

3.10 Noise

This section examines whether long-term implementation of the Draft General Plan will expose persons in future uses to excessive noise levels or creates a substantial permanent or periodic increase in ambient noise within the City.

3.10.1 Existing Conditions

The City is primarily a developed and urbanized city, and an elevated ambient noise level is a normal part of the urban environment. Urban areas typically have a higher ambient noise level, which is the composite of noise from all normal background noise sources at a given location. The most prevalent noise sources in San Diego are from motor vehicle traffic on interstate freeways, state highways, and local major roads generally due to higher traffic volumes and speeds. Aircraft noise is also present in many areas of the City. Rail traffic and industrial and commercial activities contribute to the noise environment. Urban noises can also include, but are not limited to the following: construction, refuse vehicles, sporting/special events, and public activity noise, such as dogs barking, leaf blower, loud music or car alarms.

Definitions of Acoustical Terms

Noise can be defined as unwanted or objectionable sound. Whether a sound is undesirable is often dependent on the receiver's activity and time of the day. The same noise may be more annoying when a person is reading or studying than when he or she is watching television or doing something else that generates noise. Likewise, a siren in the middle of the night would usually be more annoying than one heard during the day. Excessively high noise levels can cause physical injury and adverse psychological effects.

Noise is commonly described in terms of decibels (dB). The healthy human hearing system can hear an extremely wide range of sound pressures. A decibel is measured logarithmically; by using logarithms, the decibel system condenses the wide range to one which is more convenient, covering 0 decibels (threshold of hearing) to 130 decibels (threshold of pain) (Harris 1991).

A-weighted sound pressure levels in decibels (dBA) are the most commonly used units of measure for community noise studies. A-weighted sound pressure levels represent an approximation of the frequency response of a healthy human hearing system. A-weighting takes into account the fact that humans are more sensitive to higher frequency sounds than lower frequency sounds.

Many different descriptors have been developed to evaluate community response to noise. The most widely used descriptors today are the average noise level (L_{eq}), the Community Noise Equivalent Level (CNEL), and the day/night average noise level (L_{dn} or DNL). The L_{eq} is the noise level equivalent to the actual time-varying noise level occurring over a specified period of time (usually 1 hour). The CNEL is a 24-hour measure of community noise exposure. The CNEL is an average of the L_{eq} that occur during a 24-hour period. However, when determining the 24-hour average, 5 dBA are added to the evening (7:00 p.m. to 10:00 p.m.) noise level

averages and 10 dBA are added to the nighttime (10:00 p.m. to 7:00 a.m.) noise level averages to account for added sensitivity to noise during these times. The L_{dn} is similar to the CNEL, except that the evening hours are not weighted.

