4.12 Noise

This section of the EIR describes the existing ambient noise environment, including the sources of noise, within the General Plan Update boundary in relation to noise sensitive land uses. In addition, relevant local noise standards and guidelines are described. This section is based on the Noise Technical Report for the City of Escondido General Plan Update (Atkins 2011b), provided as Appendix E to this EIR.

A summary of the impacts associated with noise identified in Section 4.12.3, Analysis of Project Impacts and Determination of Significance, is provided below.

Noise Summary of Impacts

Issue Number	Issue Topic	Project Direct Impact	Project Cumulative Impact	Impact After Mitigation
1	Excessive Noise Levels	Less than Significant	Less than Significant	Less than Significant
2	Excessive Groundborne Vibration	Potentially Significant	Potentially Significant	Significant and Unavoidable
3	Permanent Increase in Ambient Noise Levels	Less than Significant	Potentially Significant	Significant and Unavoidable
4	Temporary Increase in Ambient Noise Levels	Less than Significant	Less than Significant	Less than Significant
5	Excessive Noise Exposure from Airports	Less than Significant	Less than Significant	Less than Significant

4.12.1 Existing Conditions

4.12.1.1 Characteristics of Noise and Vibration

Fundamentals of Noise

Noise is typically defined as unwanted sound. Sound pressure magnitude is measured and quantified using a logarithmic ratio of pressures, the scale of which gives the level of sound in decibels (dB). Sound pressures in the environment have a wide range of values and the sound pressure level was developed as a way to describe this range of sound. The sound pressure level is the logarithm of the ratio of the unknown sound pressure to an agreed upon reference quantity of the same kind. To account for the pitch of sounds and the corresponding sensitivity of human hearing to them, the raw sound pressure level is adjusted with an A-weighting scheme based on frequency that is stated in units of decibels (dBA). Typical A-weighted noise levels are listed in Table 4.12-1, Typical A-Weighted Noise Levels.

Table 4.12-1 Typical A-Weighted Noise Levels

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

Source: Caltrans 1998

A given level of noise would be more or less tolerable depending on the sound level, duration of exposure, character of the noise sources, time of day during which the noise is experienced, and activity affected by the noise. For example, noise that occurs at night tends to be more disturbing than that which occurs during the day because sleep has the potential to be disturbed. Additionally, rest at night is a critical requirement in the recovery from exposure to high noise levels during the day. In consideration of these factors, different measures of noise exposure have been developed to quantify the extent of the effects anticipated from these activities. For example, some indices consider the 24-hour noise environment of a location by using a weighted average to estimate its habitability on a long term basis. The most commonly used indices for measuring community noise levels are the Equivalent Energy Level (Leq), the Community Noise Equivalent Level (CNEL), and the day-night average noise level (Ldn).

- **Leq** is the average acoustical or sound energy content of noise, measured during a prescribed period, such as 1 minute, 15 minutes, 1 hour, or 8 hours. It is the decibel sound level that contains an equal amount of energy as a fluctuating sound level over a given period of time.
- **CNEL** is the average equivalent A-weighted sound level over a 24-hour period. This measurement applies weights to noise levels during evening and nighttime hours to compensate for the increased disturbance response of people at those times. CNEL is the equivalent sound level for a 24-hour period with a +5 dBA weighting applied to all sound occurring between 7:00 p.m. and 10:00 p.m. and a +10 dBA weighting applied to all sound occurring between 10:00 p.m. and 7:00 a.m.

- **Ldn**, the day-night average noise level, is a 24-hour average Leq with a +10 dBA weighting applied to noise during the hours of 10:00 p.m. to 7:00 a.m. Ldn and CNEL are typically within one dBA of each other and, for most intents and purposes, are interchangeable.

The decibel level of a sound decreases (or attenuates) exponentially as the distance from the source of that sound increases. For a single point source such as a piece of mechanical equipment, the sound level normally decreases by about 6 dBA for each doubling of distance from the source. Sound that originates from a linear, or "line" source such as a heavily traveled traffic corridor, attenuates by approximately 3 dBA per doubling of distance, provided that the surrounding site conditions lack ground effects or obstacles that either scatter or reflect noise. Noise from roadways in environments with major ground effects due to vegetation and loose soils would either absorb or scatter the sound yielding attenuation rates as high as 4.5 dBA for each doubling of distance. Other contributing factors that affect sound reception include meteorological conditions, natural topography, and the presence of manmade obstacles such as buildings and sound barriers.

Noise Effects

Noise has a significant effect on the quality of life. An individual's reaction to a particular noise depends on many factors such as the source of the noise, its loudness relative to the background noise level, and the time of day. The reaction to noise can also be highly subjective; the perceived effect of a particular noise can vary widely among individuals in a community. Because of the nature of the human ear, a sound must be about 10 dBA greater than the reference sound to be judged as twice as loud. In general, a three decibel change in community noise levels is perceivable, while one to two decibel changes generally are not noticed. A five decibel increase is generally perceived as a distinctly noticeable increase. Although a community's reaction to changes in noise levels would vary by the individual, it is generally accepted that noise is a significant component of the environment, and excessively noisy conditions can affect an individual's health and well-being. The effects of noise are often only transitory, but adverse effects can be cumulative with prolonged or repeated exposure. The effects of noise on a community can be organized into six broad categories: sleep disturbance; permanent hearing loss; human performance and behavior; social interaction of communication; extra-auditory health effects; and general annoyance.

Noise Sensitive Land Uses

According the Federal Transit Administration (FTA), a noise receptor is a stationary position at which noise levels are specified, such as a residence or other structure. Noise sensitive land uses (NSLU) include noise receptors (receivers) where an excessive amount of noise would interfere with normal activities, particularly buildings where people normally sleep and institutional land uses with primarily daytime and evening uses. NSLU where people usually sleep include residences, hospitals, health care facilities, convalescent homes, and transient lodging (hotels and motels). Daytime and evening NSLU include public and private educational facilities, churches, libraries, museums, cultural facilities, golf courses and passive recreational parks (where a quiet atmosphere is an essential part of the recreational experience). Commercial, general office and industrial land uses are not considered NSLU.

Sleep disturbance is the most critical concern for a NSLU on a 24-hour basis compared to facilities that are occupied only a portion of a day. NSLU are located throughout the proposed project area, but are concentrated in the urban core of the City, including residences, schools, convalescent homes, churches, health care facilities, transient lodging, and cultural facilities. The Palomar Medical Center hospital is

currently located at 555 East Valley Parkway, on the boundary between the Downtown Specific Plan Area (SPA) and East Valley Parkway Target Area. Palomar Pomerado Healthcare District's new facility, Palomar Medical Center West, is located in the western portion of the planning area in the Escondido Research and Technology Center (ERTC) North SPA. This facility is currently under construction. The City's public library is located in the Downtown SPA. Several golf courses in the City are generally located outside of the urban core near open space resources. Passive recreational parks are located on the edges of the City outside the urban core, including Daley Ranch, San Pasqual Valley, Kit Carson Park, Felicita Park, and Bernardo Mountain.

Certain biological species may also be indirectly affected by excessive noise levels. Excessive noise could result in animal behavioral changes, particularly during nesting or breeding season. Potential impacts to sensitive species within the General Plan Update planning area are addressed in Section 4.3, Biological Resources, of this EIR.

Groundborne Vibration

Vibration consists of waves transmitted through solid material (FTA 2006). Groundborne vibration propagates from the source through the ground to adjacent buildings by surface waves. Vibration may be comprised of a single pulse, a series of pulses, or a continuous oscillatory motion. The frequency of a vibrating object describes how rapidly it is oscillating, measured in Hertz (Hz). The normal frequency range of most groundborne vibration that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz.

Vibration energy spreads out as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. Groundborne vibration is measured by its peak particle velocity (PPV). The PPV is normally described in inches per second. PPV is appropriate for determining potential structure damage, but does not evaluate human response to vibration. The ground motion caused by vibration is also given in decibel notation, referenced as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration relative to human response (Federal Railroad Administration [FRA] 2005). The general human response to different levels of groundborne vibration velocity levels is described in Table 4.12-2, Human Response to Difference Levels of Groundborne Vibration.

Table 4.12-2 Human Response to Different Levels of Groundborne Vibration

	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: Federal Transit Administration 2006

Groundborne vibration can be a concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, described below, groundborne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major

roads. Some common sources of groundborne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving and operating heavy earth-moving equipment.

The rumbling sound caused by the vibration of building structures is referred to as groundborne noise. Like broadband noise, groundborne noise is usually characterized with the A-weighted sound level, which is intended to represent the normal frequency response of the human ear. However, there are potential problems when characterizing low-frequency noise using A-weighting, because human hearing causes sounds dominated by low-frequency components to seem louder than broadband sounds that have the same A-weighted level. This is accounted for by setting the limits for groundborne noise lower than would be the case for broadband noise. The sound level accompanying vibration is generally 25 to 40 dBA lower than the vibration velocity level in VdB. Groundborne vibration levels of 65 VdB can result in groundborne noise levels up to 40 dBA, which can disturb sleep. Groundborne vibration levels of 85 VdB can result in groundborne noise levels up to 60 dBA, which can be annoying to daytime noise sensitive land uses such as schools (FTA 2006).

Vibration Sensitive Land Uses

Groundborne vibration can disrupt vibration sensitive land uses by causing movement of buildings, rattling of windows and items inside buildings, rumbling sounds, and even property damage. Vibration sensitive land uses include buildings where vibration would interfere with interior operations, such as vibration-sensitive research and manufacturing, hospitals with vibration-sensitive equipment, and university research operations. The degree of sensitivity to vibration depends on the specific equipment that would be affected by the vibration. Electron microscopes and high-resolution lithography equipment function within certain scientific and manufacturing tolerances that can be compromised in high vibration environments. Palomar Medical Center is a vibration sensitive land use in the City. Some vibration sensitive manufacturing uses may also be located in the industrial areas in the City's urban core. Residences and buildings where people normally sleep are also sensitive to excessive levels of vibration of either a regular or an intermittent nature. Institutional land uses with primarily daytime land uses are the least sensitive to vibration. Existing sources of groundborne vibration in the General Plan Update planning area include construction and railroad operations.

4.12.1.2 Ambient Noise Setting

Environmental Setting

The City of Escondido is developed with primarily residential and commercial uses. Some areas within the General Plan Update planning boundary include semi-rural residential development. Major sources of noise include transportation and non-transportation related activities, as discussed below.

Transportation Noise Sources

The most common source of noise in developed environments is transportation-related. Transportation noise sources within the General Plan Update planning area include roadways, airports, and railways. A discussion of each of these noise sources is provided below.

Roadways

Vehicular traffic on roadways is the most substantial source of noise within the General Plan Update area. According to the San Diego Association of Governments (SANDAG), 2.8 million vehicle miles are traveled daily on City roads (SANDAG 2003). There are several key factors associated with roadway or traffic noise, including traffic volumes; the speed of the traffic; the type or "mix" of vehicles using a particular roadway; and pavement conditions. Noise also varies by time of day. Some roadways are heavily traveled by commuters during the morning and late afternoon peak hours, but have substantially less traffic during non-peak commuting hours.

The roadway network in the City consists of a state highway (SR-78), an interstate highway (I-15), prime arterials, major roads, collector streets, and local collector streets.

Prime Arterials are roadways that generally have six to eight travel lanes, raised or landscaped medians, no parking, and very limited access. These streets provide regional, intra-city and sub-regional travel service. Prime arterials in Escondido include West Valley Parkway between Tulip Street and Ninth Avenue, Via Rancho Parkway south of Westfield Shoppingtown, and East Valley Parkway, east of Midway Drive.

Major Roads generally consist of four to six travel lanes, have controlled access, no parking, and raised or landscaped medians for added safety and efficiency. Protected left turns are provided at selected locations. These streets provide intra-city and sub-regional service. Major roads in Escondido's circulation system include Centre City Parkway, El Norte Parkway, and Broadway between Washington and Vista Avenues.

Collector Streets generally consist of four travel lanes and have controlled access. No parking is provided, or is restricted to areas where turn pockets or continuous turn lanes are provided. These streets provide intra-city travel. Collector streets in Escondido include Washington Avenue, Grand Avenue, Country Club Lane, and Escondido Boulevard.

Local Collector streets generally have two travel lanes with parking, except where parking is removed to provide turn lanes. These streets provide access between neighborhoods and to the Collector Street system. Local Collector streets in Escondido include Sheridan Avenue, Tulip Street, and Seven Oakes Road.

Noise contours under existing and horizon year conditions were calculated to estimate the extent of noise exposure from traffic-generated noise. Noise level contours are used as a guide for minimizing the exposure of community residents to noise. Noise contours represent lines of equal noise exposure, just as the lines on a weather map indicate equal temperature or atmospheric pressure. Contours are used to provide a general visualization of sound levels and should not be considered as absolute lines of demarcation. Noise contours for roadway noise sources in the City were developed for existing (2010) conditions and 2035 planning horizon conditions based on information provided in the Traffic Impact Analysis prepared for the General Plan Update (LLG 2011) and are expressed as CNEL values. The noise contours include the Mobility and Infrastructure Element roadways that are anticipated to experience more than 5,000 trips per day at the 2035 planning horizon, including proposed Mobility and Infrastructure Element and land use changes. The roadways include freeways, prime arterials, major roads, collector, and local collector streets. The Mobility and Infrastructure Element roadways do not include local or private roads that connect subdivisions and neighborhoods to the circulation system.

The existing noise contours are shown in Figure 4.12-1, Existing Noise Contours, and the horizon year (2035) conditions are shown in Figure 4.12-2, Future (2035) Noise Contours. Noise contours shown on Figure 4.12-1, Existing Noise Contours, present conservative conditions where no structures, sound walls, or other barriers that could attenuate noise levels intervene between the source and receiver. In areas where barriers or other landforms exist that interrupt the sound transmission, the noise contours overestimate the noise exposure. Further, the contour represents a 24-hour time-average sound level and the sound levels at a specific location and time could either be lower or higher than what is shown on the contour map since noise levels fluctuate throughout the day. The purpose of the noise contour map is to identify areas where noise has the potential to be a concern.

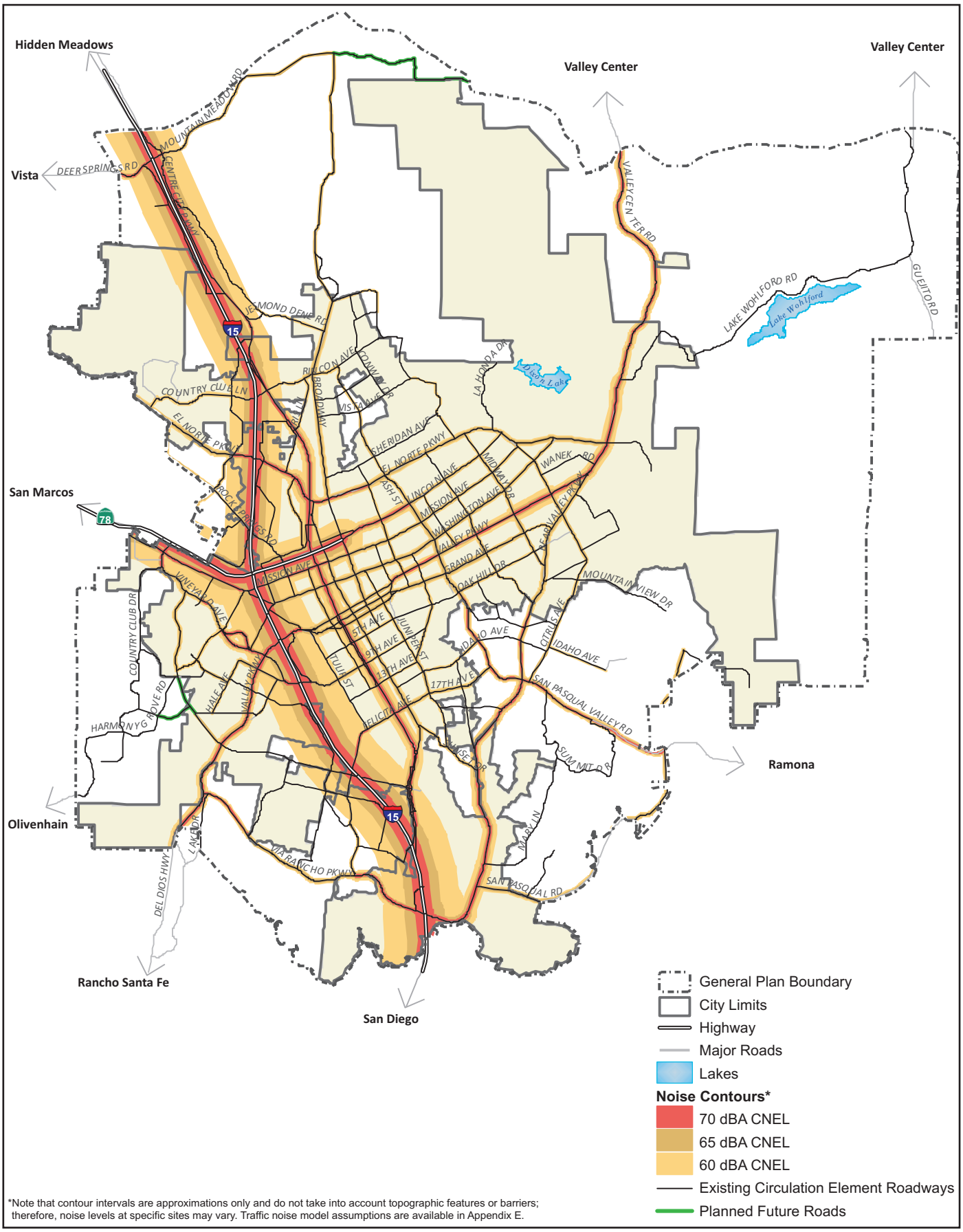
As shown in Figure 4.12-1, Existing Noise Contours, roadways throughout the General Plan Update planning area currently generate noise levels that exceed the City's noise compatibility standards for residences and other NSLU (60 dBA CNEL), office and commercial land uses (65 dBA CNEL), and industrial land uses (70 dBA CNEL), depending on the proximity to the roadway. Roadway segments in the City that currently generate noise levels greater than 60 dBA CNEL at the nearest noise-sensitive receptor location are shown in Table 4.12-3, Existing Roadway Noise Levels. For noise modeling assumptions, refer to Appendix E, Noise Technical Report, of this EIR.

