likely last for a period of several weeks and would generate noise levels at noise-sensitive uses ranging from 86 dBA L_{eq} to as high as 107 dBA L_{eq}. These noise levels would occur during various stages of individual project construction and could exceed the limits established by the Threshold Guidelines. Implementation of project level environmental review and mitigation measure MM4.10-2 for discretionary projects would reduce noise levels, but not below the thresholds of significance. Therefore, this impact would be ***significant and unavoidable***.

Mitigation Measures

The proposed plans incorporate policies and programs that help mitigate adverse noise impacts. Adherence to all relevant plans, codes, and regulations, and environmental review for discretionary development on a project-by-project basis would also serve to reduce project-specific and cumulative noise impacts. Additionally, the following mitigations measures would be implemented for future discretionary projects in the Granada Hills–Knollwood and/or Sylmar CPAs to further reduce construction-related noise impacts:

MM4.10-1SYL *Prior to the submittal of a building permit application for discretionary residential development within 150 feet of the UP right-of-way, project applicants shall obtain a qualified vibration consultant to complete a site-specific vibration assessment subject to approval by the Department of Building and Safety. The vibration assessment shall measure the vibration levels at the project site's property line within 150 feet of the UP right-of-way. If vibration levels exceed the FTA 80 VdB criteria for "infrequent" vibration events impacting a residential use (i.e., fewer than 30 vibration events from the same source per day, which is typical of most commuter rail vibration sources), the vibration assessment shall recommend measures to reduce vibration levels to 72 VdB or less. Examples of such measures that have been very successfully used, separately or in combination, to avoid vibration impacts to other residential projects located near rail transit vibration sources include:*

- *Building Foundation Mats—The use of increased mass in the foundation of the building to increase the effective vibration reduction that occurs at the boundary between the soil and the building foundation structure.*
- *Vibration Isolation—After provision of a break or gap in the structure between the first floor concrete slab and the top of the basement walls/columns, isolation would be achieved by placing rubber pads between the top of the basement walls/columns and the first floor structure.*

Recommended vibration reduction measures provided by the site-specific assessment shall be incorporated into the design and construction of the proposed infill development project and their effectiveness shall be verified by vibration monitoring measurements after construction. The applicant shall provide the Department of Building and Safety documentation demonstrating compliance with this measure for review and approval once construction has been completed, but prior to occupancy of the building(s).

MM4.10-2 *The City, as a condition of approval for all applicable discretionary projects, shall require all contractors to include the following best management practices in contract specifications:*

- *Re-route truck traffic away from residential streets, if possible. If no alternatives are available, route truck traffic on streets with the fewest residences.*
- *Site equipment on construction lots as far away from noise-sensitive sites as possible.*
- *When construction activities are located in close proximity to noise-sensitive sites, construct noise barriers, such as temporary walls or piles of excavated material between activities and noise sensitive uses.*
- *Avoid use of impact pile drivers where possible in noise-sensitive areas. Drilled piles or the use of a sonic vibratory pile driver are quieter alternatives where geological conditions permit their use. Use noise shrouds when necessary to reduce noise of pile drilling/driving.*
- *Use construction equipment with mufflers that comply with manufacturers' requirements.*
- *Consider potential vibration impacts to older (historic) buildings.*

Level of Significance After Mitigation

Mitigation measures and standard conditions of approval would reduce impacts from noise and vibration, but ***significant and unavoidable*** impacts would remain for construction noise and vibration for both proposed plans. ***Significant and unavoidable*** impacts would remain as a result of exposure to rail noise for new residents adjacent to the UP rail line.

4.10.4 Cumulative Impacts

A cumulative impact analysis is only provided for those thresholds that result in a less-than-significant or significant and unavoidable impact. A cumulative impact analysis is not provided for Effects Found Not to Be Significant, which result in no project-related impacts.