Ambient Levels and Existing Noise Sources

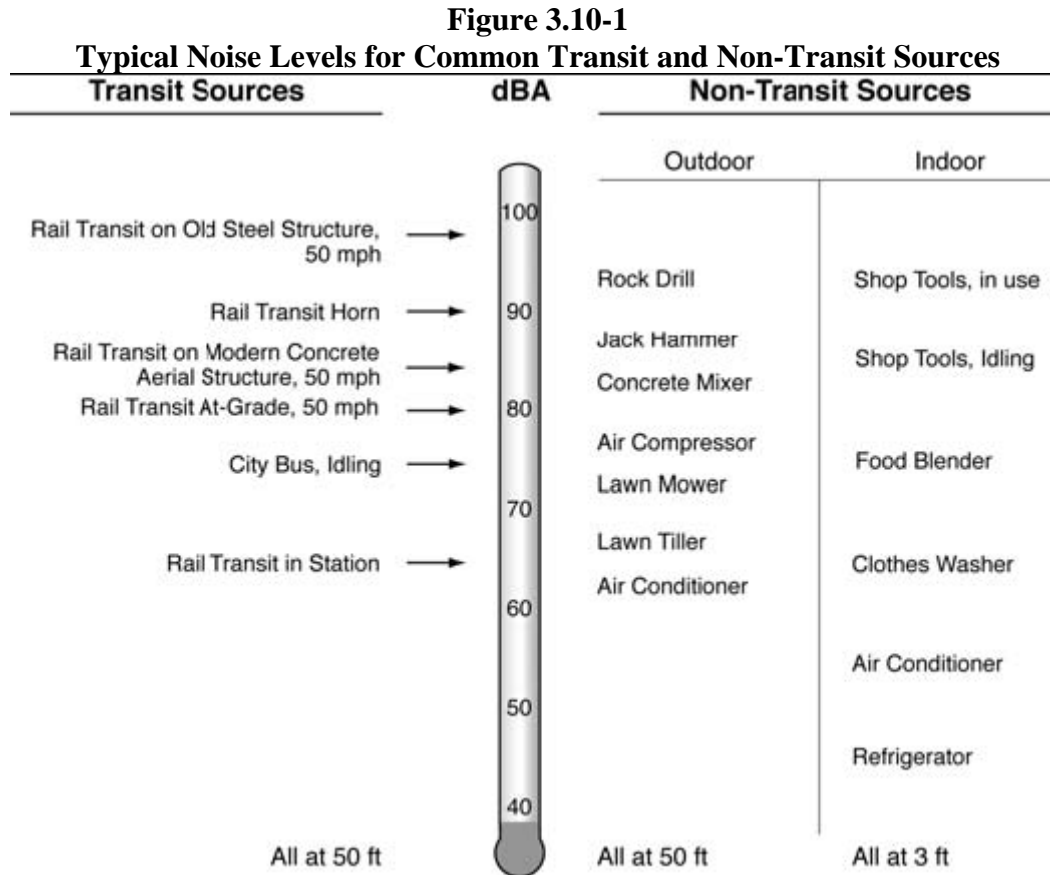
The ambient noise level is the all-encompassing noise associated with a given environment at a specified time. It is the composite of sound from many sources in all directions, near and far, with no particular sound being dominant (Harris 1991). Typical ambient levels range from 35 to 50 CNEL in rural and agricultural areas, 50 to 65 CNEL in suburban to urban areas, and 65 to 75 CNEL in downtown urban areas (EPA 1974).

The most prevalent noise generators in the City are vehicles on interstate freeways, state highways, and major local roadways) and aircraft (airplanes and helicopters flying overhead). Railroads, stationary industrial, commercial sources, and construction also contribute to the noise environment. Local collector streets are not considered a significant source of noise since traffic volume and speed are generally much lower than for freeways and major roadways. Both **Table 3.10-1** and Figure 3.10-1 identify common indoor and outdoor activities and sources of noise, and their typical level of noise generation on the dBA scale.

Table 3.10-1
Typical Noise Levels for Common Indoor and Outdoor Activities

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 meters (1,000 feet)	--100--	
Gas Lawn Mower at 1 meter (3 feet)	--90--	
Diesel Truck at 15 meters (50 feet), at 80 km/hr (50 mph)	--80--	Food Blender at 1 meter (3 feet) Garbage Disposal at 1 meter (3 feet)
Noisy Urban Area, Daytime Gas Lawn Mower at 30 meters (100 feet)	--70--	Vacuum Cleaner at 3 meters (10 feet)
Commercial Area Heavy Traffic at 90 meters (300 feet)	--60--	Normal Speech at 1 meter (3 feet)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. October 1998.



Motor Vehicle Traffic Noise

The traffic noise generated on a roadway is dependent on traffic speed, volume, flow, vehicle mix (percentage of trucks), properly function vehicle muffler system, pavement type and condition, the use of barriers, as well as distance to the receptor. In general, the larger the traffic volume is on a roadway, the higher the noise levels that are generated on the roadway. This general condition exists until there is so much traffic that flow degrades and speeds decrease, which lowers noise levels. Roadways with large percentages of heavy trucks will generate higher noise levels. A heavy truck traveling 50 miles per hour (mph) generates about 85 dBA from a distance of ten feet, whereas a car traveling the same speed generates only 71 dBA. An increase of 10 dBA is usually perceived by the human ear as a “doubling” of sound volume (FHWA 1973).