The roadways that currently generate the greatest noise levels are I-15 (78-81 dBA CNEL), SR-78 from Nordahl Road to the end of the freeway (76-79 dBA CNEL), Bear Valley Parkway from Beethoven Drive to San Pasqual Valley Road (75-76 dBA CNEL), Centre City Parkway from South Iris Lane to the I-15 Southbound (SB) Ramps (74-76 dBA CNEL), Del Dios Road from Via Rancho Parkway to Mount Israel Road (77 dBA CNEL), Valley Parkway from Auto Park Way to the I-15 northbound (NB) Ramps (76 dBA CNEL), and Via Rancho Parkway from Quiet Hills Road to Beethoven Drive (72-77 dBA CNEL).

Airports

Another transportation-related noise source in the City is aviation operations. Noise generated from aviation operations is concentrated around airport buildings, runways, and along approach and departure routes. A heliport and several airports are located in the proximity of the General Plan Update area. A heliport is located at Palomar Medical Center which allows patients to be flown in or out of the hospital by helicopter. Helicopter flights average 23 round-trips per month (PPH 2005). Operation of the heliport does not exceed a noise level of 60 dBA CNEL at the hospital site (City 1990).

The closest public airports to the General Plan Update area are the McClellan-Palomar Airport and the Ramona Airport. The McClellan-Palomar Airport is located in the City of Carlsbad, approximately 10 miles west of the General Plan Update planning boundary. In 2006, the airport served approximately 201,100 annual operations. The portion of the General Plan Update planning area west of I-15 is located within Review Area 2 for the airport, which consists of locations within airspace protection and/or overflight notification areas. Limits on the heights of structures are the only restrictions on land uses within Review Area 2. The General Plan Update planning area is not located within the 60 dBA CNEL noise contour of the McClellan Palomar Airport (SDCRAA 2010). Ramona Airport is located in the unincorporated community of Ramona, approximately 10 miles southeast of the General Plan Update planning boundary. The airport served approximately 141,000 annual operations in 2005. A small area in the southern portion of the General Plan Update planning area is within the Review Area of Ramona Airport. The General Plan Update planning area is not located within the 60 dBA CNEL noise contour of the Ramona Airport (SDCRAA 2008).



*Note that contour intervals are approximations only and do not take into account topographic features or barriers; therefore, noise levels at specific sites may vary. Traffic noise model assumptions are available in Appendix E.

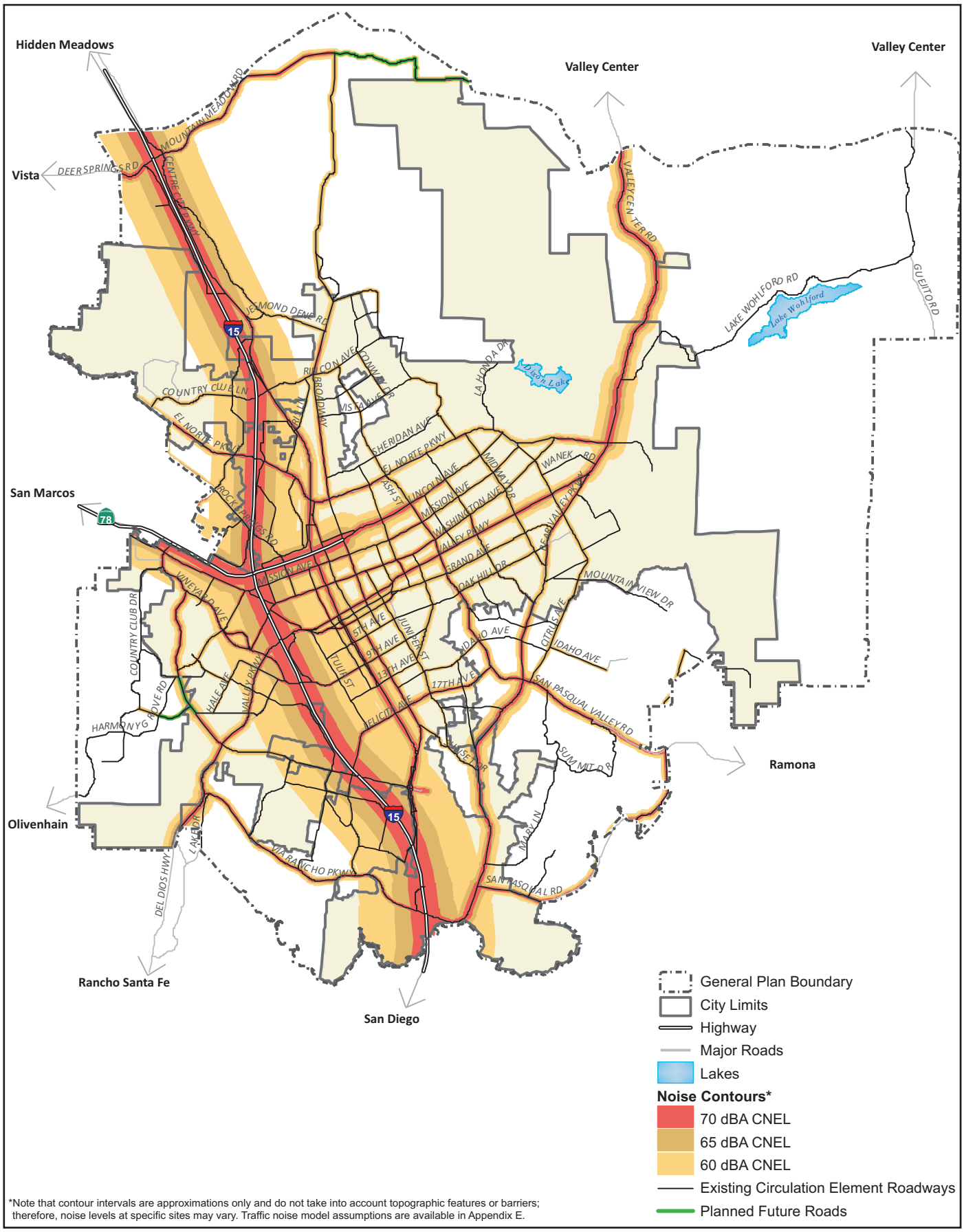
Source: City of Escondido 2011

ATKINS

0 .75 1.5
Miles

N

EXISTING NOISE CONTOURS
FIGURE 4.12-1



*Note that contour intervals are approximations only and do not take into account topographic features or barriers; therefore, noise levels at specific sites may vary. Traffic noise model assumptions are available in Appendix E.

Source: City of Escondido 2011

ATKINS

0 .75 1.5
Miles

N

FUTURE (2035) NOISE CONTOURS
FIGURE 4.12-2

Table 4.12-3 Existing Roadway Noise Levels

Roadway	Segment	Receptor Distance from Centerline (feet)	Noise Level at Nearest Receptor[(1)] (dBA CNEL)
Interstate 15	North of Deer Springs Road to South of Via Rancho Parkway	100	78-81
State Route 78	West of Nordahl Road to end of freeway	100	76-79
13th Avenue	Quince Street to Juniper Street	25	62-65
17th Avenue	Juniper Street to San Pasqual Valley Road	25	69-70
5th Avenue	Quince Street to Juniper Street	25	64-67
9th Avenue	Hale Avenue to Juniper Street	25-50	63-73
Andreasen Drive	Mission Road to Citracado Parkway	30-45	67-67
Ash Street	Rincon Avenue to Grand Avenue	25-45	66-70
Auto Park Way	SR-78 Eastbound Ramps to West 9th Avenue	45	70-73
Avenida del Diablo	Valley Parkway to Del Dios Road	25	61
Barham Road	Mission Road to Westerly End	25	66
Bear Valley Parkway	Beethoven Drive to Valley Parkway	25-45	69-76
Bennett Avenue	El Norte Parkway to Rock Springs Road	25	67
Bernardo Avenue	Citracado Parkway to Hamilton Lane	25	69
Broadway	Mountain Meadow Road to 5th Avenue	25-45	65-71
Centre City Parkway	Mountain Meadow Road - I-15 Southbound On-Ramp	25-45	70-76
Centre City Parkway Frontage Road	Brotherton Road to Citracado Parkway	25	62
Chestnut Street	5th Avenue to 13th Avenue	25	67
Citracado Parkway	Auto Park Way to Andreasen Drive	50	65
	Avenida del Diablo to Valley Parkway	25	67
	Bernardo Avenue to Centre City Parkway	25	64-66
Citrus Avenue	El Norte Parkway to San Pasqual Valley Road	25	66-69
Cloverdale Road	Rockwood Road to San Pasqual Valley Road (SR-78)	30	68
Conway Drive	Rincon Avenue to Vista Avenue	25	60-61
Country Club Lane	El Norte Parkway to Ash Street	45	63-67
Date Street	Valley Parkway to 5th Avenue	25-40	63-65
Deer Springs Road	West of I-15 Ramps	50	70
Del Dios Road	Via Rancho Parkway to Mount Israel Road	50	77
	West 9th Avenue to Avenida del Diablo	25	64-68
Del Lago Boulevard	I-15 to Via Rancho Parkway	25-40	67-69
El Norte Parkway	Washington Avenue to Bear Valley Parkway/Valley Center Road	45	69
	Woodland Parkway to Lincoln Avenue	40-50	67-75
Enterprise Street	Andreasen Drive to Hale Avenue	25	67
	Mission Road to Auto Park Way	25	63
Escondido Boulevard	El Norte Parkway to Citracado Parkway	25-45	65-70
Felicita Avenue	Tulip Street to Juniper Street	25-40	70-71
Felicita Road	Tulip Street to Via Rancho Parkway	25	67-73

Table 4.12-3 continued

Roadway	Segment	Receptor Distance from Centerline (feet)	Noise Level at Nearest Receptor[(1)] (dBA CNEL)
Fig Street	El Norte Parkway to Valley Parkway	25-30	63-68
Grand Avenue	Valley Parkway to Bear Valley Parkway	25-40	62-70
Hale Avenue	11th Street/Enterprise Road to Avenida del Diablo	25	66
	HOV Off-Ramp to Auto Park Way	30	68-70
	I-15 Northbound HOV Off-Ramp to Metcalf Street	40	70-71
	West 9th Avenue to 11th Avenue	25	68
Harding Street	Washington Avenue to Valley Parkway	45	64
	Lincoln Avenue to Mission Avenue	50	61
Hickory Street	Mission Avenue to Valley Parkway	25	61-62
Idaho Avenue	Juniper Street to East of Citrus Avenue	25	63-67
Ivy Dell Lane	Centre City Parkway to Jesmond Dene Road	25	61
Jesmond Dene Road	Ivy Dell Lane to Broadway	25	64-65
Juniper Street	Washington Avenue to Sunset Drive	25-30	63-70
Kauana Loa	Harmony Grove Road to Citracado Parkway	25	65
La Terraza Boulevard	Valley Parkway to 9th Avenue	35	66
Lincoln Avenue	Broadway to El Norte Parkway	25-40	62-74
Metcalf Street	Lincoln Avenue to Washington Avenue	25	62-67
Midway Drive	El Norte Parkway to Bear Valley Parkway	25-45	64-69
Mission Avenue	Andreasen Drive to Citrus Avenue	25-45	67-71
Mission Road	Bennett Avenue to Andreasen Drive	40-45	71-72
Montiel Road	Nordahl Road to Deodar Road	30	69
Morning View Road	El Norte Parkway to Lincoln Avenue	25	67
Mountain Meadow Road	Champagne Road to Broadway	25-50	67
Nordahl Road	Rock Springs Road to SR-78 Westbound Ramps	24-40	70-71
North Avenue	Broadway to Vista Verde Lane	25	63
North Iris Lane	Country Club Road to Centre City Parkway	25	66
Nutmeg Street	I-15 to Centre City Parkway	25	64
	I-15 to Rock Springs Road	25	63-67
Oak Hill Drive	San Pasqual Valley Road to Midway Drive	25	65-68
Pine Street	Grand Avenue to 2nd Avenue	25	66
Quince Street	Mission Avenue to 13th Avenue	25-45	63-67
Rock Springs Road	Bennett Avenue to Montiel Road	25	65-67
	Lincoln Avenue to Washington Avenue	25-30	66-70
Rose Street	Lincoln Avenue to Bear Valley Parkway	25-30	64-69
San Pasqual Road	San Pasqual Valley Road (SR-78) to Bear Valley Parkway	25-45	69-71
San Pasqual Valley Road (SR-78)	Grand Avenue to Cloverdale Road	25-50	69-74
Second Avenue	Grand Avenue to Valley Parkway	40	67-70
Seven Oaks Road	El Norte Parkway to Borden Road	25	66
South Iris Lane	Centre City Parkway to El Norte Parkway	25	65

Table 4.12-3 continued

Roadway	Segment	Receptor Distance from Centerline (feet)	Noise Level at Nearest Receptor[(1)] (dBA CNEL)
Sunset Drive	Escondido Boulevard to Bear Valley Parkway	25	67-68
Tulip Street	Hale Avenue to West Valley Parkway	40	70
Valley Center Road	El Norte Parkway to north of Lake Wohlford Road	50-60	73-74
Valley Parkway	Via Rancho Parkway to El Norte Parkway	25-55	70-76
Via Rancho Parkway	Valley Parkway to Beethoven Drive	40-55	71-77
Vista Verde Way	Vista Avenue to El Norte Parkway	25	62
Washington Avenue	Metcalf Street to El Norte Parkway	40-45	66-71

(1) See Appendix E, Noise Technical Report, for noise modeling assumptions.
Source: FHWA 2004

Two private airports operate in the proximity of the General Plan Update planning area. A small private landing strip operates at the Lake Wohlford Resort, at 25484 Lake Wohlford Road. Air traffic consists of approximately 10 to 15 landings of single-engine light aircraft per week. The landing strip is isolated from urbanized residential areas, and noise from this facility does not result in excessive noise levels (City 2000). Blackinton Airport is a private air strip located at 30114 Airflight Drive in the Valley Center community, approximately three miles north of the General Plan Update boundary. A total of 12 single engine airplanes are based at the airport for recreational use (AirNav.com 2011). Due to the small aircraft size and limited number of flights generated by this airport, it is not a substantial contributor to ambient noise.

The City also currently experiences noise from military aircraft overflights associated with helicopters based at Marine Corps Air Station (MCAS) Miramar; however the General Plan Update area is not within the 60 dBA CNEL noise contour for MCAS Miramar (SDCRAA 2008). MCAS Miramar is located approximately 12 miles south of the General Plan Update planning boundary.

Railroads

The North County Transit District (NCTD) operates the ~~Sprinter~~SPRINTER, a light rail transit line that extends from Oceanside to Escondido. The ~~Sprinter~~SPRINTER runs every 30 minutes in each direction Monday through Friday, from approximately 4:00 a.m. to 9:00 p.m. Saturday, Sunday, and holiday trains operate every 30 minutes between 10:00 a.m. and 6:00 p.m. and hourly before 10:00 a.m. and after 6:00 p.m. The eastern end of the ~~Sprinter~~SPRINTER line is the Escondido Transit Center, located at 796 West Valley Parkway. Another ~~Sprinter~~SPRINTER station is located at the southwestern corner of Mission Road and Auto Park Way (Nordahl Station). The 60 dBA Ldn noise contour for the rail line is 50 feet from the track (ISE 2009). Land uses adjacent to the rail line through Escondido include non-noise sensitive commercial and industrial businesses. The nearest existing residential land use is approximately one-eighth mile (650 feet) south of the Escondido Transit Station, on the south side of Valley Parkway. In the City, the track runs parallel to West Mission Road, a small segment of Washington Avenue, and Santa Fe Avenue. Consequently, rail noise is not a significant issue for current residents. This rail line is also utilized by the Atchison, Topeka and Santa Fe (AT&SF) Railroad for one round trip daily, three days a week, for freight deliveries. The 60 CNEL contour for this rail line is within the railroad right-of-way (City 2000).

Non-Transportation Noise Generators

Non-transportation related noise generators are commonly called "stationary," "fixed," "area," or "point" sources of noise. Industrial processing, mechanical equipment, pump stations, and heating, ventilating, and air conditioning (HVAC) equipment are examples of fixed location, non-transportation noise sources within the General Plan Update planning area. Some non-transportation sources are not stationary but are typically assessed as point or area sources due to the limited area in which they operate, such as truck deliveries, agricultural field machinery, and mining equipment.

Noise generated by industrial operations is limited to the urban core, primarily in the industrial and manufacturing area located south of SR-78 generally between the western City limits and Interstate 15. Residential areas are located adjacent to the western and southern portions of the industrial areas (City 1990). Noise generated by industrial operations, maintenance, manufacturing, truck loading and unloading, and warehousing noise can affect surrounding NSLU.

Commercial uses are interspersed throughout the General Plan Update area primarily along major transportation corridors. Noise sources include activities such as parking lot sweeping, loading, delivery, trash collection, and car door slamming. Westfield Shoppingtown (North County Fair) is a major commercial facility located adjacent to I-15 on Bear Valley Parkway. Other shopping destinations include the Felicita Shopping Center, located east of I-15 on Centre City Parkway; Escondido Square Shopping Center, located south of SR-78 on Escondido Boulevard; and Escondido Village Mall Shopping Center, located along Lincoln Avenue at Ash Street.