The geographic context for the analysis of cumulative noise impacts depends on the impact being analyzed. For construction impacts, only the immediate area around the specific development site would be included in the cumulative context. For operational/roadway related impacts, the context is build-out of the Granada Hills–Knollwood and Sylmar Community Plans, including existing and future development of cumulative projects within these CPAs, as well as related projects in adjacent communities that would be potentially impacted. This cumulative impact analysis considers development of the proposed plan, in conjunction with ambient growth as discussed in Section 4.13 (Transportation/Traffic), and other development within these CPAs and surrounding jurisdictions. Noise is by definition a localized phenomenon, and is significantly reduced in magnitude as distance from the source increases. Consequently, only projects and growth due to occur in the project area would be likely to contribute to cumulative noise impacts.

Similar to any urban area where new structures are proposed as part of urban development/redevelopment, increases in noise at sensitive uses would occur as a result of construction of various developments, including those associated with the proposed plans. Other construction that may occur in the vicinity of the CPAs would contribute noise levels similar to those generated for the proposed plans. Where this development adjoins the proposed plans construction, the combined construction noise levels would have a cumulative effect with respect to increases in ambient noise levels and exceedance of City standards. Noise is not strictly additive, and a doubling of noise sources would

not cause a doubling of noise levels; however, cumulative construction noise levels would be in excess of the City standards at nearby sensitive receptors.

As discussed under Impact 4.10-5, LAMC Section 41.10 limits construction activities to between the hours of 7:00 AM and 9:00 PM Monday through Friday, and 8:00 AM to 6:00 PM on Saturdays, and also prohibits construction activities on Sundays and public holidays. However, as identified in Impact 4.10-5, noise levels from various pieces of construction equipment could exceed the 75 dBA limit established in LAMC Section 112.05. As the construction activities associated with implementation of the proposed plans would exceed the 75 dBA noise limit, combined with the effects of cumulative development, the proposed plan's contribution to the impact would be cumulatively considerable. Therefore, the cumulative impact of the plan's construction-related exposure of persons to noise levels above the City of Los Angeles established limit would be considered ***significant and unavoidable***.

As also discussed under Impact 4.10-1, Compliance with LAMC Section 112.02 would ensure that noise levels attributed to new HVAC systems would not increase noise levels above City standards. Consequently, multiple units would have to be located within 50 feet of a receptor to achieve noise levels that would exceed the City standards. The development types anticipated and allowed under the proposed plans and other nearby projects are not so dense that multiple stationary units would need to be so closely spaced, either on or off site. Consequently, the cumulative effect of multiple HVAC units and other mechanical equipment would be less than significant with compliance with LAMC Section 112.02, and the contribution of the project would not be cumulatively considerable. This is a ***less-than-significant*** cumulative impact.

Other development projects within and adjacent to the Granada Hills–Knollwood and Sylmar CPAs could potentially introduce residential development into areas that currently exceed the exterior/interior standards for residential uses. However, such residential development would have to be constructed so that the noise levels in interior/exterior living spaces do not exceed the standards as set forth in the Noise Element of the General Plan and LAMC. Since any potential new residential development within the CPAs would be required to mitigate through site and building design, insulation, and other noise preventative measures as specified in Title 24 of the California Building Code, the proposed plans' impact would not be cumulatively considerable and the cumulative impact of the project would also be ***less than significant***.

As discussed in Impact 4.10-7, the construction of projects pursuant to the proposed plans would produce temporary vibration impacts. However, the construction vibration impact would be significant and unavoidable. Cumulative development in the CPAs is not considered likely to result in the exposure of on-site or off-site receptors to excessive groundborne noise and vibration due to the localized nature of vibration impacts, the fact that all construction would not occur at the same time and at the same location. Therefore, only receptors located in close proximity to each construction site would be potentially affected by each activity. Construction activities associated with these projects, which are adjacent to or within, the CPAs, may overlap with construction activities for the proposed plans for some amount of time. However, for the combined vibration impact from the simultaneous construction projects to reach cumulatively significant levels, intense construction from these projects would have to occur simultaneously within 50 feet of any receptor. As individual development projects under the proposed plans may be constructed concurrently with each other or other related projects, it is possible

that intense construction from two or more projects would simultaneously occur at distances of 50 feet or less from existing nearby receptors. Therefore, vibration from future development could potentially combine to result in a potentially significant cumulative impact. The cumulative impact of the proposed plans would be ***significant and unavoidable***.