The roadways, which generate the highest noise levels in the City, are the interstate freeways and state highways because they have the highest speed limits, the largest traffic volumes, and the most trucks. Highways typically generate 70 to 80 dBA CNEL at a receptor adjacent to the highway. Heavily used commuter roadways, such as arterials and major streets, also generate significant levels of noise, typically 65 to 75 dBA CNEL at an adjacent receptor. In the City of San Diego, there is a wide range of existing land uses that are located adjacent to interstate freeways, state highways and major streets, including residences, schools, churches, hospitals, shopping centers, industrial parks, agriculture, parks, and open space.

As well, vehicles such as refuse collection trucks, parking lot or street sweeper vehicles, delivery trucks, large buses, ambulances or other emergency vehicles can generate significant if only intermittent noise on local streets. These affect receptors in residential or other sensitive land uses adjacent to or nearby these streets, particularly in environments with greater density and during the late evening and early morning hours.

Rail Noise

Daily traffic from passenger (intercity and commuter) and freight train and light-rail transit (trolley) operations produces noise that may disrupt adjacent noise-sensitive uses. Generally, freight operations occur at all hours of the day and night while passenger rail operations are concentrated within the daytime and evening periods. Trains can generate high, relatively brief, intermittent noise events. As shown in **Table 3.10-1** above, train noise can be perceived well above 80-dBA. Train noise is an environmental concern for sensitive uses located along rail lines and in the vicinities of switching yards and at roadway-rail crossings.

Factors that influence the overall rail noise include the train speed, train horns, type of engine, track conditions, use of concrete cross ties and welded track, the intermittent nature of train events, time of day, and sound walls or other barriers. The interaction of steel wheels and rails generate primary rail noise. The latter source creates three types of noise: 1) rolling noise due to continuous rolling contact; 2) impact noise when wheels encounter a rail joint, turnout or crossover; and 3) squeal generated by friction on tight curves. To help address the rail noise associated with rail joints, rails are welded together on light rail and commuter rail lines as well as the use of concrete ties to hold the rails. When operating in residential areas, trains are required to travel at a reduced speed to minimize noise.

Federal regulations require trains to sound their horns at all roadway-rail grade crossings and the warning sound of train horns is a common sound experienced by communities near the rail corridor. Train air horns and crossing bell gates contribute to loud noise levels near grade crossings (U.S. DOT 2006). The federal minimum noise level for a train horn is 96 dB. In an effort to minimize excess train horn noise, the federal government allows local jurisdictions to establish train horn “quiet zones.” This requires the implementation of supplementary and alternative safety measures to compensate for loss of the train horn usage. The installation of grade separation at roadway-rail grade crossings can minimize train horn noise.

The California High-Speed Rail Authority has selected the inland Interstate 15 as the preferred corridor for high-speed rail service that would connect the San Diego region to other regions in the state. Air turbulence noise generated from high-speed train traffic may affect noise-sensitive uses along the potential rail corridors

Aircraft Noise

Aircraft noise primarily affects communities within an airport influence area. The noise impact or the perceived annoyance depends upon the noise volume, length of the noise event and the time of day. In general, aircraft noise varies with the type and size of the aircraft, the power the

aircraft is using, and the altitude or distance of the aircraft from the receptor. Another variable affecting the overall impact of noise is a perceived increase in aircraft noise at night.

Aircraft noise is one of the factors that the state-required Airport Land Use Compatibility Plan addresses and has established policies for land use compatibility. The California Airport Noise Standards (California Code of Regulations, Title 21) establishes the 65-dBA CNEL as the boundary for the normally acceptable level of aircraft noise for noise-sensitive land uses including residential uses near airports.

Since CNEL represents averaged noise exposure over a 24-hour period, there can be single event noise levels that may exceed the reported CNEL. Although there is no single event standard for aircraft noise exposure, the measurement of the duration and maximum noise levels during single event noises can assist in evaluating potential affects on future noise sensitive land uses.