Five active extraction (mining) operations are located outside of the City on the eastern edge of the General Plan Update planning boundary, along San Pasqual Valley Road and Lake Wohlford Road. Noise is generated from heavy equipment used in quarry and mining activities and blasting operations. Additionally, offsite vehicular noise may be generated by the transportation of materials to and from the mining facility. Typical noise sources and sound levels for mining operations located in the unincorporated County of San Diego were summarized from technical noise reports prepared for the County of San Diego General Plan Update EIR (PBS&J 2009). Hourly Leq from typical extraction equipment ranges from 50 to 91 dBA at 50 feet from the source.

San Diego Gas and Electric (SDG&E) currently operates the Palomar Energy Center power plant in the industrialized area of the ERTC North SPA. Noise and vibration impacts that would result from operation of the power plant were analyzed and addressed as part of the approval process for the plant (CEC 2006). In order to reduce noise levels, several noise attenuating features were incorporated into the energy center design, including installation of noise barriers and locating the power plant to take advantage of the natural noise attenuation provided by a hill that separates the power plant from the nearest existing sensitive receptors. With these measures incorporated, the power plant is estimated to result in operational noise levels up to 43 dBA at the Palomar Medical Center site, located 900 feet from the plant, and 37 dBA at the nearest residential receptors, single family dwellings located 1,800 feet to the west of the power plant. The study determined that no significant vibration impacts would result from the power plant (CEC 2005).

Agricultural operations also have the potential to contribute to noise levels. Agricultural operations are located along the edges of the General Plan Update planning area, near San Pasqual Valley Road to the east of the City boundary, Harmony Grove Road to the west of the City boundary, and I-15, just outside the northern and southern City boundaries. These areas include Williamson Act contract land and

agricultural preserves. Agricultural operations for the City include nursery and flower crops, eggs and egg products, citrus, and vegetable crops. The agricultural noise sources that generate the highest sound levels are chainsaws, crop dusting aircraft, and tractors.

Temporary and/or Nuisance Noise

Intermittent or temporary neighborhood noise from amplified music, public address systems, barking dogs, landscape maintenance, stand-by power generators, and construction activities are disturbing to residents but are difficult to attenuate and control. Nuisance noise impacts occur more frequently in densely developed areas because there are more sources of noise, as well as more receptors that may consider the noise a nuisance. The City's urban core is more frequently exposed to nuisance noise compared to the rural edges of the City.

4.12.2 Regulatory Framework

4.12.2.1 Federal

Federal Aviation Administration Standards

Enforced by the Federal Aviation Administration (FAA), Title 14, Part 150 prescribes the procedures, standards and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. Title 14 also identifies those land uses which are normally compatible with various levels of exposure to noise by individuals. It provides technical assistance to airport operators, in conjunction with other local, state, and federal authorities, to prepare and execute appropriate noise compatibility planning and implementation programs. The FAA establishes the 65 dB CNEL contour of an airport as the threshold for evaluation of potential noise impacts. The maximum airport-related noise level considered compatible with NSLU is 65 dBA CNEL.

Federal Transit Administration Standards

The FTA establishes noise impact criteria to be used in evaluating noise impacts from mass transit projects, including railroads, in the Transit Noise and Vibration Impact Assessment published in 2006. The FTA criteria do not establish a screening level for potential impacts. Rather, the FTA noise impact criteria are based on comparison of the existing outdoor noise levels and the future outdoor noise levels from the transit project. The noise level that would result from a proposed transit project's implementation is evaluated as having either a low, moderate or severe impact based on the existing noise level and sensitivity of the affected land use. Lands set aside for serenity and quiet are considered the most sensitive land uses (Category 1), followed by residences and buildings where people normally sleep (Category 2), and institutional land uses with primarily daytime and evening use (Category 3).

4.12.2.2 State

California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code (H&SC), known as the California Noise Control Act, finds that excessive noise is a serious hazard to public health and welfare and that

exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also finds that there is a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the state to provide an environment for all Californians that is free from noise that jeopardizes their health or welfare.

California Noise Insulation Standards (CCR Title 24, Part 2, Chap. 2-35)

In 1974, the California Commission on Housing and Community Development (HCD) adopted noise insulation standards for multi-family residential buildings (Title 24, Part 2, California Code of Regulations). Title 24 establishes standards for interior room noise (attributable to outside noise sources). The regulations also specify that acoustical studies must be prepared whenever a multi-family residential building or structure is proposed to be located near an existing or adopted freeway route, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source, and where such noise source or sources create an exterior CNEL (or Ldn) of 60 dBA or greater. Such acoustical analysis must demonstrate that the residence has been designed to limit intruding noise to an interior CNEL (or Ldn) of at least 45 dBA.

California Airport Noise Standards (CCR, Title 21, Section 5000 et. Seq.)

The 1990 California Airport Noise Standards require airport proprietors, aircraft operators, local governments, pilots, and the California Department of Transportation Division of Aeronautics to work cooperatively to diminish noise. This requirement is accomplished by controlling and reducing noise in the communities in the vicinity of airports. The level of noise acceptable to a person residing in the vicinity of an airport is established as a CNEL value of 65 dBA. The limitation on airport noise in residential communities is established to be 65 dBA CNEL for proposed new airports, active military airports being converted to civilian use, and existing civilian airports.

4.12.2.3 Regional/Local

Airport Land Use Compatibility Plans

Airport Land Use Compatibility Plans (ALUCPs) are plans that guide property owners and local jurisdictions in determining what types of proposed new land uses are appropriate around airports. They are intended to protect the safety of people, property and aircraft on the ground and in the air in the vicinity of an airport. ALUCPs are based on a defined area around an airport known as the Airport Influence Area (AIA). ALUCPs include policies that address noise compatibility issues associated with airports and their respective AIAs. The San Diego County Regional Airport Authority adopted an amended ALUCP for the Ramona Airport in 2008, and the McClellan-Palomar Airport in 2010.

City of Escondido Community Protection Element

The existing General Plan Community Protection Element establishes noise and land use compatibility standards and outlines goals and policies to achieve these standards. New projects in the City are

required to meet the Noise Compatibility Guidelines listed in Table 4.12-4, Existing City of Escondido Noise Compatibility Guidelines, to determine the compatibility of land uses when evaluating proposed development projects (Noise Policy E1.1). A land use located in an area identified as "normally acceptable" indicates that standard construction methods would attenuate exterior noise to an acceptable indoor noise level and that people can conduct outdoor activities with minimal noise interference. Land uses that fall into the "conditionally acceptable" noise environment should prepare an acoustical study that considers the type of noise source, the sensitivity of the noise receptor, and the degree to which the noise source has the potential to interfere with sleep, speech, or other activities characteristic of the land use. For land uses where the exterior noise level falls within the "conditionally unacceptable" range, new construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made with noise insulation features included in the design. For land uses where the exterior noise levels fall within the "clearly unacceptable" range, new construction generally should not be undertaken.

Table 4.12-4 Existing City of Escondido Noise Compatibility Guidelines

Land Use Category	Exterior Noise Level (CNEL) 55	60	65	70	75	80
Residential						
Transient Lodging, Motels, Hotels						
Schools, Libraries, Churches, Hospitals, Nursing Homes						
Auditoriums, Concert Halls, Amphitheaters						
Sports Arena, Outdoor Spectator Sports						
Playgrounds, Neighborhood Parks						
Golf Courses, Riding Stables, Water Recreation, Cemeteries						
Office Buildings, Business Commercial, Professional						
Industrial, Manufacturing, Utilities, Agriculture						

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

CONDITIONALLY ACCEPTABLE - New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design.

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

CLEARLY UNACCEPTABLE - New construction or development clearly should not be undertaken.

Source: City 1990

When preparing acoustical studies, noise measurements in residential areas should generally be applied at 10 feet from the backyard property line, as discussed in Noise Policy E1.2. However, in certain cases, such as on estate lots where backyards are typically very large, the 60 dBA CNEL goal could be applied to a location that is approximately one half of the distance between the back of the main residential structure and the rear property line. The outdoor standard should not normally be applied to balconies or patios associated with residential uses. Noise Policy E1.4 states that noise impacts of proposed projects on existing land uses should be evaluated in terms of potential for adverse community response based on a significant increase in existing noise levels. For example, if an area is currently below the maximum normally acceptable noise level, an increase in noise up to the maximum allowable level should not necessarily be allowed. Projects increasing noise levels by 5 dB or greater should be considered as generating a significant impact and would require mitigation to reduce noise levels.

City of Escondido Municipal Code Chapter 17, Article 12, Noise Abatement and Control (Noise Ordinance)

The Noise Ordinance establishes prohibitions for disturbing, excessive or offensive noise, and provisions such as sound level limits for the purpose of securing and promoting the public health, comfort, safety, peace, and quiet for its citizens. Table 4.12-5, City of Escondido Exterior Sound Limit Levels, shows the allowable noise levels at any point on or beyond the boundaries of the property on which the sound is produced, and corresponding times of day for each zoning designation. The noise standards apply to each property or portion of property substantially used for a particular type of land use reasonably similar to the land use types shown in Table 4.12-5, City of Escondido Exterior Sound Limit Levels. Where two or more dissimilar land uses occur on a single property, the more restrictive noise limits apply. Environmental noise is measured by the Leq for the hours as specified in Table 4.12-5. If the noise is continuous, the Leq for any hour will be represented by any lesser time period within that hour. If the noise is intermittent, the Leq for any hour may be represented by a time period typical of the operating cycle, but the measurement period must be 15 minutes or longer. If the measured ambient level exceeds the permissible noise level, the allowable noise exposure standard is the ambient noise level. Noise restrictions are listed in Sections 17-230 through 17-241 of the Noise Ordinance, such as specific regulations pertaining to motor vehicles and burglar alarms. Additional sections of the Noise Ordinance applicable to this analysis are listed below.

Table 4.12-5 City of Escondido Exterior Sound Limit Levels

Zone	Time	Applicable Limit One-hour Average Sound Level (A-weighted Decibels)
Residential zones	7:00 a.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	45
Multi-residential zones	7:00 a.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	50
Commercial zones	7:00 a.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	55
Light industrial/Industrial park zones	Anytime	70
General Industrial zones	Anytime	75

Source: City of Escondido Municipal Code Section 17-229, Sound Level Limits

Section 17-229(c)(5) (Corrections to Exterior Noise Level Limits)

Section 17-229 (c)(5) of the Noise Ordinance, Corrections to Exterior Noise Level Limits, includes the following regulations:

a) If the noise is continuous, the Leq for any hour will be represented by any lesser time period within that hour. Noise measurements of a few minutes only will thus suffice to define the noise level.

b) If the noise is intermittent, the Leq for any hour may be represented by a time period typical of the operating cycle. Measurement should be made of a representative number of noisy/quiet periods. A measurement period of not less than 15 minutes is, however, strongly recommended when dealing with intermittent noise.

c) In the event the alleged offensive noise, as judged by the enforcement officer, contains a steady, audible sound such as a whine, screech or hum, or contains a repetitive impulsive noise such as hammering or riveting, the standard limits set forth in Table 4.12-5, City of Escondido Exterior Sound Limit Levels, shall be reduced by 10 dB or to the ambient noise level when such noises are not occurring.

d) If the measured ambient level exceeds that permissible in Table 4.12-5, City of Escondido Exterior Sound Limit Levels, the allowable noise exposure standard shall be the ambient noise level. The ambient level shall be measured when the alleged noise violations source is not operating.

e) The sound level limit at a location on a boundary between two land use classifications is the limit applicable to the receiving land use; provided, however, that the one-hour average sound level limit applicable to extractive industries including, but not limited to, borrow pits and mines, shall be 75 dB at the property line regardless of the zone where the extractive industry is actually located.

   Fixed-location public utility distribution or transmission facilities located on or adjacent to a property line shall be subject to the noise level limits of this section, measured at or beyond six feet from the boundary of the easement upon which the equipment is located.

Section 17-234 (Construction Equipment)

Except for emergency work, the following applies to all construction equipment operating in the City:

a) It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site, except on Monday through Friday during a week between the hours of 7:00 a.m. and 6:00 p.m. and on Saturdays between the hours of 9:00 a.m. and 5:00 p.m., and provided that the operation of such construction equipment complies with the requirements of subsection (c) of this section.

b) It shall be unlawful for any person, including the City of Escondido, to operate construction equipment at any construction site on Sundays and on days designated by the President, Governor or City Council as public holidays.

c) No construction equipment or combination of equipment, regardless of age or date of acquisition, shall be operated so as to cause noise in excess of a one-hour average sound level

limit of 75 dB at any time, unless a variance has been obtained in advance from the City Manager.

Section 17-237 (Landscape Equipment)

It shall be unlawful for any person, including the City of Escondido, to use any motorized landscape equipment, including but not limited to power blowers and vacuums, which causes a disturbing, excessive or offensive noise as defined under Section 17-227(k) of the Noise Ordinance. Disturbing, excessive or offensive noise refers to any sound or noise exceeding the noise standards established in the Noise Ordinance (Table 4.12-5, City of Escondido Exterior Sound Limit Levels).

Section 17-238 (Grading)

a) It shall be unlawful for any person, including the City of Escondido, to do any authorized grading at any construction site, except on Mondays through Fridays during a week between the hours of 7:00 a.m. and 6:00 p.m. and, provided a variance has been obtained in advance from the City Manager, on Saturdays from 10:00 a.m. to 5:00 p.m.

b) For the purpose of this section, "grading" shall include, but not be limited to, compacting, drilling, rock crushing or splitting, bulldozing, clearing, dredging, digging, filling and blasting.

c) In addition, any equipment used for grading shall not be operated so as to cause noise in excess of a one-hour sound level limit of 75 dB at any time when measured at or within the property lines of any property which is developed and used in whole or in part for residential purposes, unless a variance has been obtained in advance from the City Manager.

Section 17-240

Section 17-240 includes additional general noise regulations. This section states that it is unlawful for any person to make, continue or cause to be made or continued, any disturbing, excessive or offensive noise which causes discomfort or annoyance to reasonable persons of normal sensitivity. Noises declared to be disturbing, excessive and offensive include stereo equipment, animal noise, and loading and unloading of vehicles that disturbs neighboring receptors. This section also establishes the following requirements for pile driving activities: No person shall operate between the hours of 6:00 p.m. and 7:00 a.m. on weekdays, or on Saturdays, Sundays or any legal holidays, any pile driver, pneumatic hammer, derrick, or other similar appliance, the use of which is attended by loud or unusual noise, unless a variance has been obtained in advance from the City Manager. Section 17-242 of the Noise Ordinance exempts agricultural operations from the standards in Table 4.12-5, City of Escondido Exterior Sound Limit Levels, provided that agricultural operations meet equipment standards and limit their hours of operation.

City of Escondido Municipal Code Chapter 33, Article 47, Environmental Quality Regulations

The Environmental Quality Regulations (EQRs) implement CEQA and the CEQA Guidelines (guidelines) by applying the provisions and procedures contained in CEQA to development projects proposed within the City of Escondido. Section (a)(2) pertains to noise impacts, specifically noise impacts related to the widening of Mobility and Infrastructure Element streets. According to this section, the following incremental noise increases are generally not considered significant:

a) Short or long-term increases, regardless of the extent, that do not result in noise increases in excess of General Plan standards.

b) Short or long-term increases that result in a 3 dBA or less incremental increase in noise beyond the General Plan's noise standards.

4.12.3 Analysis of Project Impacts and Determination of Significance

4.12.3.1 Issue 1: Excessive Noise Levels

Guidelines for Determination of Significance

Based on Appendix G of the CEQA Guidelines, the City of Escondido Noise Ordinance and other existing City policies and regulations, the proposed project would result in a significant impact if it would expose new development to noise levels in excess of the Noise Compatibility Standards established in the City's General Plan Community Protection Element, provided in Table 4.12-4, Existing City of Escondido Noise Compatibility Guidelines.

Impact Analysis

This section addresses potential impacts related to locating proposed new NSLU in areas where the existing ambient noise level exceeds the General Plan Update Noise Compatibility Standards, including existing railroad, traffic, and operational noise sources.

Permanent increases in ambient noise levels as a result of future vehicular traffic and operation of land uses proposed under the proposed project are addressed in Section 4.12.3.3, Issue 3: Permanent Increase in Ambient Noise Levels, and exposure to excessive noise levels from aircraft is addressed in Section 4.12.3.5, Issue 5: Excessive Noise Exposure from Airports.

Growth under the proposed Downtown Specific Plan Update would be consistent with the growth identified for the General Plan Update. The Downtown Specific Plan Update has been prepared in conjunction with the General Plan Update and the growth projections for the Downtown SPA are included in the growth projections for the General Plan Update. The E-CAP was prepared in conjunction with, and is intended to support, the General Plan Update land use designations. It does not propose any development or growth beyond that which is allowed under the General Plan Update. E-CAP reduction measures, such as transit oriented development, would be implemented as part of future development projects consistent with the General Plan Update. Therefore, the following analysis pertains to the General Plan Update, the Downtown Specific Plan Update and the E-CAP.

Transportation Noise Sources

Railroad Noise

The railroad that traverses the City is used by the ~~Sprinter~~SPRINTER commuter rail line and the AT&SF freight line. The 60 dBA Ldn noise contour for the ~~Sprinter~~SPRINTER rail line is 50 feet from the track, which is within the right-of-way of the railroad (ISE 2009), and is shown in Figure 4.12-1, Existing Noise Contours. The 60 dBA Ldn contour for the freight line is also within the railroad right-of-way (City 2000).

Therefore, the rail line would not expose any land uses to noise levels greater than 60 dBA Ldn, and would be compatible with all land uses shown in Table 4.12-4, Existing City of Escondido Noise Compatibility Guidelines. The proposed project does not include any changes to ~~Sprinter~~SPRINTER or freight rail operations. As a result, future land uses developed under the proposed project would not be exposed to excessive noise levels from the ~~Sprinter~~SPRINTER or freight rail lines.