Groundborne vibration could conceivably be generated by operation of future development projects and related projects in the vicinity of the CPAs. However, policies in the proposed plans would establish walls, landscape, and appropriate setbacks for commercial and industrial uses, if applicable, such that residential neighborhoods would be protected from groundborne vibration to the maximum extent feasible. Trucks travelling within the CPAs would utilize the existing truck routes to and from the industrial areas, and would not travel through residential neighborhoods as a result of the proposed plans; therefore, no increase in vibration from traffic would occur. Since no substantial sources of groundborne vibration would be built as a part of the proposed plans, no vibration impacts, attributable to the proposed plans, would likely occur during operation of the proposed plans. It is reasonable to assume that other projects in the vicinity of the CPAs would have similar characteristics. Consequently, the proposed plans would not be considered cumulatively considerable with respect to operational groundborne noise and vibration impacts at any on-site or off-site receptor. This cumulative impact is ***less than significant***.

Substantial permanent increases in noise would occur primarily as a result of increased traffic on local roadways due to development pursuant to the proposed plans, related projects, and ambient growth through Year 2030 within the study area. Cumulative traffic-generated noise impacts have been assessed based on the contribution of the proposed plans to the future cumulative base traffic volumes in the project vicinity. As shown in Table 4.10-11 (Current and Future [2030] Roadway Noise Levels [Granada Hills–Knollwood]) and Table 4.10-12 (Current and Future [2030] Roadway Noise Levels [Sylmar]), cumulative traffic would result in increases in noise levels that would exceed the 0.3 dBA CNEL threshold. As described under Impact 4.10-3, the proposed plans would not result in roadway noise levels exceeding the established thresholds; however, future noise levels without the proposed plans are anticipated to exceed the significance threshold by up to 7.0 dBA CNEL resulting in a cumulative impact. However the proposed plans' contribution to future roadway noise levels would result in a decrease in noise levels compared to future year conditions without the proposed plans along most analyzed roadways, due, in part, to trip capture and trip reduction attributable to mixed-use development. Therefore, the proposed plans' contribution would not be considered cumulatively considerable, and the cumulative impact is ***less than significant***.

Operation of development projects related to implementation of the proposed plans could include special events or temporary activities that would cause an increase in ambient noise levels. Noise creating events such as parades and street festivals would not be located within residential areas and would be required to obtain permits and comply with the requirements of LAMC Section 115.02 regarding amplified sound. Therefore, there would be no temporary or periodic noise impacts to on- or off-site receptors due to operation of development pursuant to the proposed plans, and the cumulative impact of the proposed plans is ***less than significant***.

Periodic and temporary noise levels would be generated by the construction of projects pursuant to the proposed plans along with other construction in the vicinity. As discussed in Impact 4.10-8, construction

of development pursuant to the proposed plans would expose some receptors to noise levels in excess of acceptable City standards. Construction noise impacts are localized in nature and decrease substantially with distance. As discussed previously, related projects provided in Table 3-2 (Summary of Proposed Plan Expected Build-Out) in Chapter 3 are in the vicinity of the CPAs. Construction activity associated with these projects may overlap with construction activity pursuant to the proposed plans. Thus, the possibility exists that a substantial cumulative increase in construction noise levels could result from construction associated with the proposed plans in combination with related projects. The cumulative impact of the proposed plans and the related projects concurrently emitting high levels of construction noise would likely be significant and unavoidable. Construction activities associated with implementation of the proposed plans would likely last for a period of several weeks and could generate noise levels at noise-sensitive uses ranging from 86 dBA L_{eq} to as high as 107 dBA L_{eq}. These noise levels would occur during various stages of individual projects construction and would exceed the thresholds of significance limits established in this EIR. Consequently, it is anticipated that projects analyzed in the cumulative context would similarly exceed the thresholds of significance for construction standards, and the cumulative impact of the proposed plans would be ***significant and unavoidable***.

4.10.5 References

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