Uses that have outdoor areas exposed to high levels of aircraft noise cannot mitigate noise levels to an acceptable level due to overflights. Noise-sensitive uses that have outdoor areas used daily by the occupants, such as schools for children and child care centers, are incompatible in areas that exceed the 65-dBA CNEL since mitigation measures cannot reduce exposure to outdoor play areas from prolonged periods of high aircraft noise.

Aircraft noise from civilian airports and military air installations within and adjacent to the City of San Diego is another major noise source. San Diego International Airport (SDIA) at Lindbergh Field is located near downtown and is surrounded by urban development primarily containing residential and commercial uses on three sides and the San Diego Bay to the south. The other civilian airports and military air installations within the City are Marine Corps Air Station (MCAS) Miramar; Montgomery Field, and Brown Field. The City owns and operators Montgomery Field and Brown Fields which serve general aviation aircraft. Airports outside the City of San Diego which could impact noise-sensitive land uses within the City include the following: the Naval Air Station (NAS) North Island, Naval Out Lying Field (NOLF) Imperial Beach, and Tijuana International Airport.

SDIA primarily handles commercial passenger service, although cargo transport, general aviation and military services make up a portion of the daily flights, and does affect existing residential areas. Military installation flights at MCAS Miramar and NAS North Island are less frequent, but are capable of producing considerably more noise than a passenger aircraft, which can affect existing residential areas. General aviation aircraft noise at Montgomery Field and Brown Field is more localized, but does affect existing residential areas. Helicopter operations at NOLF Imperial Beach primary affects open space and agricultural areas in the Tijuana River Valley. The existing aircraft noise contours are shown in **Figure 3.10-2, 3.10-3, and 3.10-4** and projected noise contours are shown in **Figures 3.10-5, 3.10-6, and 3.10-7** for SDIA, NAS North Island, MCAS Miramar, Montgomery Field, Brown Field and NOLF Imperial Beach respectively. The Figures listed above with the existing and projected noise contours also show generalized planned land use based on adopted community plans.

Aircraft operations at SDIA are limited by a curfew, which restricts departures between 11:30 p.m. and 6:30 a.m. though emergency medical, military aircraft, and aircraft delayed due to needed

repairs may be exempt from this curfew. This greatly reduces the effect of air traffic noise on sensitive land uses during late night hours. Other mitigation monitoring programs implemented by the military and City airports, such as pilot awareness programs, help to further reduce unnecessary aircraft noise impacts on residential and other noise-sensitive land uses.

Helicopter operations are an additional source of aircraft noise within the City. Helicopter traffic typically affects areas near airports and military installations or, though they can affect areas near heliports as well. Low-flying helicopters or helicopters at night can be a particular nuisance to sensitive noise receptors.

Construction Noise

Construction can be another major, although typically short-term, source of noise. Construction is of most concern when it takes place near noise-sensitive land uses, occurs at night or in early morning hours. Noise from construction can also affect nearby wildlife by interfering with the ability to establish territory, vocalize, or successfully reproduce. Additional discussion of noise impacts to wildlife is provided in **Section 3.3 Biological Resources**. As discussed above, the City of San Diego typically regulates noise associated with construction equipment and activities through enforcement of noise ordinance standards, implementation of General Plan policies, and imposition of conditions of approval for building or grading permits. **Table 3.10-2** shows typical exterior noise levels at various phases of commercial construction.