Roadway Noise

As shown in Table 4.12-3, Existing Roadway Noise Levels, several roadways within the General Plan Update planning area currently generate noise levels that exceed the City's Noise Compatibility Standards for residences and other NSLU (60 dBA CNEL), office and commercial land uses (65 dBA CNEL), and industrial land uses (70 dBA CNEL). The City's existing noise contours are shown in Figure 4.12-1, Existing Noise Contours, and the noise contours shown on Figure 4.12-2, Future (2035) Noise Contours, represent traffic noise at the 2035 planning horizon.

The roadways that currently generate the greatest noise levels are I-15 within the entire General Plan Update area (78-81 dBA CNEL), SR-78 from Nordahl Road to the end of the freeway (76-79 dBA CNEL), Bear Valley Parkway from Beethoven Drive to San Pasqual Valley Road (75-76 dBA CNEL), Centre City Parkway from South Iris Lane to the I-15 SB Ramps (74-76 dBA CNEL), Del Dios Road from Via Rancho Parkway to Mount Israel Road (77 dBA CNEL), Valley Parkway from Auto Park Way to the I-15 NB Ramps (76 dBA CNEL), and Via Rancho Parkway from Quiet Hills Road to Beethoven Drive (72-77 dBA CNEL).

As discussed above under railroad noise, all of the proposed General Plan Update land use designations would be compatible with noise levels of 60 dBA CNEL or less. Therefore, the 60 dBA CNEL noise contour is the screening distance for potential noise impacts and any land uses beyond the 60 dBA CNEL contour would not result in significant noise impacts from traffic. Commercial, office, and industrial land uses would be compatible with noise levels higher than 60 dBA. Exposure of these land uses to excessive traffic noise would only occur if a proposed commercial or office use would be located within the 65 dBA CNEL noise contour of a roadway, or an industrial land use would be located within the 70 dBA CNEL noise contour. However, for the purposes of this analysis, the 60 dBA CNEL contour is used as a conservative screening level to determine areas where further study would be required for future development projects.

I-15 traverses the entire General Plan Update planning area from north to south. The 60 dBA CNEL noise contour for this freeway encompasses land designated for residential, commercial, office, and industrial land uses, and portions of Imperial Oaks SPA Nutmeg Street Study Area, Transit Station Target Area, Downtown SPA, Promenade Retail Center and Vicinity Target Area, I-15/Felicita Road Corporate Office Target Area, Centre City Parkway/Brotherton Road Target Area, and Westfield Shoppingtown Target Area. These study areas would accommodate new multi-family residences and commercial/retail, office and industrial land uses.

The freeway portion of SR-78 traverses the City from west to east, from the western City boundary to approximately one mile east of I-15. The 60 dBA CNEL contour for this freeway encompasses land designated for residential, industrial and commercial uses and portions of the ERTC North SPA, Transit Station Target Area, Downtown SPA, and Highway 78/Broadway Target Area. These study areas would accommodate new multi-family residences, and commercial/retail, office and industrial land uses. Therefore, new development under the proposed project near the I-15 and SR-78 freeway corridors

would have the potential to be exposed to ambient noise levels in excess of the City's Noise Compatibility Standards.

The 60 dBA CNEL contour for the segment of Bear Valley Parkway from Beethoven Drive to San Pasqual Valley Road encompasses areas designated for residential land use and a portion of the Westfield Shoppingtown Target Area, which would accommodate new commercial/retail and office development. The 60 dBA CNEL noise contour for the segment of Centre City Parkway from South Iris Lane to the I-15 SB Ramps encompasses land designated for commercial, residential, and industrial use, as well as portions of Transit Station Target Area, Highway 78/Broadway Target Area, Downtown SPA, South Quince Target Area, South Escondido Boulevard/Felicita Road Target Area, South Escondido Boulevard/Centre City Parkway Target Area, and Centre City Parkway/Brotherton Road Target Area, which would accommodate new single family and multi-family residences, and commercial/retail, office, and industrial uses. The 60 dBA CNEL noise contour for Del Dios Highway to approximately one mile south of Via Rancho Parkway (at the General Plan Update planning area boundary) encompasses land designated for low density residential land use. The 60 dBA CNEL noise contour for Valley Parkway from Auto Park Way to the I-15 NB Ramps encompasses land designated for commercial land use and a portion of Promenade Retail Center and Vicinity Target Area, which would accommodate new commercial/retail and office uses. The 60 dBA CNEL noise contour for Via Rancho Parkway from Quiet Hills Road to Beethoven Drive encompasses land designated for residential and commercial land use, and a portion of Westfield Shoppingtown Target Area, which would accommodate new commercial and office land uses. Therefore, new development that is consistent with the proposed General Plan Update land uses but located near the roadways discussed above would have the potential to be exposed to ambient noise levels in excess of the City's Noise Compatibility Standards.

Additionally, as identified in Figure 4.12-1, Existing Noise Contours, the 60 dBA CNEL noise contours for the existing ~~Circulation~~Mobility and Infrastructure Element roadways encompass areas designated for residential land use within all of the study areas and in locations outside of the study areas throughout the proposed General Plan Update planning area. Additionally, freeways and several major roadways currently exceed the existing Noise Compatibility Standards for office and commercial development (65 dBA CNEL) and industrial development (70 dBA CNEL) in the City's urban core. Therefore, new development accommodated by the proposed General Plan Update throughout the planning area would have the potential to be exposed to ambient noise levels in excess of the City's existing Noise Compatibility Standards. A potentially significant impact would occur.

Operational Noise Sources

Future growth under the proposed General Plan Update and Downtown Specific Plan Update would be focused in the existing downtown, urban core, employment and mixed use areas, which are identified as General Plan Update study areas. Therefore, potential impacts related to the siting of new land uses accommodated by the proposed project would be concentrated in these areas. This analysis focuses on development proposed in the study areas, with a general discussion of potential noise impacts outside the study areas. The major categories of existing land use types in the City that have the potential to generate operational noise include commercial/office, industrial, agricultural, extractive (mining), and parks/open space/residential, as discussed below.

Commercial and Office Development

General noise sources from commercial and office operations include parking lot noises, delivery trucks, and HVAC units. Mechanical HVAC equipment located on the ground or on rooftops of new buildings would have the potential to generate noise levels which average 72 dBA CNEL at a distance of 50 feet when the equipment is operating continuously for 24 hours (City of Santa Ana 2010). For a single point source such as a piece of mechanical equipment, the sound level normally decreases by about 6 dBA for each doubling of distance from the source. Therefore, it is assumed that HVAC equipment would generate noise levels that exceed 60 dBA CNEL within approximately 200 feet of the equipment. Consequently, residences or other NLSU located in close proximity to a commercial or office building that requires an HVAC system would have the potential to result in a significant impact.

Commercial and office uses are currently located throughout the urban core, including all study areas except the Nutmeg Street Study Area. Future residential growth under the proposed project would be concentrated in the study areas, including the Transit Station Target Area, South Quince Street Target Area, South Escondido Boulevard/Felicita Avenue Target Area, Centre City Parkway/Brotherton Road Target Area, East Valley Parkway Target Area, South Escondido Boulevard/Centre City Parkway Target Area, ERTC South SPA, and the Downtown SPA. Therefore, new development accommodated by the proposed project would have the potential to be exposed to excessive noise levels from existing commercial and office development. A potentially significant impact would occur.

Industrial Land Uses

Operation of an industrial facility can generate noise associated with mechanical equipment (pumps, rooftop equipment, condenser units, HVAC units, and pneumatic equipment), operation-related vehicles, speakers, bells, chimes, and outdoor human activity in defined limited areas.

Existing industrial land uses may not exceed a one-hour average sound level of 70 dBA for light industrial uses or 75 dBA for general industrial uses at the property line of the industrial use. Light industrial uses typically include light manufacturing, warehouse, distribution, assembly, and wholesale uses. Heavy industrial uses typically include intense manufacturing, warehouse and distribution, assembly, and wholesale industrial operations that generate higher noise levels than light industrial uses. Industrial land uses would generally operate during normal daytime business hours and would not result in sleep disturbance. However, assuming a worst-case scenario that an industrial land use generates noise levels of 75 dBA continuously over a 10-hour workday, and an ambient noise level of 65 dBA at night, operations of daytime industrial land uses would have the potential to result in a 24-hour noise level of 74 dBA CNEL at the property line. Therefore, new NSLU, commercial, and industrial land uses proposed as part of the project would have the potential to be exposed to excessive noise levels if they would be located in close proximity to existing industrial development. Existing industrial land uses are primarily located near the SR-78 and I-15, and are also located in the Downtown SPA, Transit Station Target Area, South Quince Target Area, I-15/Felicita Road Corporate Office Target Area, Imperial Oakes SPA, and ERTC North and South SPAs. The General Plan Update land use designations would accommodate multi-family residential, commercial/office, and industrial uses in the Downtown SPA, Transit Station Target Area, and South Quince Target Area; and commercial/office and industrial use in the I-15/Felicita Road Corporate Office Target Area, Imperial Oakes SPA, and ERTC North and South SPAs. Therefore, a potentially significant impact would occur.

Extractive Operations (Mining)

Five existing extractive operations are located on the eastern edge of the General Plan Update planning area near San Pasqual Valley Road and Lake Wohlford Road. These operations are located in areas designated for commercial and low density residential use under the proposed General Plan Update. The City's Noise Ordinance limits noise from extractive industries to a one-hour average noise level limit of 75 dBA at the property line of the extraction site, regardless of adjacent zoning designations. Similar to industrial land uses, extractive operations generally operate during normal business hours. Assuming a worst-case scenario that the extractive operations generate continuous noise level of 75 dBA over a 10-hour workday, and an ambient noise level of 60 dBA based on the low density residential nature of the surrounding area, extractive operations would have the potential to generate a noise level of 72 dBA CNEL at the property line, which would exceed the Noise Compatibility Standards for NSLU, commercial/office, and industrial land uses.

The General Plan Update designates the area surrounding the existing extractive operations for maximum residential densities of up to one unit per four acres. Additionally, the General Plan Update does not propose substantial new growth outside of the City boundaries, where the existing extractive sites are located. The low density land use designation in this area would allow homes to be sited at a distance from potential extraction equipment noise sources. Due to the limited number of new low density residences that would be accommodated in the existing unincorporated areas of the planning area near extractive operations, noise impacts to new residential units from existing extractive operations would not exceed the Noise Compatibility Standards.

It should be noted that the San Pasqual Valley Commercial Site, a planned commercial site identified in the General Plan Update at the southwestern corner of Cloverdale Road and Highway 78, would potentially be located in close proximity to existing extractive operations. This site would potentially be exposed to noise levels in excess of the existing 65 dBA CNEL Noise Compatibility Standard for commercial development. Therefore, a potentially significant impact would occur.

Palomar Energy Center

The Palomar Energy Center power plant is located in the ERTC North SPA. The power plant generates noise levels up to 43 dBA at 900 feet from the plant (CEC 2006). The General Plan Update designates the ERTC SPA for new commercial, office, and industrial land uses. The power plant would have the potential to exceed the 65 CNEL Noise Compatibility Standard for commercial development at distances up to 70 feet from the power plant, and exceed the 70 CNEL Noise Compatibility Standard for industrial development at distances up to 40 feet from the plant. The land adjacent to the power plant is currently vacant, including a developable site just south of the power plant site at the same grade. Therefore, new commercial, office, or industrial land uses located in close proximity to the power plant could be exposed to noise levels in excess of the Noise Compatibility Standards. A potentially significant impact would occur.

Agricultural Operations

Agricultural operations are located around the edges of the General Plan Update planning area, near San Pasqual Valley Road to the east, Harmony Grove Road to the west of the City boundary, and I-15 outside the northern and southern City boundaries. Deliveries and operation of farming equipment such as tractors are the primary agricultural noise sources. Section 17-242 of the Noise Ordinance exempts agricultural operations from the Noise Compatibility Standards in Table 4.12-5, provided that all

equipment and machinery powered by internal-combustion engines are equipped with a proper muffler and air intake silencer in good working order; and further provided that:

1. Operations do not take place between 7:00 p.m. and the 7:00 a.m. of the following day; or
2. Such operations and equipment are utilized for the preparation, planting, harvesting, protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions; or
3. Such operations and equipment are associated with agricultural pest control, provided the application is made in accordance with regulations or procedures administered by the County Department of Agriculture; or
4. Such operations and equipment are associated with the application of agricultural chemicals provided the application is made in accordance with acceptable agricultural practices or upon the recommendation of an agricultural specialist.

Agricultural operations in the City are required to comply with the provisions of the Noise Ordinance, as enforced by the Chief of Police. Additionally, limited new residential development would be accommodated in these areas under the proposed project, with residential densities between one unit per 0.5-acre and one unit per 20 acres. The low density land use designation in this area would allow homes to be sited at further distances from potential agricultural noise sources. Additionally, some agricultural operations are mobile, such as harvesting, so that a particular noise receptor is not likely to be exposed to continuous noise from operation of equipment. Due to the limited number of new homes that would be accommodated in the existing agricultural areas, new residential development accommodated by the proposed project would not be exposed to excessive noise from agricultural operations. Therefore, agricultural operations would not result in a potentially significant impact to NSLU.

Residential, Recreational and Other Land Uses

Noise generated from residential and recreational uses is generally described as nuisance noise. Nuisance noise is defined as intermittent or temporary neighborhood noise from sources such as amplified music, barking dogs, and landscape maintenance equipment that may be disturbing to other residents. Nuisance noise is difficult to control due to the variety of noise sources and intermittent nature of noise impact. Therefore, some exposure to nuisance noise will occur in residential neighborhoods. Nuisance noise impacts are more likely to occur in more densely developed areas such as the urban core, where residences would be closer together and persons would be more likely to hear a neighbor's dog or music.

Established residential neighborhoods are currently located throughout the General Plan Update planning area, including the City's downtown area and urban core. Future residential growth under the proposed project would be concentrated in the smart growth opportunity areas identified in the Land Use Element, including the Transit Station Target Area and South Quince Street Target Area. Increased residential density is also encouraged in the South Escondido Boulevard/Felicita Avenue Target Area, Centre City Parkway/Brotherton Road Target Area, East Valley Parkway Target Area, South Escondido Boulevard/Centre City Parkway Target Area, Nutmeg Street Study Area, and Downtown SPA. These areas may experience some level of nuisance noise. However, these noises are generally temporary and intermittent in nature. Additionally, the City's Noise Ordinance prevents nuisance noise from becoming excessive. Section 17-229 of the Noise Ordinance prohibits nuisance noise from exceeding the City's

noise standards at any time. Additionally, Section 17-240 establishes regulations to minimize specific nuisance noise sources, including stereo equipment and animal noise. Compliance with the Noise Ordinance would limit exposure to excessive nuisance noise. As stated in Section 17-243 of the Noise Ordinance, the Chief of Police is responsible for the investigation and enforcement of nuisance noise disturbances. The officer responsible for enforcement of the Noise Ordinance would issue an order requiring abatement of the nuisance sound source within a reasonable time period. Therefore, nuisance noise in residential neighborhoods would not result in a significant impact.

Noise sources from schools, civic uses, child care facilities, and recreational facilities include parking lot noise, children at play, athletic events, landscape maintenance, school bells, and public address systems. These land uses currently exist throughout the General Plan Update planning area. Similar to nuisance noises in residential neighborhoods, noise sources from these land uses would be intermittent and would be different from each other in kind, duration, and location, so that the overall effects would be separate and, in most cases, would not affect the same noise-sensitive receptors at the same time. Additionally, the City's Noise Ordinance includes regulations that pertain specifically to nuisance noise sources associated with these land uses, such as Section 17-237 that prohibits nuisance noise from landscape equipment. Therefore, nuisance noise generated by non-residential land uses would also be less than significant.

Federal, State, and Local Regulations and Existing Regulatory Processes

Future development under the proposed project would be required to comply with CCR Title 24, which establishes standards for interior room noise for multi-family residences. The regulations require an acoustical study to be prepared whenever a multi-family residential building or structure is proposed to be located near an existing or adopted freeway route, expressway, parkway, major street, thoroughfare, rail line, rapid transit line, or industrial noise source, and where such noise source or sources create an exterior CNEL (or Ldn) of 60 dBA or greater. Title 24 also requires that new residences be designed to limit interior noise to 45 dBA CNEL or less. Additionally, existing development would continue to be required to comply with the City's Noise Ordinance. As discussed above, this regulation establishes sound level limits to protect land uses from excessive noise, and includes regulations specific to common noise sources such as landscape equipment. All existing land uses would be subject to the sound level limits established in Section 17-229 of the Noise Ordinance, provided in Table 4.12-5, City of Escondido Exterior Sound Limit Levels, and the 75 dBA noise level limit for extractive operations. Nuisance noises would be required to comply with the noise level limits specified in the Noise Ordinance. Agricultural operations are exempted from the sound level limits in Section 17-242 of the Noise Ordinance; however, agricultural operations must still comply with regulations in the Noise Ordinance that minimize agricultural noise.

Proposed General Plan Update Policies

The Community Protection Element includes Goal 5, which is the protection of the community from excessive noise exposure. This goal is supported by Noise Policies 5.1 through 5.4, 5.7, 5.13, and 5.17 that pertain to excessive noise levels. Noise Policy 5.1 requires development to meet acceptable exterior noise level standards and use the future noise level contour map as a guide for evaluating the compatibility of new noise sensitive uses with projected noise levels. Noise Policy 5.2 applies a CNEL of 60 dB or less for single family residential uses and 65 dB or less for multi-family residential uses as goals where outdoor use is a major consideration. Noise Policies 5.3, 5.4, 5.7, 5.13, and 5.17 require noise attenuation for outdoor spaces for all development where projected incremental exterior noise levels

exceed the noise compatibility standards; require noise attenuation for new noise-sensitive uses if the projected interior noise standard of 45 dBA CNEL is exceeded; encourage use of site and building design, noise barriers, and construction methods to minimize impacts on and from new development; require limited hours of operation for parks and active recreation uses in residential areas; and require the City to periodically review the adopted Noise Ordinance to address changing conditions.