**Table 3.10-2
Typical Construction Phase Noise Levels**

Equipment Item	Range of Noise Level at 50 Feet [dB(A)]	Nominal Noise Level, L_{eq}, at 50 Feet [dB(A)]
<i>Earthmoving</i>		
Backhoes, 200 HP	71 to 93	85
Berm Machine, 100 HP	74 to 84	80
Dozers	72 to 96	86
Front Loaders, 300 HP	71 to 96	82
Graders	73 to 95	85
Paver	80 to 92	89
Roller, 180 HP	78 to 84	79
Scrapers	73 to 95	88
Tractors, 200 HP	72 to 96	84
Trencher, 80 HP	76 to 86	82
Truck/Trailer, 200 HP	70 to 92	82
Truck: 125 HP, 150 HP	76 to 85	80, 82
<i>Materials Handling</i>		
Concrete Mixer	70 to 90	85
Concrete Pump	74 to 84	82
Crane, Moveable: 50, 400 HP	75 to 95	76, 83
Derrick	86 to 89	88
Forklift, 40 HP	68 to 82	80
Side Boom, 200 HP	80 to 90	85
Water Truck, 500 HP	79 to 88	84
<i>Stationary Equipment</i>		
Boiler, 1600 HP	79 to 85	82
Compressors: 100, 200 HP	68 to 87	78, 81
Generators: 20, 400, 1300 HP	69 to 81	74, 81, 84
Pumps: 25, 200, 350 HP	60 to 80	73, 76, 80
<i>Impact Equipment</i>		
Compactor, 20 HP	84 to 90	86
Jack Hammers	75 to 104	88
Pile Drivers (Peak Level)	90 to 104	101
Pneumatic Tools	82 to 88	86
Rock Drills	90 to 105	98
Steam Boiler (Pile Driver)	83 to 92	88
<i>Other Equipment</i>		

**Table 3.10-2
Typical Construction Phase Noise Levels**

Equipment Item	Range of Noise Level at 50 Feet [dB(A)]	Nominal Noise Level, L_{eq}, at 50 Feet [dB(A)]
Saws	67 to 92	78
Vibrators	69 to 80	76
Welding Machines: 50, 80 HP	76 to 85	80, 82

Commercial and Mixed-Use Activity

Several other noise sources exist in the City of San Diego. Noise generated commercial activity including operations, maintenance, truck deliveries, vehicular traffic, and high pedestrian traffic can affect adjacent noise sensitive uses and aboveground floor residential uses in mixed use buildings. Bars, restaurants, entertainment activities, events, and other facilities, which are active after 7:00 pm contribute to an urban noise environment that can affect residential or other sensitive land uses. City noise ordinances and existing construction guidelines both limit hours of operation and require noise level attenuation methods for continued operations to minimize the effect of noise on adjacent/above residential or sensitive land uses.

Industrial Activity

Industrial activity, like commercial activity, can be a source of noise, which can affect sensitive land uses in the City. The degree of noise generated by industrial uses is dependent upon various factors, including type of industrial activity, hours of operation, and the location relative to other land uses. In addition to traffic-related noises induced by industrial operations, on-site machinery can contribute to the ambient noise environment. Outdoor truck activity, air compressors, and generators are potential noise sources associated with industrial use that can interfere with noise-sensitive uses, which include residential uses. Like commercial activity, the City can monitor noise levels produced by industrial activity and enforce the Noise Abatement and Control Ordinance in order to reduce noise levels to acceptable levels, where sensitive receptors are impacted.

Event Activity

Large events, including sports and special events, occur intermittently throughout the year, which offer entertainment opportunities, but can also generate high noise levels at their source. Specific venues such as the downtown Ballpark, Qualcomm Stadium, or outdoor concert locations are designed to accommodate events that produce high noise levels. In addition, The City can permit special events throughout the City, although typically on City streets or parks. Part of this permitting process is to ensure that the event sponsors will adhere to the City's Special Event Ordinance, which limits the hours of event operation and noise levels depending on conditions such as specific location, surrounding land uses, and public benefit.

Refuse Vehicles, Parking Lot Sweepers, and Public Activity

Refuse vehicle and parking lot sweeper activity in all land use areas will temporarily elevate noise levels. Refuse vehicle and parking lot sweeper activities are necessary and noise control of these activities is limited. In an urban environment, excessive public noise such as barking dogs, leaf blowers, loud music, or car alarms can be disturbing, excessive, and annoying or offensive and cause discomfort or annoyance. The City’s Noise Abatement and Control Ordinance addresses and limits excessive noise from these activities.

Regulatory Framework and Sensitive Land Use Noise Standards

Federal, state, and local governments all have roles in the regulation of noise.

Federal Regulatory Framework

The federal government establishes noise criteria for the interstate freeways and airports. Federal highway noise evaluation and abatement policies are contained in the U.S. Code of Federal Regulations, 23 CFR Part 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise*. As defined in 23 CFR 772, **Section 772.5(g)**, traffic noise impacts occur when the predicted traffic noise levels approach or exceed the noise abatement criteria (NAC), as shown in **Table 3.10-2**, or when predicted traffic noise levels substantially exceed the existing noise levels. The numerical criteria used in California to define “approach the NAC” and “substantially exceed the NAC” are stated in **Table 3.10-3** below.

Table 3.10-3
FHWA Noise Abatement Criteria

Activity Category	Hourly A-Weighted Sound Level (1) (dBA)		Description of Activity Categories
	Leq(h)	L10(h)	
A	57 (Exterior)	60 (Exterior)	Lands in which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (Exterior)	70 (Exterior)	Picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (Exterior)	75 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	--	--	Undeveloped lands.
E	52 (Interior)	55 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

⁽¹⁾ Either L₁₀(h) or L_{eq}(h) (but not both) may be used on a project.

⁽²⁾ Source: 23 CFR 772

If a noise impact is identified, abatement measures must be considered. In determining and abating traffic noise impacts, primary consideration is to be given to exterior areas. Abatement will usually be necessary only where frequent human use occurs and a lowered noise level would be of benefit. FHWA criteria also state that where there are no exterior activities to be affected by the traffic noise, or where the exterior activities are far from or physically shielded from the

roadway in a manner that prevents an impact on exterior activities, the interior criterion shall be used as a basis of noise impacts.

The National Environmental Policy Act (NEPA) is a federal statute that requires federal agencies to take environmental consequences into account when they make certain decisions. Under NEPA, impacts and measures to mitigate adverse impacts must be identified, including the identification of impacts for which no or only partial mitigation is possible. The FHWA regulations described in the above section constitute the Federal Noise Standard. Projects complying with this standard are also in compliance with the requirements stemming from NEPA.

The U.S. Department of Housing and Urban Development (HUD) requires that noise analysis and mitigation be provided in accordance with the HUD Noise Guidebook for projects receiving HUD funding. Minimum attenuation requirements are prescribed in Title 24 of the Code of Federal Regulations (24 CFR 51.104(a)) which are the HUD Environmental Criteria and Standards.

Federal Aviation Administration oversees the development of voluntary studies noise exposure and land use compatibility study prepared by airport operators as prescribed in Title 14 of the Code of Federal Regulations, Part 150. The Part 150 studies identify existing noise exposure, identify potential future noise exposure, and evaluate various alternatives to reduce the number of people affected by aircraft noise. The studies also provide recommendations as to viable noise abatement/mitigation measures to reduce the number of people affected by noise. FAA approved measures can be eligible for federal funding.

State Regulatory Framework

The California Department of Transportation (Caltrans) also uses Federal criteria for state routes as well as having noise standards for airports (California Code of Regulations, Title 21). The state establishes noise emission limits for individual vehicles. The state also has interior noise standards in the Uniform Building Code (California Code of Regulations, Title 24). **Table 3.10-4** outlines the interior and exterior noise standards set forth by Title 24, Part 2.

**Table 3.10-4
State of California Interior and Exterior Noise Standards**

Land Use	Noise Standards ¹	
	Interior ^{2,3}	Exterior
Residential – Single-family, multi-family, duplex, mobile home	CNEL 45 dB	CNEL 65 dB ⁴
Residential – Transient lodging, hotels, motels, nursing homes, hospitals	CNEL 45 dB	CNEL 65 dB ⁴
Private offices, church sanctuaries, libraries, board rooms, conference rooms, theaters, auditoriums, concert halls, meeting halls, etc.	L _{eq(12)} 45 dB(A)	--
Schools	L _{eq(12)} 45 dB(A)	L _{eq(12)} 67 dB(A) ⁵
General offices, reception, clerical, etc.	L _{eq(12)} 50 dB(A)	--
Bank, lobby, retail store, restaurant, pool, etc.	L _{eq(12)} 55 dB(A)	--
Manufacturing, kitchen, warehousing, etc.	L _{eq(12)} 65 dB(A)	--
Parks, playgrounds	--	CNEL 65 dB ⁵
Golf courses, outdoor spectator sports, amusement parks	--	CNEL 70 dB ⁵

1. CNEL: Community Noise Equivalent Level. Leq(12): The A-weighted equivalent sound level averaged over a 12-hour period (usually the hours of operations).