The element also includes the noise reduction strategies listed in Table 4.12-6, Proposed Noise Reduction Strategies, to limit excessive noise.

Table 4.12-6 Proposed Noise Reduction Strategies

Category	Strategies
Site Planning Responsive to Topography	a. Increase distances between noise sources and receivers b. Place non-noise-sensitive uses such as utility areas, parking lots, and maintenance facilities between the source and the receiver c. Use non-noise-sensitive structures such as garages to shield noise-sensitive areas d. Orient buildings to shield outdoor spaces from a noise source
Architecture Responsive to Noise Sensitive Spaces	a. Orient bedrooms away from noise sources b. Limit openings and penetrations on portions of buildings impacted by noise
Barriers Responsive to Reduce Noise Levels	a. Ensure that line of sight is interrupted between noise source and the receptor when constructing noise walls b. Apply noise insulation to walls, roofs, doors windows and other penetrations

Source: City 2011

In addition, the proposed Community Protection Element would establish new Noise Compatibility Guidelines, provided in Table 4.12-7, Proposed Noise Compatibility Guidelines. As shown in this table, the proposed Noise Compatibility Guidelines would allow some higher noise levels compared to the existing General Plan Noise Compatibility Guidelines (Table 4.12-4, Existing City of Escondido Noise Compatibility Guidelines). Multi-family residential land uses and other NSLU other than single family residences would be compatible with noise levels up to 65 dBA CNEL, rather than the existing guideline of 60 dBA CNEL. Commercial and office uses would be compatible with noise levels up to 70 dBA CNEL, rather than the existing guideline of 65 dBA CNEL. Industrial land uses would be compatible with noise levels up to 75 dBA CNEL, rather than the existing guideline of 70 dBA CNEL. The updated Noise Compatibility Guidelines better reflect existing conditions in the General Plan Update area and present more realistic standards for future development.

The City requires that project applicants consult the proposed guidelines for noise compatible land uses shown on Table 4.12-7, Proposed Noise Compatibility Guidelines, in order to guide the appropriateness of land uses relative to noise levels. As part of this requirement, an acoustical study showing the ability to meet state noise insulation standards is required for any development proposed in an area where the noise level exceeds the “clearly acceptable” level as determined by the City and shown on Table 4.12-7. If the proposed development includes a mix of uses, or is adjacent to a more noise-sensitive land use, then the noise level standard of the more restrictive land use category must be used. An acoustical engineer must identify measures required to reduce exterior noise levels to acceptable levels. Noise reduction strategies, including but not limited to, those contained within Table 4.12-6, Proposed Noise Reduction Strategies, are then incorporated into the proposed project to reduce noise levels. If a barrier is proposed to reduce noise levels, the acoustical engineer must identify the required location, length,

and height of the proposed noise barrier. Where installation of a noise barrier is infeasible, the acoustical engineer must identify measures to reduce interior noise levels to at least 45 dBA in compliance with Title 24, such as dual-paned windows.

Table 4.12-7 Proposed Noise Compatibility Guidelines

Land Use Category	Exterior Noise Level (CNEL) 55	60	65	70	75	80
Residential-Single family, Duplex, Mobile Home						
Residential-Multi-Family, Residential Mixed Use						
Transient Lodging, Motels, Hotels						
Schools, Libraries, Churches, Hospitals, Nursing Homes						
Auditoriums, Concert Halls, Amphitheaters						
Sports Arena, Outdoor Spectator Sports						
Playgrounds, Parks						
Golf Courses, Riding Stables, Water Recreation, Cemeteries						
Office Buildings, Business Commercial, Professional						
Industrial, Manufacturing, Utilities, Agriculture						

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

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

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

CLEARLY UNACCEPTABLE - New construction or development should generally not be undertaken.

Source: City 2011

Proposed Downtown Specific Plan Update Policies

The proposed Downtown Specific Plan Update does not include any policies related to excessive noise levels.

Proposed Escondido Climate Action Plan Reduction Measures

The proposed E-CAP does not include any reduction measures related to excessive noise levels.

Summary

Future development under the proposed project would have the potential to expose NSLU and new commercial, office, and industrial land uses to excessive noise levels from existing roadway noise and noise related to existing commercial, industrial, and extractive land uses, and the Palomar Energy Center power plant. However, compliance with existing regulations such as the Noise Ordinance, and implementation of the proposed General Plan Update goals and policies, including Noise Policies 5.1 though 5.4 and the Noise Compatibility Guidelines, would reduce impacts to below a level of significance. Therefore, impacts would be less than significant.

4.12.3.2 Issue 2: Excessive Groundborne Vibration

Guidelines for Determination of Significance

Based on Appendix G of the CEQA Guidelines, the City of Escondido Noise Ordinance and other existing City policies and regulations, the proposed project would result in a significant impact if it would result in the exposure of vibration-sensitive uses to groundborne vibration, or if new vibration-sensitive land uses would be located in the vicinity of groundborne vibration-inducing land uses such as railroads or mining operations.

The FTA thresholds are the applicable significance thresholds for groundborne vibration. The thresholds for infrequent events, defined as fewer than 30 vibration events of the same kind per day, are applicable to construction and mining operations. These thresholds are 65 VdB at vibration-sensitive land uses and 80 VdB at residences and buildings where people normally sleep. The threshold for occasional events, defined as between 30 and 70 vibration events of the same kind per day, are applicable to operation of the ~~Sprinter~~SPRINTER railroad. These thresholds are 65 VdB at vibration-sensitive land uses and 75 VdB at residences and buildings where people normally sleep. The thresholds for groundborne noise are 65 VdB for buildings where people sleep and 85 VdB during the day for sensitive land uses. The FTA damage thresholds indicate that, for buildings not extremely sensitive to vibration, a damage threshold of between 0.2 inches per second (in/sec) to 0.5 in/sec would apply depending on the type of building.

Impact Analysis

Growth under the proposed Downtown Specific Plan Update would be consistent with the growth identified for the General Plan Update. The Downtown Specific Plan Update has been prepared in conjunction with the General Plan Update and the growth projections for the Downtown SPA are included in the growth projections for the General Plan Update. The E-CAP was prepared in conjunction with, and is intended to support, the General Plan Update land use designations. It does not propose any additional or different growth. E-CAP reduction measures, such as transit oriented development, would be implemented as part of future development projects consistent with the General Plan Update. Therefore, the following analysis pertains to the General Plan Update, Downtown Specific Plan Update, and E-CAP.

This issue addresses the potential for construction that would occur as a result of the proposed project to generate excessive groundborne vibration levels. In addition, the potential for existing sources of vibration, such as railroads and extractive operations, to expose future development to excessive groundborne vibration and noise are analyzed.

Sources of groundborne vibration that currently exist in the City include construction, railroads, and extractive mining operations. Additionally, groundborne vibration from construction activities has the potential to occur as a result of new land use development accommodated by the proposed project. Typical vibration levels are shown in Table 4.12-8, Typical Levels of Groundborne Vibration. These sources are discussed further below.

Table 4.12-8 Typical Levels of Groundborne Vibration

Vibration Level		Typical Sources (50 feet from source)	Human/Structural Response
VdB[(1)]	in/sec RMS		
100	0.01	Blasting from construction projects	Threshold, minor cosmetic damage to fragile buildings
90-100	0.003-0.01	Bulldozers and other heavy tracked construction equipment	Difficulty with tasks such as reading
80-90	0.001-0.003	Commuter rail and rapid transit, upper range	Residential annoyance, infrequent events (e.g. commuter rail)
70-80	0.0003-0.001	Typical commuter rail, bus or truck over bump, typical rapid transit	Residential annoyance, frequent events (e.g. rapid transit)
60-70	0.0001-0.0003	Bus or truck, typical	Limit for vibration sensitive equipment. Approximate threshold for human perception
50	0.00003	Typical background vibration	Not detectable

(1) RMS vibration velocity level in VdB relative to 10^{-6} inches/second
Source: FTA 2006

Groundborne vibration has three potential effects. First, vibration at high enough levels can interfere with sleep. Second, vibration at relatively low levels can disturb vibration-sensitive research and manufacturing equipment, such as electron microscopes and high resolution lithographic equipment. Even normal optical microscopes will sometimes be difficult to use at vibration levels well below the human annoyance level. Third, groundborne vibration can potentially damage the foundations and exteriors of existing, older structures. Groundborne vibration that can cause this kind of damage is typically limited to impact equipment, especially pile-drivers.

Construction

Table 4.12-9, Vibration Source Levels for Construction Equipment, identifies various vibration velocity levels for typical construction equipment. As shown in this table, construction from development of land uses accommodated by the proposed project would have the potential to interfere with vibration-sensitive equipment or disturb people trying to sleep in close proximity to construction activities. Structural damage to existing buildings due to construction vibration would potentially occur if pile-driving would be required in close proximity to the building because pile-driving can produce PPV values of up to 1.5 at 25 feet.

Table 4.12-9 Vibration Source Levels for Construction Equipment

Construction Equipment	At 25 feet		At 100 feet	
	Approximate VdB	Peak Particle Velocity (in/sec)	Approximate VdB[(1)]	Peak Particle Velocity (in/sec)[(2)]
Large Bulldozer	87	0.089	69	0.011
Loaded Trucks	86	0.076	68	0.010
Jackhammer	79	0.035	61	0.004
Small Bulldozer	58	0.003	40	0
Caisson Drilling	87	0.089	69	0.011
Roller	94	0.210	76	0.026
Pile Driver (impact, upper range)	112	1.518	94	0.190
Pile Driver (sonic, upper range)	105	0.734	87	0.011

(1) Based on the formula $PPV_{equip}=PPV_{ref}*(25/D)^{1.5}$ provided by the FTA (2006)

(2) Based on the formula VdB = VdB(25 feet) – 30log(d/25) provided by the FTA (2006)

Source: FRA 2005

As discussed previously, residential land uses are currently located throughout the City and, under the proposed project, additional single family and multi-family residences would be accommodated within the planning area. Based on the information presented in Table 4.12-9, Vibration Source Levels for Construction Equipment, vibration levels from general construction activities would have the potential to exceed 80 VdB at distances up to 75 feet from construction equipment, and pile driving activities would have the potential to exceed 80 VdB at distances up to 300 feet from the source. Additionally, vibration levels could produce sleep disturbing groundborne noise levels of 40 dBA at distances up to 230 feet away from general construction activities and up to 900 feet away from pile-driving activities. However, construction under the proposed project would take place during the day as required by the Noise Ordinance. Sections 17-234, 17-238, and 17-240 of the Noise Ordinance limit operation of construction equipment to the hours of 7:00 a.m. to 6:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturdays. Grading activities on Saturday may not begin until 10:00 a.m. and must end by 5:00 p.m. Construction is prohibited on Sundays. Therefore, construction activities would not occur during nighttime hours. Potential vibration impacts to residents and tenants of other buildings used for sleep would be less than significant.

Vibration-sensitive land uses are found throughout the General Plan Update planning area, including medical facilities and industrial operations. Palomar Medical Center is currently located in the Downtown SPA between Washington and Fifth Avenues. The new Palomar Medical Center West is under construction in the ERTC North SPA. Industrial operations are currently concentrated south of SR-78 generally between the western City limits and I-15. Under the proposed project, new vibration-sensitive land uses would be developed, including medical offices, research and development, and industrial land uses. Specifically, the General Plan Update would accommodate new research and development land uses in the Transit Station Target Area, South Quince Street Target Area, I-15/Felicita Road Corporate Office Target Area, Imperial Oakes SPA, and ERTC North SPA. New industrial land uses would be accommodated outside of the study areas, but would be concentrated in the Downtown SPA, Transit Station Target Area, South Quince Street Target Area, Imperial Oakes SPA, ERTC North SPA, and ERTC South SPA.

Based on the information presented in Table 4.12-9, Vibration Source Levels for Construction Equipment, vibration levels from general construction activities would have the potential to exceed 65 VdB at distances up to 230 feet from construction equipment, and pile driving activities would have the potential to exceed 65 VdB at distances up to 900 feet from the source. Vibration levels from normal construction activities would not exceed groundborne noise levels of 60 dBA more than 30 feet from the construction equipment and would not result in significant offsite impacts. However, pile-driving activities would have the potential to exceed groundborne noise levels of 60 dBA at distances up to 200 feet from the source. Construction activities would occur throughout the General Plan Update area, and would be concentrated in the study areas. Additionally, the proposed project encourages compact development and redevelopment of underutilized land in close proximity to existing development, particularly in the study areas. Therefore, impacts to vibration-sensitive land uses during construction would be potentially significant.

Historic buildings may also be susceptible to damage from excessive vibration impacts resulting from construction activities such as pile driving. Construction activities would occur throughout the General Plan Update planning area, and would be concentrated in the study areas, including the Downtown SPA and South Escondido Boulevard/Felicita Road Target Area, which include the historic downtown and Old Escondido Historic District. Therefore, impacts to historic structures susceptible to damage from vibration would be potentially significant during construction activities.

Railroads

As discussed above, two railroads are located within the General Plan Update planning area, the NCTD ~~Sprinter~~SPRINTER commuter rail line and the AT&SF freight line. These rail lines share the same railroad track, shown in Figure 4.12-1, Existing Noise Contours. The freight railroad operates one round trip daily, three days a week. Due to the infrequency of operations that occur on the freight rail line, freight operations would not result in excessive exposure to groundborne vibration or noise. Impacts would be less than significant. However, the ~~Sprinter~~SPRINTER runs every 30 minutes in each direction Monday through Friday, from approximately 4:00 a.m. to 9:00 p.m. Saturday, Sunday, and holiday trains operate every 30 minutes between 10:00 a.m. and 6:00 p.m. and hourly before 10:00 a.m. and after 6:00 p.m. According to the FTA, typical vibration levels for commuter rail operations can range from 75 to 85 VdB at a distance of 50 feet from the source. The FTA recommends that vibration assessment be prepared for vibration-sensitive equipment proposed within 450 feet of a light-rail railroad right-of-way such as the ~~Sprinter~~SPRINTER line, and places where people sleep proposed within 150 feet from light-rail railroad rights-of-way. For the purposes of this analysis, these distances are considered conservative screening distances for potential vibration impacts from the ~~Sprinter~~SPRINTER.

The ~~Sprinter~~SPRINTER rail line traverses the City from west to east, generally along Mission Avenue west of I-15, portions of Washington Avenue, and along Santa Fe Avenue east of I-15. The eastern end of the ~~Sprinter~~SPRINTER line is the Escondido Transit Center, located at 796 West Valley Parkway. Another ~~Sprinter~~SPRINTER station is located at the southwestern corner of Mission Road and Auto Park Way (Nordahl Station). The areas along the ~~Sprinter~~SPRINTER line include portions of the ERTC North SPA, Transit Station Target Area, and Downtown SPA, as well as areas outside of the study areas designated for industrial land use. The ERTC North SPA would accommodate new industrial and office land uses that would have the potential to utilize vibration-sensitive equipment. The Transit Station Target Area and Downtown SPA both envision new multi-family residences in close proximity to the ~~Sprinter~~SPRINTER station, as well and new office and industrial uses. New industrial development, which could include vibration-sensitive equipment, depending on the proposed use, would potentially

be accommodated outside of the study areas, including the area along the ~~Sprinter~~SPRINTER line. Therefore, the proposed project would have the potential to locate new vibration-sensitive land uses and places where people sleep within the FTA's vibration impact screening distances for the ~~Sprinter~~SPRINTER railroad. A potentially significant impact would occur.

Groundborne vibration levels of 85 VdB can result in noise levels up to 60 dBA, which can result in a disturbance to quiet daytime activities in vibration-sensitive land uses, such as schools. As stated above, ~~Sprinter~~SPRINTER operations can generate vibration levels of 85 VdB at 50 feet from the source. A distance of 50 feet from the railroad track would generally be within the railroad right-of-way. Therefore, new daytime NSLU would not be located within 50 feet of the ~~Sprinter~~SPRINTER rail line and impacts related to groundborne vibration would be less than significant. Vibration levels of 85 VdB could exceed 65 VdB at a distance up to 230 feet away. Vibration levels of 65 VdB can produce groundborne vibration levels up to 40 dBA and result in sleep disturbance. As discussed above, the Transit Station Target Area and Downtown SPA both envision accommodation of new multi-family residences in close proximity to the ~~Sprinter~~SPRINTER station. Therefore, groundborne noise impacts related to sleep disturbance would be potentially significant.

Extraction (Mining) Operations

Mining and extraction operations often include blasting or other activities that result in groundborne vibration or noise impacts. Equipment used for extraction operations would have similar vibration levels associated with blasting and use heavy equipment as those used for construction projects, identified in Table 4.12-9, Vibration Source Levels for Construction Equipment. Therefore, vibration levels from mining equipment could potentially range from 61 to 76 VdB and 0 to 0.026 inches/second at distances up to 100 feet from the source. Blasting would result in similar vibration impacts compared to pile driving activities (FTA 2006). Therefore, blasting would have the potential to generate vibration levels of 94 VdB and 0.19 in/second at distances up to 100 feet from the source. A minimum distance of 100 feet from heavy equipment is a conservative assumption due to buffers typically placed around active extractive operations. Therefore, extraction operations would not result in impacts related to building damage, but could disturb vibration sensitive land uses at distances up to 230 feet from heavy equipment and up to 900 feet from blasting. Extractive operations would generally operate during the day; therefore, operations would not result in sleep disturbance. However, blasting activities would have the potential to result in groundborne noise levels of 65 VdB at distances up to 230 feet from the source, similar to pile driving, which would disturb daytime NSLU.