2. Indoor standard with windows closed. Mechanical ventilation would be provided per UBC requirements to provide a habitable environment.

3. Indoor environment excluding bathrooms, toilets, closets, and corridors.

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

5. Outdoor environment limited to playground areas, picnic area, and other areas of frequent human use.

Source: Title 24, Part 2, California Code of Regulations

The California Environmental Quality Act (CEQA) is a state statute that requires state, local, and other agencies subject to the jurisdiction of California to evaluate the environmental implications of their actions. The main objectives of CEQA are to disclose to decision makers and the public the significant environmental effects of proposed activities and to require agencies to avoid or reduce the environmental effects of proposed activities and to require agencies to avoid or reduce the environmental effects by implementing feasible alternatives or mitigation measures.

Under CEQA, a substantial noise increase may result in a significant adverse environmental effect and, if so, must be mitigated or identified as a noise impact for which it is likely that no, or only partial, abatement measures are available. Specific economic, social, environmental, legal, and technological conditions may make additional noise attenuation measures infeasible.

Airport Land Use Commission Policies

San Diego County Regional Airport Authority (Airport Authority) serves as the Airport Land Use Commission (ALUC) for San Diego County. The state requires that the ALUC prepare and adopt Airport Land Use Compatibility Plans (ALUCP) for all public and military airports in the county. The ALUCPs serve two principal purposes: to provide for the orderly growth of each public airport and the area surrounding the airport, and to safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general. Each ALUCP provides policies and criteria for land use compatibility for the areas around an airport known as an

Airport Influence Area (AIA). **Figure 3.5-4** shows airport locations and Airport Influence Areas that affect land use in the City. Land use policies and criteria for each AIA incorporate safety, airspace protection, noise, and overflight considerations as specified by the state. The state also requires that residential property owners within an AIA disclose to prospective buyers that the property is in the vicinity of an airport and could be subjected subject to some of the annoyances or inconveniences associated with proximity to airport operations such as noise.

In October 2004, the Airport Authority, as the ALUC, adopted amendments to the ALUCPs. As part of the amendment, the Airport Authority renamed from Comprehensive Land Use Plans (CLUPs) to Airport Land Use Compatibility Plans. The amendments did not change the noise contours or the noise - land use compatibility matrix. The matrix identifies if a proposed land use would be compatible with the level of aircraft noise using the noise contours in the ALUCPs. **Figure 3.10-8, 3.10-9, and 3.10-10** show the ALUCP aircraft noise contours for SDIA, Brown Field, and MCAS Miramar and Montgomery Field, respectively. Currently, NAS North Island and NOLF Imperial Beach do not have adopted ALUCPs in place.

In 2005, the Airport Authority released draft ALUCPs for all airports within the county. Currently, the Airport Authority is in the process of revising the draft ALUCPs for the airports within and adjacent to the City with a target adoption of late 2007 to early 2008. The ALUC is not preparing an ALUCP for the Tijuana International Airport since it is not within the jurisdiction of ALUC.

The Airport Authority will be including the projected noise contours shown in **Figure 3.10-5 3.10-6 and 3.10-7** for SDIA, MCAS Miramar and Montgomery Field, and Brown Field, respectively, in the updated ALUCPs. The projected noise contour data for MCAS Miramar is from the 2005 Air Installation Compatible Use Zone (AICUZ) Study for MCAS Miramar. The projected noise data for NAS North Island is from the published 1984 AICUZ study. For NOLF Imperial Beach, the projected noise data is from the 1989 AICUZ study. The U.S. Navy is in the process of preparing updated AICUZ studies with updated noise contours for NAS North Island and NOLF Imperial Beach, which are currently not available.