As discussed above, five existing extractive operations are located on the eastern edge of the General Plan Update planning boundary near San Pasqual Valley Road and Lake Wohlford Road. These operations are located in areas designated for commercial and low density residential use. As discussed above, extractive operations would not result in sleep disturbance to residences. The San Pasqual Valley Commercial Site, a planned commercial site identified in the General Plan Update area, located at the southwestern corner of Cloverdale Road and Highway 78, would potentially be located near the existing extraction operations. However, typical commercial developments are not vibration or noise sensitive. Therefore, impacts from groundborne vibration and noise related to existing extraction operations would be less than significant.

Federal, State, and Local Regulations and Existing Regulatory Processes

Sections 17-234, 17-238, and 17-240 of the Noise Ordinance limit operation of construction equipment to the hours of 7:00 a.m. to 6:00 p.m. Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturdays. Grading activities on Saturday may not begin until 10:00 a.m. and must end by 5:00 p.m. Compliance with the Noise Ordinance would also restrict construction groundborne vibration and noise impacts from disturbing sleep.

Proposed General Plan Update Policies

The General Plan Update Community Protection Element includes Noise Policy 5.5, which requires construction projects and new development to ensure acceptable vibration levels at nearby vibration-sensitive uses based on FTA criteria. The Community Protection Element establishes the criteria shown in Table 4.12-10, General Plan Update Groundborne Vibration Impact Criteria, as the acceptable vibration levels for the General Plan Update planning area. These criteria are consistent with the vibration criteria established by the FTA in the Transit Noise Impact and Vibration Assessment (2006) and are consistent with the FTA thresholds used for this impact analysis.

Table 4.12-10 General Plan Update Groundborne Vibration Impact Criteria

Land Use Category	Impact Levels (Vdb) Frequent Events[1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where vibration would interfere with interior operations	65[4]	65[4]	65[4]
Category 2: Residences and buildings where people normally sleep	72	75	80
Category 3: Institutional land uses with primarily daytime uses	75	78	83

Vibration levels are measured in or near the vibration-sensitive use.

(1) "Frequent Events" is defined as more than 70 vibration events of the same source per day.

(2) "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day.

(3) "Infrequent Events" is defined as fewer than 30 vibration events of the same source per day.

(4) This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels.

Source: FTA 2006

Proposed Downtown Specific Plan Update Policies

The proposed Downtown Specific Plan Update does not include any policies related to groundborne vibration and noise.

Proposed Escondido Climate Action Plan Reduction Measures

The proposed E-CAP does not include any reduction measures related to groundborne vibration and noise.

Summary

Construction of new land uses under the proposed project and placement of new development in close proximity to the ~~Sprinter~~SPRINTER rail line would have the potential to result in impacts associated with

excessive groundborne vibration. The proposed General Plan Update Policy 5.5 requires compliance with the FTA vibration criteria for construction that would occur under the General Plan Update, Specific Plan Update and E-CAP. Compliance with this policy would reduce potential groundborne vibration impacts related to future development, however, additional mitigation is necessary to ensure proper setbacks are established. ~~to a less than significant level. However, the~~ The proposed project would also ~~still~~ result in a potentially significant impact related to groundborne noise during construction, potential damage to buildings that may be susceptible to vibration damage from construction equipment, and placement of land uses in close proximity to vibration impacts from the ~~Sprinter~~SPRINTER.

4.12.3.3 Issue 3: Permanent Increase in Ambient Noise Levels

Guidelines for Determination of Significance

Based on Appendix G of the CEQA Guidelines, the City of Escondido Noise Ordinance and other existing City policies and regulations, the proposed project would result in a significant impact if it would result in a substantial permanent increase in ambient noise which would exceed the sound level limits specified in Escondido Noise Ordinance at the boundary line of the property on which the noise is produced or at any location on a property that is receiving the noise. A significant impact would occur when short or long term noise sources result in a 5 dBA level or more increase in ambient noise. Where ambient noise levels already exceed the noise standards specified in the General Plan, a perceptible increase in noise level of 3 dBA CNEL or greater would be considered significant.

Impact Analysis

Growth under the proposed Downtown Specific Plan Update would be consistent with the growth identified for the General Plan Update. The Downtown Specific Plan Update has been prepared in conjunction with the General Plan Update and the growth projections for the Downtown SPA are included in the growth projections for the General Plan Update. The E-CAP was prepared in conjunction with, and is intended to support, the General Plan Update land use designations. It does not propose any additional or different growth. E-CAP reduction measures, such as transit oriented development, would be implemented as part of future development projects consistent with the General Plan Update. Therefore, the following analysis pertains to the General Plan Update, Downtown Specific Plan Update and E-CAP.

This issue addresses the potential for the proposed project to result in new noise sources. Future development and redevelopment consistent with the proposed project would have the potential to substantially increase ambient noise levels above existing conditions as a result of increases in roadway noise and new operational noise sources.

Roadways

Roadway systems are the most predominant source of noise exposure within the proposed project area. Development tends to occur in proximity to roadways. Additionally, roadways are generally constructed near the population centers that they serve. Future noise contours for major transportation routes within the General Plan Update planning area have been generated for the horizon year (2035) for the roadways included in the proposed Mobility and Infrastructure Element that would have an average number of daily trips over 5,000 at the 2035 planning horizon. The contours are provided in Figure 4.12-

2, Future (2035) Noise Contours. As discussed under 4.12.3.1, Issue 1: Excessive Noise Levels, the actual noise level in specific locations has the potential to be lower, or in some cases higher, than the levels shown on the noise contour map due to attenuation such as intervening structures and the fact that noise levels fluctuate within a 24-hour period. However, the noise contours represent conservative conditions for the purpose of identifying the potential noise impacts of the proposed project.

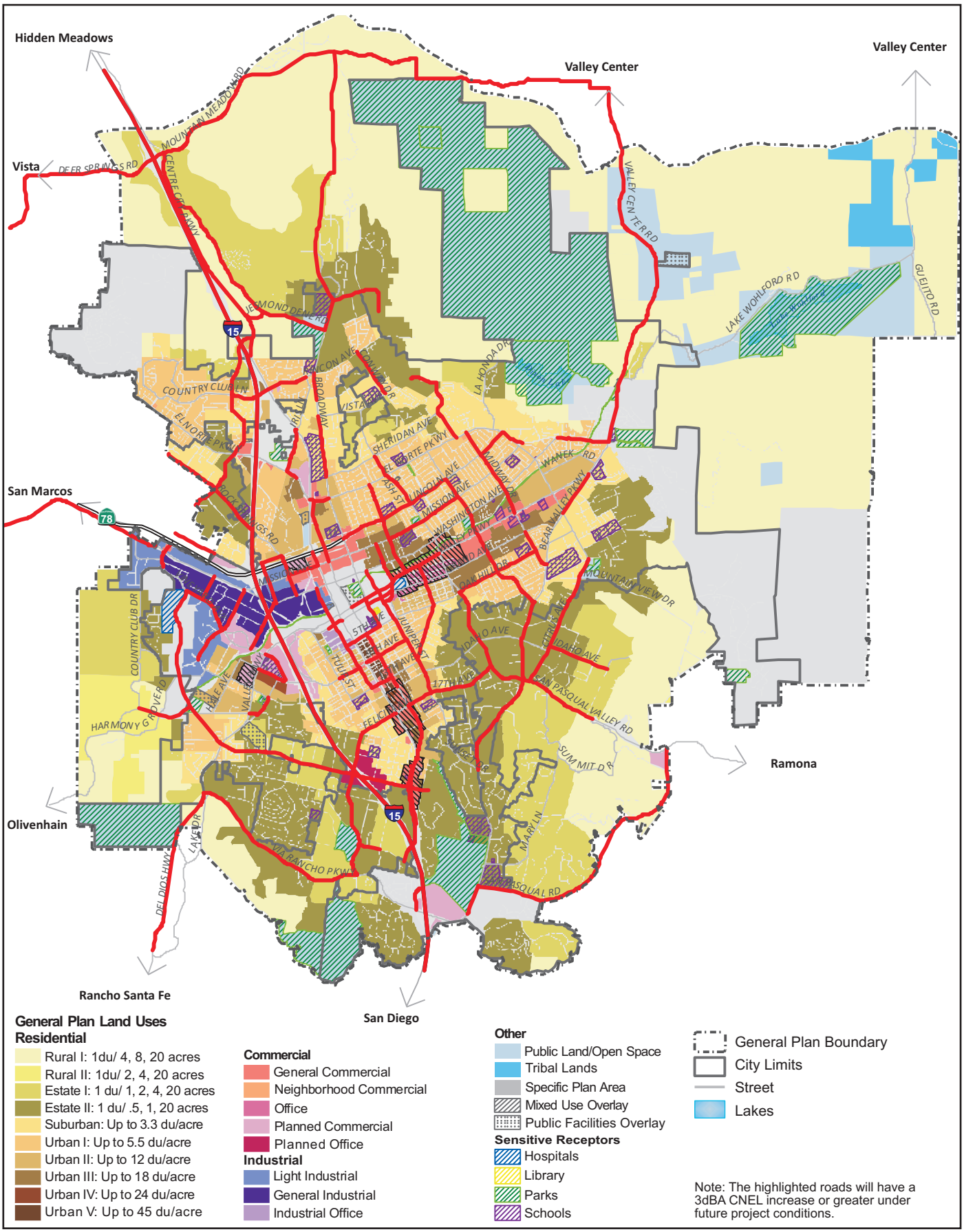
Implementation of the proposed project would result in an increase in vehicular traffic throughout the proposed project area. Figure 4.12-3, Significantly Impacted Roadway Segments, highlights the roadways that would experience a significant increase in noise levels as a result of the increase in traffic. In general, roadways that are projected to carry double or more traffic volume as compared to existing conditions will reflect an increase of at least 3 dBA. Also, roadways that are proposed to be widened in the future may also carry a higher percentage of heavy-duty trucks, which results in higher noise levels. Roadway noise model assumptions for future conditions, as well as the complete list of roadways that are projected to have significant noise increases are provided in the Appendix E, Noise Technical Report, of this EIR. As stated above, an increase in the noise level of 5 dBA CNEL along a roadway is considered significant if the roadway does not currently generate a noise level of 60 dBA CNEL or greater at the nearest receptor. An increase in 3 dBA CNEL is considered significant if the noise level generated by the roadway at the nearest receptor is 60 dBA CNEL or higher under existing conditions.

The roadways that would experience the greatest increase in noise level at the 2035 planning horizon of the proposed project are:

- Citracado Parkway from Auto Park Way to Andreasen Drive (+9 dBA CNEL to 74 dBA CNEL)
- Citracado Parkway from Avenida del Diablo to Valley Parkway (+9 dBA CNEL to 76 dBA CNEL)
- Citracado Parkway from Bernardo Avenue to the I-15 SB Off-Ramps (+9 dBA CNEL to 74 dBA CNEL)
- Citracado Parkway from Valley Parkway to Bernardo Avenue (+17 dBA CNEL to 72 dBA CNEL)
- Enterprise Street from Mission Road to Auto Park Way (+9 dBA CNEL to 72 dBA CNEL)
- Mountain Meadow Road from Champagne Road to Broadway (+9 dBA CNEL to 76 dBA CNEL)

As discussed under Section 4.12.3.1, Issue 1: Excessive Noise Levels, the Noise Compatibility Standards are 60 dBA CNEL for residences and other NSLU, 65 dBA CNEL for office and commercial land uses, and 70 dBA CNEL for industrial land uses.

As demonstrated by these roadways and shown in Figures 4.12-2 and 4.12-3, the increase in vehicular noise as a result of the proposed project would have the potential to expose existing and future development under the proposed project to a substantial permanent increase in ambient noise level and noise levels in excess of the Noise Compatibility Standards. As shown in Figure 4.12-2, Future (2035) Noise Contours, the 60 dBA CNEL noise contour would encompass greater areas throughout the entire General Plan Update planning area compared to existing conditions. Therefore, implementation of the proposed project would result in substantial permanent increases in noise levels on roadways throughout the proposed project area and future noise levels would have the potential to exceed the City's Noise Compatibility Standards for existing and future land uses. A potentially significant impact would occur.



General Plan Land Uses

Residential
- Rural I: 1du/ 4, 8, 20 acres
- Rural II: 1du/ 2, 4, 20 acres
- Estate I: 1 du/ 1, 2, 4, 20 acres
- Estate II: 1 du/ .5, 1, 20 acres
- Suburban: Up to 3.3 du/acre
- Urban I: Up to 5.5 du/acre
- Urban II: Up to 12 du/acre
- Urban III: Up to 18 du/acre
- Urban IV: Up to 24 du/acre
- Urban V: Up to 45 du/acre

Commercial
- General Commercial
- Neighborhood Commercial
- Office
- Planned Commercial
- Planned Office

Industrial
- Light Industrial
- General Industrial
- Industrial Office

Other
- Public Land/Open Space
- Tribal Lands
- Specific Plan Area
- Mixed Use Overlay
- Public Facilities Overlay

Sensitive Receptors
- Hospitals
- Library
- Parks
- Schools

- General Plan Boundary
- City Limits
- Street
- Lakes

Note: The highlighted roads will have a 3dBA CNEL increase or greater under future project conditions.

Source: City of Escondido 2011, LLG 2011

ATKINS

SIGNIFICANTLY IMPACTED ROADWAY SEGMENTS
FIGURE 4.12-3

The proposed General Plan Update roadway network represents anticipated 2035 conditions in the proposed project with implementation of the General Plan Mobility and Infrastructure Element. The timing of proposed new roadways and roadway extensions is unknown at this time and would depend on the need for the roadways to ease traffic congestion as development occurs. Noise contours have been generated from estimated traffic levels along these roadways; however, the contours would only apply if the roadway were constructed. New roadways constructed under the proposed project would result in noise levels that exceed 60 dBA CNEL at 50 feet from the roadway centerline. These roadways include Lariat Drive from Country Club Lane to Citracado Parkway (67-68 dBA CNEL), and Mountain Meadow Road from Broadway to Valley Center Road (69 dBA CNEL). These noise levels would exceed the Noise Compatibility Standards for NSLU and commercial/office development. Therefore, the proposed project would have the potential to result in new sources of roadway noise that would result in a substantial permanent increase in noise levels.

Operational Noise Sources

Future growth under the proposed project would be focused in the existing downtown, urban core, employment and mixed use areas, which are identified as the General Plan Update study areas. Therefore, new sources of noise as a result of implementation of the proposed project would be concentrated in these areas. Established suburban areas that surround the downtown area are not proposed for substantial intensification and noise levels in these areas are not anticipated to change significantly. Therefore, this analysis focuses on development proposed in the General Plan Update study areas, with a general discussion of potential noise impacts outside the study areas. The major categories of land use types in the planning area that have the potential to generate operational noise include commercial/office, industrial, mixed use, residential, and parks/open space uses, as discussed below.

The General Plan Update area also encompasses some tribal land; however, the City does not have land use jurisdiction in these areas and does not propose any land use development for these lands. Additionally, several specific plans have been adopted and implemented in the City. The proposed project does not propose any changes to these adopted specific plans, with the exception of the Downtown Specific Plan Update. Therefore, implementation of the proposed project would not result in any new noise sources on tribal land or the SPAs with adopted specific plans, with the exception of the Downtown SPA.

Commercial and Office Development

Commercial and office noise sources would be similar to existing conditions with implementation of the proposed project because these land uses currently exist within the City's urban core; however, development intensity would increase with implementation of the proposed project. The General Plan Update specifically encourages new commercial and office development in several study areas that are currently developed with residences and other NSLU. These areas are the I-15/Felicita Road Target Area, ERTC North and South SPAs, Imperial Oakes SPA, Transit Station Target Area, Westfield Shoppingtown Target Area, Highway 78/Broadway Target Area, South Quince Street Target Area, Downtown SPA, South Escondido Boulevard/Felicita Road Target Area, South Escondido Boulevard/ Centre City Parkway Target Area, Centre City Parkway/Brotherton Road Target Area, and the East Valley Parkway Target Area. Outside of the study areas, new commercial and office land uses would be accommodated near existing NSLU near I-15 at Auto Park Way/Valley Parkway and the San Pasqual Valley Road and Corporate Drive planned commercial sites.

As described under Section 4.12.3.1, Issue 1: Excessive Noise Levels, commercial and office uses have the potential to generate operational noise from stationary equipment, such as HVAC systems, as well as mobile equipment or operations, such as truck deliveries. HVAC systems, if unshielded, have the potential to emit continuous noise levels of up to 60 dBA CNEL at a distance of 200 feet from the source. Areas zoned for commercial and office uses are subject to an hourly noise level limit of 60 dBA during the day, and 55 dBA at night as stated in the City's Noise Ordinance. The Noise Ordinance also includes general noise regulations that limit nuisance noise from commercial and office activities. Section 17-240 prohibits loud or excessive noise from loading and unloading vehicles and opening or destroying boxes. Commercial and office land uses would also generate noise sources from parking lots, including car alarms, door slams, radios, and tire squeals. These sources typically range from about 30 dBA to 66 dBA at a distance of 100 feet (City of Malibu 2008). Parking lot noise is generally short-term and intermittent and, similar to nuisance noises in residential neighborhoods, noise sources from the parking lot would be different from each other in kind, duration, and location, so that the overall effect would be separate and, in most cases, would not affect the same noise-sensitive receptors at the same time. Therefore, noise generated from parking lots would not be likely to exceed the hourly noise level limit at the property line of a commercial or office use. Additionally, if commercial or office land uses are located adjacent to existing NSLU or within an area zoned for residential use, they would subject to the lower hourly noise level limits for residential properties: 50 dBA daytime/45 dBA nighttime for residential zones and 55 dBA daytime/50 dBA nighttime for multi-family residential zones. Therefore, with required compliance with the City's Noise Ordinance, impacts would be less than significant.

Industrial Land Uses

The General Plan Update would accommodate new industrial development in several areas that currently include residential development and other NSLU. These areas are the Downtown SPA, Transit Station Target Area, South Quince Target Area, ERTC South SPA, Imperial Oakes SPA, and an area near Montiel Road. As described under Section 4.12.3.1, Issue 1: Excessive Noise Levels, industrial land uses would have the potential to generate hourly noise levels up to 75 dBA at the property line of heavy industrial uses and 70 dBA at the property line of light industrial uses with compliance with the City's Noise Ordinance. However, areas designated for heavy industrial land uses under the General Plan Update are surrounded by light industrial, open space, or commercial land use designations in order to provide a transition from noisier heavy industrial operations to NSLU. Additionally, if new industrial development would be located adjacent to existing NSLU or an area zoned for commercial or residential use, it would be required to comply with the stricter hourly noise level limits for these land uses at the property line. Some residential areas are proposed to be phased out as part of General Plan Update implementation, such as those located in the Imperial Oakes SPA. However, until redevelopment occurs, new industrial land uses would be required to comply with the residential hourly noise level limits if located adjacent to these uses. Therefore, compliance with the City's Noise Ordinance would reduce potential impacts to a less than significant level.

Mixed Use Development

The General Plan Update includes mixed use development in four areas within the General Plan Update planning area: Downtown SPA, Escondido Boulevard at Felicita Avenue, Centre City Parkway at Brotherton Avenue, and East Valley Parkway at Ash Street. Mixed use development would include multi-family residential development in close proximity to commercial or office development. As discussed above, commercial development adjacent to or within the same property as multi-family residences would be required to comply with the stricter hourly noise level limit for multi-family

residential use. Therefore, with required compliance with the Noise Ordinance, impacts would be less than significant.

Residential, Recreational and Other Land Uses

Similar to the discussion of existing residential, recreational, and other land uses discussed under Section 4.12.3.1, Issue 1: Excessive Noise Levels, development of these land uses consistent with the proposed project would result in nuisance noise. Noise sources from these land uses would be intermittent and would be different from each other in kind, duration, and location, so that the overall effect would be separate and in most cases, would not affect the same noise-sensitive receptors at the same time. Additionally, the Noise Ordinance includes regulations that pertain specifically to nuisance noise sources associated with these land uses, such as Section 17-237 that prohibits nuisance noise from landscape equipment. Therefore, compliance with the City's Noise Ordinance would reduce nuisance noise impacts to a less than significant level.

Federal, State, and Local Regulations and Existing Regulatory Processes

Future development under the proposed project would be required to comply with City's Noise Ordinance sound level limits, listed in Table 4.12-5, City of Escondido Exterior Sound Limit Levels. In addition, future projects under the proposed project would be required to comply with the Noise Ordinance regulations that apply to specific noise sources, such as parking lot sweepers and landscape equipment.

Proposed General Plan Update Policies

In addition to the policies listed in Section 4.12.3.1, Issue 1: Excessive Noise Levels, the Community Protection Element includes Noise Policy 5.6, which requires the preparation of noise studies, as deemed necessary by the City's Planning Department, to analyze potential noise impacts associated with new development. Noise Policy 5.8 requires that mixed use and multi-family residential developments demonstrate that the design of the structure will adequately isolate noise between adjacent uses. Noise Policy 5.9 requires new mixed use developments to locate loading areas, parking lots, driveways, trash enclosures, mechanical equipment, and other noise sources away from the residential portion of the development. Noise Policy 5.11 requires the City to limit direct access from individual properties along major roads and prime arterials in residential areas. Noise Policy 5.12 requires the City to limit "through-truck-traffic" to designated routes to minimize noise impacts to residential neighborhoods and other noise-sensitive uses.

The Community Protection Element also includes new exterior incremental environmental noise impact standards for NSLU, shown in Table 4.12-11, Proposed Incremental Noise Impact Standards. With implementation of these standards, the allowable increase in noise levels would decrease as ambient noise levels increase. Additionally, the new standards include separate allowable noise increases for uses that are more noise-sensitive during the day (peak hour) versus at night where people normally sleep (24-hour).

Table 4.12-11 Proposed Incremental Noise Impact Standards

Residences and Buildings Where People Normally Sleep[1]		Institutional Land Uses with Primarily Daytime and Evening Uses[2]	
Existing L_{dn}	Allowable Noise Increment	Existing Peak Hour L_{eq}	Allowable Noise Increment
45	8	45	12
50	5	50	9
55	3	55	6
60	2	60	5
65	1	65	3
70	1	70	3
75	0	75	1
80	0	80	0

Noise levels are measured at the property line of the noise-sensitive use.

(a) This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.

(b) This category includes schools, libraries, theaters, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material.

Source: FTA 2006

As shown in Table 4.12-11, Proposed Incremental Noise Impact Standards, the 3 dBA CNEL increase in noise level currently used as the standard for the City would only apply to uses where the existing ambient 24-hour noise levels do not exceed 60 dBA CNEL. Beyond 60 dBA CNEL, the allowable noise threshold decreases as the ambient noise level increases, to minimize cumulative noise exposure for receptors already subject to noise levels that exceed the compatibility standards. Use of the proposed standards would result in a greater number of roadway segments resulting in significant permanent traffic-related noise increases compared to the roadway segments shown in Figure 4.12-3, Significantly Impacted Roadway Segments. Therefore, additional significant impacts related to roadway noise would occur as a result of implementation of the General Plan Update Community Protection Element.

For land uses with primarily daytime and evening uses, a 3 dBA increase would be permitted during the peak hour for areas where the existing peak hour noise level does not exceed 75 dBA Leq. This allows greater flexibility for development of land uses that would not affect places where people normally sleep. However, these uses would still be required to comply with the exterior one-hour standard in the Noise Ordinance for the applicable zone.

Proposed Downtown Specific Plan Update Policies

The proposed Downtown Specific Plan Update does not include any policies related to permanent increases in ambient noise.

Proposed Escondido Climate Action Plan Reduction Measures

The proposed E-CAP does not include any reduction measures related to permanent increases in ambient noise.

Summary

The increase in traffic on existing roadways and traffic on new roadways that would occur at the 2035 planning horizon of the proposed project would result in potentially significant permanent increases in ambient noise levels. Additionally, new operational noise sources would have the potential to result in substantially permanent increases in noise levels. However, implementation of proposed General Plan Update Noise Policy 5.6 requires technical reports to be prepared for future developments that would have the potential to substantially increase ambient noise levels. The purpose of the report is to ensure that adequate sound attenuation from these noise sources would be provided. Additionally, Noise Policies 5.8 and 5.9 include requirements specifically for mixed use development that would reduce noise impacts from these developments, and Noise Policies 5.11 and 5.12 would reduce noise levels from traffic noise. Future development would be subject to the revised noise standards provided above in Table 4.12-11, Proposed Incremental Noise Impact Standards. Future development would also be required to comply with the provisions of the City's Noise Ordinance. Compliance with the General Plan Update standards and policies and the Noise Ordinance would reduce impacts related to permanent increases in ambient noise to a less than significant level.

4.12.3.4 Issue 4: Temporary Increase in Ambient Noise Level

Guidelines for Determination of Significance

Based on Appendix G of the CEQA Guidelines and existing City policies and regulations, the proposed project would result in a significant impact if it would result in a substantial temporary or periodic increase in ambient noise levels in the General Plan Update area or vicinity above levels existing without the proposed project.

Impact Analysis

Growth under the proposed Downtown Specific Plan Update would be consistent with the growth identified for the General Plan Update. The Downtown Specific Plan Update has been prepared in conjunction with the General Plan Update and the growth projections for the Downtown SPA are included in the growth projections for the General Plan Update. The E-CAP was prepared in conjunction with, and is intended to support, the General Plan Update land use designations. It does not propose any additional or different growth. E-CAP reduction measures, such as transit oriented development, would be implemented as part of future development projects consistent with the General Plan Update. Therefore, the following analysis pertains to the General Plan Update, Downtown Specific Plan Update, and E-CAP.

The construction of future land uses and infrastructure consistent with the proposed project would have the potential to result in noise from construction-related activities including, but not limited to, site grading, truck/construction equipment movement, engine noise, rock excavation, rock crushing and blasting. Typical construction equipment noise levels are provided in Table 4.12-12, Noise Levels of Typical Construction Equipment.

Table 4.12-12 Noise Levels of Typical Construction Equipment

Construction Equipment	Measured Noise Levels in dBA L_{eq} at 50 feet[(1)]
Front Loader	79
Dozer	82
Pickup Trucks	75
Cranes	81
Chainsaws	84
Pneumatic Impact Equipment	85
Jackhammers	89
Pumps	81
Generators	81
Air Compressors	78
Concrete Mixer Truck	79
Concrete Pump Truck	81
Back Hoe	78
Impact Pile Driving	101
Scraper	84
Paver	77

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

Source: RCNM 2006

Sections 17-234, 17-238, and 17-240 of the Noise Ordinance limit operation of construction equipment to the hours of 7:00 am to 6:00 p.m. Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturdays. Grading activities on Saturday may not begin until 10:00 a.m. and must also end by 5:00 p.m. Therefore, construction activities would not occur during nighttime hours and would not disturb sleep. Section 17-234 of the City's Noise Ordinance prohibits construction noise from exceeding a one-hour average sound level limit of 75 dBA at any time at the site boundary. Noise levels associated with the operation of heavy construction equipment typically range from about 65 to 89 decibels at 50 feet from the source (RCNM 2006). Assuming a worst case scenario of 89 dBA, construction noise would have the potential to exceed 75 dBA at distances up to 250 feet from the construction site. Pile-driving activities would have the potential to generate peak noise levels of up to 75 dBA at a distance of approximately 1,000 feet from the source.

As described in greater detail in Chapter 3, Project Description, the most intense development under the proposed project would be accommodated in the study areas in the urban core of the City. Therefore, the study areas are more likely to be affected by temporary increases in ambient noise from construction as a result of land use development consistent with the proposed project. Additionally, the proposed project encourages compact development and redevelopment of underutilized land in close proximity to existing development, particularly in the study areas. To a lesser degree, land use development would be allowed outside of the study areas, which would also have the potential to experience construction noise impacts. New or expanded land use development would require the construction of infrastructure that would also have the potential to result in substantial construction

noise. Therefore, construction under the proposed project would have the potential to result in a substantial temporary or periodic increase in ambient noise levels.

Federal, State, and Local Regulations and Existing Regulatory Processes

Construction of future development under the proposed project would be required to comply with the Noise Ordinance, as described above. This ordinance limits the time of day construction operations may occur and requires that the average sound level for a one-hour period not exceed 75 dBA.

Proposed General Plan Update Policies

The General Plan Update Community Protection Element includes Noise Policy 5.7, which encourages use of site and building design, noise barriers, and construction methods to minimize impacts on and from new development.

Proposed Downtown Specific Plan Update Policies

The proposed Downtown Specific Plan Update does not include any policies related to temporary increases in ambient noise.

Proposed Escondido Climate Action Plan Reduction Measures

The proposed E-CAP does not include any reduction measures related to temporary increases in ambient noise.

Summary

Future development under the proposed project would have the potential to result in temporary increases in ambient noise levels due to construction of new land uses and infrastructure. However, existing City policies and the proposed General Plan Update goals and policies would minimize temporary increases to ambient noise. Future construction activities would be required to implement construction measures to meet the noise level limit established in the City's Noise Ordinance, such a noise barriers or construction methods as recommended in Noise Policy 5.7. The Noise Ordinance also limits the hours of construction so that construction activities would not result in sleep disturbance. Therefore, compliance with the Noise Ordinance would reduce the proposed project's impact to a less than significant level.

4.12.3.5 Issue 5: Excessive Noise Exposure from Airports

Guidelines for Determination of Significance

Based on Appendix G of the CEQA Guidelines and existing City policies and regulations, the proposed project would result in a significant impact if it would expose people residing or working in the General Plan Update area to excessive noise levels from a nearby public airport or private airstrip. A noise level from the airport or airstrip would be considered excessive if it would exceed the City's Noise Compatibility Standard for the proposed land use.

Impact Analysis

Growth under the proposed Downtown Specific Plan Update would be consistent with the growth identified for the General Plan Update. The Downtown SPA has been prepared in conjunction with the General Plan Update and the growth projections for the Downtown SPA are included in the growth projections for the General Plan Update. The E-CAP was prepared in conjunction with, and is intended to support, the General Plan Update land use designations. It does not propose any additional or different growth. E-CAP reduction measures, such as transit oriented development, would be implemented as part of future development projects consistent with the General Plan Update. Therefore, the following analysis pertains to the General Plan Update, Downtown Specific Plan Update, and E-CAP.

This issue addresses the potential for future land uses accommodated under the proposed project to be exposed to excessive noise levels from aircraft noise. The proposed project does not propose any new airports or airstrips; therefore, no new sources of aircraft noise would result from implementation of the proposed project. Impacts to future lands uses as a result of the public airports and private airstrips within and near the General Plan Update planning area are discussed below.

As described in Section 4.12.1.2, Ambient Noise Setting, two public airports are located in the proximity of the General Plan Update area: McClellan-Palomar Airport and Ramona Airport. Additionally, the area is subject to flyovers from MCAS Miramar. However, the General Plan Update planning area is outside the 60 dBA CNEL for these airports. Therefore, the General Plan Update area is not currently subject to excessive noise levels from these airports. The proposed project does not accommodate any land uses that would increase operations at these airports. Any project located within Review Area 2 of McClellan-Palomar Airport or Ramona Airport would be subject to discretionary review by the San Diego Airport Land Use Commission to ensure that that project would not interfere with flights to and from the airport and result in a change in air traffic. Therefore, implementation of the proposed project would not result in any change in noise levels from the airports. Future land uses developed under the proposed project would not be located within the 60 dBA CNEL noise contour of any public airport. Therefore, although the General Plan Update area would be subject to overflights and periodic aviation noise, residents and workers would not be exposed to excessive noise levels from a public airport. Impacts related to noise from public use airports would be less than significant.

A private-use airport and heliport are located within the General Plan Update area (the helipad at Palomar Medical Center and Lake Wohlford Resort airstrip), and another private use airport is located in the proximity of the General Plan Update area. Air ambulances transport unscheduled emergency patient deliveries via helicopter to the Palomar Medical Center. Helicopter flights currently average 23 round-trips per month (PPH 2005). Under the proposed project the existing Palomar Medical Center would be redeveloped with education and educational support land uses. Therefore, flight operations at the existing hospital would cease under the General Plan Update. Palomar Medical Center West is under construction in the ERTC North SPA and would eventually replace the medical uses at the existing Palomar Medical Center. Palomar Medical Center West would include a helicopter pad with similar operations as the existing Palomar Medical Center (PPH 2005). The land uses accommodated by the proposed project would incrementally increase the number of helicopter flights to serve the anticipated population in the community and region served by the hospital. However, the Palomar Medical Center West project would increase the hospital capacity compared to the existing medical center in order to meet future demand.

A noise technical report prepared for the Palomar Medical Center West (PPH 2005) estimated helicopter noise using a conservative assumption that 50 percent of flights would occur during the evening and night. Currently, approximately 65 percent of flights occur during daytime hours (Pacific Noise Control 2005). Based on this estimate, the noise level from helicopter flights would not exceed 60 dBA CNEL more than 50 feet from the helipad. This is consistent with the findings of the existing General Plan, which determined that the 60 dBA CNEL noise contour for the helipad is within the hospital campus (City 1990). The increase in population accommodated by the General Plan Update would potentially result in an increase in heliport use; however, the noise technical report prepared for Palomar Medical Center West was conservative and assumed a larger percentage of flights would occur at night compared to existing conditions and that all flights would use the noisiest helicopters. The report assumed a yearly average of 300 flights that slightly exceeds the existing monthly average of 23 flights per month (276 flights per year). As stated above, the Palomar Medical Center West project proposes to increase hospital capacity as compared to the existing Palomar Medical Center to meet future demand. Additionally, the incremental increase in flights associated with growth accommodated by the proposed project would not result in a greater proportion of flights occurring at night or using noisier helicopters. The increase in flights would not be expected to exceed the conservative estimate used to determine helipad noise levels in the Palomar Medical Center West noise technical report (Pacific Noise Control 2005). The helicopter flight pad is also distanced approximately 200 feet higher and 560 feet horizontally from the nearest residence. Receptors surrounding the hospital would generally not be exposed to noise levels exceeding 60 dBA CNEL. Instantaneous noise levels could be up to 90 dBA at the closest NSLU, which is similar to a heavy truck at a distance of 50 feet (Pacific Noise Control 2005). However, helicopter flights are non-scheduled, fly in various directions transporting patients to and from hospitals, and vary their path to adjust for other air traffic, tall buildings and weather conditions. Flights over a particular receptor would not occur regularly. Additionally, an instantaneous noise level of 90 dBA would not exceed the one-hour average sound level limits listed in Table 4.12-5, City of Escondido Exterior Sound Limit Levels. Therefore, occasional exposure to short-term helicopter noise would not be excessive. Development under the proposed project would not be exposed to excessive noise from the Palomar Medical Center West helipad. Impacts would be less than significant.

Section 15074(e) of the CEQA Guidelines establishes a two-mile screening distance for potential noise impacts related to public use airports. This is a conservative screening distance for private airstrips because these airstrips typically support fewer flights and small, private planes do not generate the same noise levels as commercial and cargo airplanes. A small private landing strip operates at the Lake Wohlford Resort. The airstrip is located approximately two miles away from existing development other than the resort and Lake Wohlford recreational facilities. The nearest development consists of the residences along Woods Valley Road and near the intersection of Lake Wohlford Road and Valley Center Road. The airport is further separated from development by hills that attenuate take-off and landing noise. Under the General Plan Update, the area surrounding Lake Wohlford would be designated for public/open space use. Therefore, residences or employment centers would not be located in the immediate proximity to the airstrip. Land uses designations within two miles of the airport consist of low density and residential and estate development. A maximum density of one residence per acre would be accommodated near the intersection of Lake Wohlford Road and Valley Center Road. Therefore, a limited number of new receptors would be accommodated within two miles of the airstrip. Additionally, the airstrip generally experiences only 15 landings per week and accommodates single-engine aircraft. Therefore, development under the proposed project would not be exposed to excessive noise levels as a result of occasional take-offs and landings from the Lake Wohlford Resort airstrip.

The Blackinton Airport is located more than two miles north of the General Plan Update boundary in the unincorporated Valley Center community. Therefore, development under the proposed project would not be exposed to excessive noise from this airstrip.

Federal, State, and Local Regulations and Existing Regulatory Processes

Future development under the proposed project would be required to comply with applicable ALUCPs and the 1990 California Airport Noise Standards that establish 65 dBA CNEL as the level of noise acceptable to a reasonable person residing in the vicinity of an airport. Further, future development would be subject to the City's Noise Compatibility Standards, which establish a more conservative compatibility standard of 60 dBA CNEL for NSLU. As described above, future land uses would not be located within the 60 dBA CNEL noise contour of a public use airport or private airstrip.

Proposed General Plan Update Policies

The Community Protection Element contains Noise Policies 5.15 and 5.16, which require coordination with McClellan-Palomar Airport to distribute property disclosure statements for areas within the ALUCP, and require the City to work with McClellan-Palomar Airport to monitor aircraft noise, implement noise-reducing operation measures, and promote pilot awareness of noise sensitive land uses.

Proposed Downtown Specific Plan Update Policies

The proposed Downtown Specific Plan Update does not include any policies related to noise exposure from airports.

Proposed Escondido Climate Action Plan Reduction Measures

The proposed E-CAP does not include any reduction measures related to noise exposure from airports.

Summary

Future development under the proposed project would not be located within the 60 dBA CNEL noise contour of any public use airport, MCAS Miramar, or private airstrip. Additionally, development under the proposed project would not interfere with operations at a public use airport, MCAS Miramar, or private airstrip. Therefore, although areas within the General Plan Update planning boundary would be subject to overflights and periodic aviation noise, residents and workers would not be exposed to excessive noise levels from a public airport, MCAS Miramar, or a private airstrip. Impacts related to noise from airports and airstrips would be less than significant.

4.12.4 Cumulative Impacts

The geographic scope of cumulative impact analysis for noise is limited to areas surrounding noise-generating sources, such as roadways or industrial uses because noise impacts are localized in nature.

Issue 1: Excessive Noise Levels

A cumulative noise impact would occur if development associated with cumulative projects would expose new land uses to noise levels that exceed proposed noise compatibility guidelines. Development proposed under the cumulative projects would be subject to regulations that require compliance with

noise standards, including Title 24, and the applicable Noise Ordinance and general plan policies. Similar to the proposed project, cumulative land development would have the potential to locate new NSLU in areas that would result in their exposure to excessive noise levels. Therefore, the proposed project, in combination with the cumulative projects, would have the potential to result in a significant cumulative impact associated with noise exposure. However, compliance with existing regulations such as the Noise Ordinance, and implementation of the proposed General Plan Update policies, including Noise Policies 5.1 though 5.4 and the Noise Compatibility Guidelines, would reduce the proposed project's contribution to a significant cumulative impact to less than cumulatively considerable.

Issue 2: Excessive Groundborne Vibration

A cumulative groundborne vibration impact would occur if one or more projects in the area would result in combined groundborne vibration that would increase vibration to a level that would result in sleep disturbance or interfere with activities at vibration-sensitive land uses. Groundborne vibration impacts could result from construction operations, railroad operations, or mining. Since there are no specific plans or time scales for individual construction projects, it is not possible to determine exact noise levels, locations, or time periods for construction.

Construction activities such as pile driving can result in significant vibration up to 900 feet from the source. Therefore, the potential exists for cumulative construction projects to result in combined construction impacts if occurring simultaneously. Additionally, construction in close proximity to the ~~Sprinter~~SPRINTER ROW or existing extraction operations could result in combined vibration impacts. Similar to the proposed project, cumulative development may result in the placement of vibration-sensitive land uses in close proximity to the ~~Sprinter~~SPRINTER ROW, resulting in a cumulative increase in exposure to groundborne vibration. The proposed project would result in construction activities throughout the General Plan Update planning area, including in close proximity to the ~~Sprinter~~SPRINTER line and adjacent jurisdictions. The SANDAG 2050 Regional Transportation Plan (RTP) proposes to double track the NCTD ~~Sprinter~~SPRINTER rail line by year 2030 to increase train operations, which would incrementally increase vibration levels. Additionally, the California High-Speed Rail Authority is proposing an 800-mile high speed rail line that would construct railway alignments in 10 different sections throughout the state. The proposed Los Angeles to San Diego section would be 167 miles long, beginning at Los Angeles Union Station. From there it would head east to the Inland Empire cities of Pomona and Ontario before turning south along either I-215 or I-15 to San Diego. Multiple new stations are proposed along the route, including a potential station in Escondido. The current conceptual alignment generally follows along the eastern side of the I-15 freeway corridor through Escondido with a station proposed near the I-15 and SR-78 Interchange, but the rail alignment is subject to change. The Los Angeles to San Diego section is currently in the planning and alternatives analysis stage. Therefore, potential vibration impacts from this project are too speculative to analyze at this time (CHRA 2011). A vibration study to analyze potential vibration impacts from the high speed rail project would be prepared by the California High-Speed Rail Authority as part of the NEPA/CEQA process required prior to project approval. The proposed project, in combination with other proposed cumulative projects, would result in a potentially significant cumulative groundborne vibration impact due to construction activities and potential increases in rail operations.

Issue 3: Permanent Increase in Ambient Noise Levels

A cumulative noise impact would occur if construction and development associated with cumulative regional land use projects, such as those identified in adjacent city and County general plans and

regional transportation plans, would result in an increase in regional traffic volumes that would cause a permanent increase in ambient noise which exceeds the applicable noise standards on roadways throughout the region. The Final EIR prepared for the SANDAG 2050 RTP (SCH # 2010041061) determined that regional transportation improvements and increased regional traffic volumes associated with regional growth would have the potential to result in a substantial permanent increase in ambient noise levels. Additionally, the 2050 RTP proposes to double track the NCTD ~~Sprinter~~SPRINTER rail line and the California High Speed Rail Authority proposes a potential high speed rail line through Escondido, which would incrementally increase noise levels. The Draft EIR for the 2050 RTP proposed programmatic mitigation measures that require project-specific analysis to reduce significant impacts. However, because the mitigation measures cannot guarantee that impacts would be reduced to a less than significant level, impacts related to a permanent increase in regional traffic noise level are significant and unavoidable. The Draft EIR also concluded that impacts would be cumulatively considerable and unavoidable. Therefore, a significant cumulative impact related to regional increases in traffic noise would occur. As discussed above, implementation of the proposed project would result in a permanent increase in ambient roadway noise levels. Therefore, the proposed project would result in a cumulatively considerable contribution to a significant cumulative impact.

Issue 4: Temporary Increase in Ambient Noise Levels

A cumulative temporary noise impact would occur if one or more cumulative projects close proximity to one another would be constructed at the same time and result in combined construction noise levels that exceed 75 dBA. Because there are no specific plans or time scales for individual construction projects, it is not possible to determine exact noise levels, locations, or time periods for construction. As discussed above, construction activities such as pile driving can result in significant construction noise up to 1,000 feet from the source. Therefore, the potential exists for future construction of cumulative projects to result in combined construction noise impacts. A potentially significant cumulative impact would occur.

The proposed project would also have the potential to result in a significant impact associated with construction noise. However, required compliance with the City's Noise Ordinance and the proposed General Plan Update policies would reduce the proposed project's impacts related to construction noise to a less than significant level. Therefore, the proposed project would not result in a cumulatively considerable contribution to a potentially significant impact related to temporary construction noise.

Issue 5: Excessive Noise Exposure from Airports

Noise related to airports is generally site specific and not cumulative in nature. The placement of a structure within the noise contours of a public airport or in close proximity to a private airstrip would not affect airport noise related to the placement of another cumulative project. Additionally, development and construction proposed under the cumulative projects would be subject to regulations that require compliance with noise standards, such as the 1990 California Airport Noise Standards and applicable ALUCPs. Similar to the proposed project, compliance with the land use compatibility standards in the applicable ALUCP would ensure that cumulative projects would not result in significant noise impacts. ALUCPs are not required for private airports; however, most cumulative projects would be subject to CEQA and would be required to consider potential impacts related to private airstrips. Additionally, private airstrips typically have intermittent flight operations and private planes do not generate noise levels as high as commercial and cargo planes. Therefore, private airstrips are less likely to result in excessive noise. The General Plan Update planning area is not within the 60 dBA CNEL noise

contour of any public use airport and would not be exposed to excessive noise from a private airstrip or helipad. Therefore, the proposed project, in combination with other cumulative projects, would not result in a cumulative impact related to public use airports.

4.12.5 Significance of Impact Prior to Mitigation

Prior to mitigation, the proposed General Plan Update would result in a potentially significant direct impact associated with excessive groundborne vibration. The proposed project would have the potential to result in a significant cumulative impact associated with excessive groundborne vibration and permanent increases in ambient noise. The proposed project would result in less than significant direct and cumulative impacts related to excessive noise levels, temporary increases in noise levels and noise from public airports of private airstrips.

4.12.6 Mitigation

Issue 1: Excessive Noise Levels

Impacts related to excessive noise levels would be less than significant; therefore, no mitigation is required.

Issue 2: Excessive Groundborne Vibration

Mitigation Measure Noi-1 would reduce direct and cumulative groundborne vibration impacts from construction. However, it cannot be guaranteed that these best management practices (BMPs) would reduce all construction-related vibration impacts to a less than significant level. Therefore, impacts from groundborne vibration during construction would be temporarily significant and unavoidable. Mitigation measure Noi-2 would reduce groundborne vibration and noise impacts from the ~~Sprinter~~SPRINTER to a less than significant level.

Noi-1 **Construction Vibration Best Management Practices.** All general construction activities that take place within 100 feet of a building with the potential to be damaged by excessive vibration, or use pile-driving, blasting, or other high-impact construction equipment within 200 feet of a daytime NSLU (public and private educational facilities, churches, libraries, museums, cultural facilities, golf courses and passive recreational parks) shall implement the following construction BMPs recommended by the Federal Railroad Administration~~FRA~~ in the High Speed Ground Transportation Noise and Vibration Impact Assessment (2005):

1. Sequence of operations:
    a. Phase demolition, earthmoving, and ground-impacting operations so as not to occur in the same time period.
2. Alternative construction methods:
    a. Avoid impact pile driving where possible in vibration-sensitive areas. Drilled piles or the use of a sonic or vibratory pile driver causes lower vibration levels where the geological conditions permit their use.

b. Select demolition methods not involving impact, where possible. For example, sawing bridge decks into sections that can be loaded onto trucks results in lower vibration levels than impact demolition by pavement breakers, and milling generates lower vibration levels than excavation using clam shell or chisel drops.

c. Avoid vibratory rollers and packers near sensitive areas.

Noi-2 **Setback of Vibration-Sensitive Land Uses from ~~Sprinter~~SPRINTER Alignment.** Future development of vibration-sensitive land uses within 450 feet of the ~~Sprinter~~SPRINTER right-of-way or places where people sleep within 230 feet of the ~~Sprinter~~SPRINTER right-of-way shall require a site-specific groundborne vibration analysis conducted by a~~n~~ qualified vibration analyst to determine that vibration levels generated by the ~~Sprinter~~SPRINTER at the proposed project site would not exceed the Federal Transit Administration~~FTA~~'s groundborne vibration standards for vibration sensitive equipment and sleep disturbance. If necessary, mitigation shall be required for land uses in compliance with the standards listed in EIR Table 4.12-10, General Plan Update Groundborne Vibration Impact Criteria.

Issue 3: Permanent Increase in Ambient Noise Levels

The proposed General Plan Update would not result in a potentially significant direct impact associated with a permanent increase in ambient noise levels; therefore, no mitigation is required.

However, land use development proposed in accordance with the proposed project would still contribute to cumulative future regional noise increases associated with roadway traffic. Implementation of General Plan Policy 5.6 would require future development with the potential to substantially increase noise levels to prepare a noise technical report and attenuate increases in noise levels at nearby sensitive receptors. However, implementation of this policy would not reduce cumulative impacts to a less than significant level because it cannot be guaranteed that noise levels would be reduced to below the applicable threshold. The following mitigation measures have been identified that would fully reduce impacts to below a level of significance. However, these measures have been determined by the City as infeasible for the reasons listed below:

Infeasible Mitigation Measures

1. Require future development to construct walls or other barriers that would attenuate noise to the sensitive receptors behind the barrier for any potential increases in regional roadway noise for which no other mitigation is available.

   This measure is considered to be infeasible because it would potentially require installation of noise walls within private property, within a designated right-of-way, or otherwise outside of the City's jurisdiction, which may not be allowed by a property owner or by the jurisdiction in which the sound barrier would be located. The feasibility of noise walls is also restricted by access requirements for driveways, presence of local cross streets, underground utilities, other noise sources in the area, and safety considerations (Caltrans 2011). Breaks in the noise wall for access would not provide any noise attenuation and would render the wall ineffective. Additionally, for safety reasons, Caltrans states that noise barriers should not exceed 14 feet in height (Caltrans 2011). Due to high existing noise levels, particularly along I-15, a noise barrier of more than 14 feet may be required to reduce noise levels along some roadway segments to an acceptable noise level for NSLU. Finally, construction of a noise barrier would potentially wall off existing neighborhoods or individual

residences from the surrounding community, which could result in adverse impacts to aesthetics, land use, and potentially public safety because the noise walls would limit the visibility of residences from the surrounding area (FHWA 2011). Natural surveillance is one of the four principles of Crime Prevention through Environmental Design (NCPC 2003). Therefore, for the reasons listed above, this mitigation measure would not be implemented.

2. Implement a Citywide moratorium on building permits for projects that would result in a potentially significant increase in regional roadway noise for which no feasible mitigation is available.

   This measure is considered to be infeasible because it would impede the City's ability to implement the General Plan Update and Downtown Specific Plan Update by prohibiting future development in areas identified for increased growth in the proposed project area. This mitigation measure would also conflict with the project objective to meet the housing needs of existing and future residents. Therefore, for the reasons listed above, this mitigation measure would not be implemented.

There are no feasible mitigation measures available to reduce impacts related to regional increases in roadway noise. Chapter 6, Alternatives, provides a discussion of several land use alternatives to the proposed project that would result in reduced impacts associated with traffic noise as compared to the proposed project.

Issue 4: Temporary Increase in Ambient Noise Levels

The proposed General Plan Update would not result in a potentially significant impact associated with a temporary increase in ambient noise levels; therefore, no mitigation is required.

Issue 5: Excessive Noise Exposure from Airports

The proposed General Plan Update would not result in a potentially significant impact associated with airport noise; therefore, no mitigation is required.

4.12.7 Conclusion

The discussion below provides a synopsis of the conclusion reached in each of the above impact analyses, and the level of impact that would occur after mitigation measures are implemented.

Issue 1: Excessive Noise Levels

Implementation of the proposed General Plan Update would have the potential to expose land uses to noise levels in excess of noise compatibility guidelines. However, compliance with existing regulations and implementation of the proposed General Plan Update policies would reduce this impact to a level below significant. Therefore, the proposed project would result in a less than significant direct impact. In addition, the proposed project would not contribute to a potentially significant cumulative impact associated with excessive noise levels.

Issue 2: Excessive Groundborne Vibration

Implementation of the General Plan Update would have the potential to affect groundborne vibration sensitive land uses near the ~~Sprinter~~SPRINTER rail line and where construction equipment would

operate within vibration-sensitive land uses. Therefore, the proposed project would result in a potentially significant direct impact. In addition, the proposed project would have the potential to contribute to a potentially significant cumulative impact associated with excessive groundborne vibration. Implementation of the proposed General Plan Update goals and policies and mitigation measures Noi-1 and Noi-2 would reduce the project's potential direct impact and contribution to a cumulative impact, but not to a less than significant level. Impacts would remain significant and unavoidable. Alternatives that would further reduce this noise impact as compared to the proposed project are discussed in Chapter 6, Project Alternatives.

Issue 3: Permanent Increase in Ambient Noise Levels

Implementation of the General Plan Update would permanently increase ambient noise along roadways. Therefore, the proposed project would result in a potentially significant impact. Additionally, General Plan Update would result in a cumulatively considerable contribution to a potentially significant cumulative impact. Although implementation of the proposed General Plan Update policies would reduce the project's direct impact to a less than significant level, the project's contribution to a regional cumulative impact would remain significant and unavoidable. No feasible mitigation measures are available to reduce the project's cumulative impact related to regional increases in roadway noise to a less than significant level. Alternatives that would further reduce this noise impact as compared to the proposed project are discussed in Chapter 6, Project Alternatives.

Issue 4: Temporary Increase in Ambient Noise Levels

Implementation of the General Plan Update would have the potential to temporarily increase ambient noise from construction activity. Therefore, the proposed project would result in a potentially significant impact. However, implementation of the proposed General Plan Update policies, in addition to compliance with applicable regulations, would reduce the proposed project's direct impacts to a less than significant level. In addition, the proposed project would not contribute to a potentially significant cumulative impact associated with a temporary increase in ambient noise levels.

Issue 5: Excessive Noise Exposure from a Public Airport

Future development under the General Plan Update would not be located within the 60 dBA CNEL noise contour of any public airport and would not be exposed to excessive noise from a private airstrip. Therefore, the proposed project would not result in a significant impact. In addition, the proposed project, in combination with the cumulative projects, would not result in a cumulative impact associated with excessive noise exposure from airports.

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