The AICUZ studies for all the installations contain noise - land use compatibility matrices. The military uses the AICUZ study matrix to determine the noise compatibility of proposed development projects AICUZ study area for each air installation. The Airport Authority will be incorporating the noise contours and the noise - land use compatibility matrix criteria from the published 2005 MCAS Miramar AICUZ study and the updated AICUZ studies for NAS North Island and NOLF Imperial Beach when published into the updated and new ALUCPs for those military air installations.

An ALUCP contains policies and criteria that address compatibility between airports and future land uses that surround them by addressing noise, overflight, safety, and airspace protection concerns to minimize the public's exposure to excessive noise and safety hazards within the airport influence area for each airport over a 20-year horizon. The 20-year horizon is based on information contained in a master plan or layout plan for an airport. Since the ALUC does not have land use authority, the City implements the ALUCPs through land use plans (General Plan, community plans, and specific plans), development regulations, and zoning ordinances.

When an ALUCP is amended or updated, the City, as the land use jurisdiction, is required to submit the land use plans that are within an airport influence area to the ALUC for a consistency determination. At the same time, when an action is proposed to amend or update a land use plan, airport plan (master plan or layout plan), development regulation, and/or zoning ordinance within an airport-influence area, the City is required to submit these actions to the ALUC for a consistency determination prior to adoption of the action. The City can revise the proposed action to meet determination made by the ALUC or the City Council may overrule their determination by a two-thirds vote if it makes specific findings that the proposed action is consistent with the purposes of protecting public health, safety, and welfare, minimizing the public's exposure to excessive noise, and minimizing safety hazards within areas surrounding the airport. Section 3.5 of this EIR addresses aircraft hazards.

The City implements the adopted ALUCPs with the Airport Environs Overlay Zone (AEOZ). The AEOZ boundaries use the 60 dB CNEL contours consistent with the ALUCPs for Brown Field, Montgomery Field, and MCAS Miramar. For SDIA, the AEOZ uses the 1999 annual noise contours rather than the 1990 projected noise contours from the ALUCP. Although the noise contour boundaries are consistent with the ALUCPs except for SDIA, the AEOZ boundaries cover less area than the boundaries of the airport influence area. The City has agreed to submit discretionary projects within the airport influence area for each airport in the City with an adopted ALUCP to the ALUC for consistency determinations up until the time when the ALUC adopts the updated ALUCPs and subsequently determines that the City's affected land use plans are consistent with the ALUCPs. The City will also amend the AEOZ or develop a new overlay zone to implement the updated ALUCPs. After which time, the City will only submit proposed amendments or updates to land use plans, airport plans, development regulations, and zoning ordinances within an adopted airport-influence area prior to final City Council approval as required by state law.

Local Regulatory Framework

Local jurisdictions have noise ordinances in their municipal codes to regulate stationary sources of noise and policies and guidelines in their general plans to limit the affect of noise on sensitive land uses. The City of San Diego Noise Ordinance defines noise and regulates it by land-use, and time of day as shown in **Table 3.10-5**. These standards represent the exterior noise level limits, as measured at the property boundary, which is used to determine noise impacts.

**Table 3.10-5
Noise Limits by Land Use and Time of Day**

Land Use Zone	Time of Day	One-Hour Average Sound Level (dB)
1. Single Family Residential	7 a.m. to 7 p.m.	50
	7 p.m. to 10 p.m.	45
	10 p.m. to 7 a.m.	40
2. Multi-Family Residential (Up to a maximum density of 1/2000)	7 a.m. to 7 p.m.	55
	7 p.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
3. All other Residential	7 a.m. to 7 p.m.	60
	7 p.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
4. Commercial	7 a.m. to 7 p.m.	65
	7 p.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	60
5. Industrial or Agricultural	Any time	75


Source: SDMC §59.5.0401

For noise – land use compatibility planning, the City of San Diego currently uses the 1979 General Plan Land Use-Noise Level Compatibility Standards shown in **Table 3.10-6**. The City has an exterior noise level standard of 65 dB CNEL for noise-sensitive uses. These standards are designed to protect noise-sensitive land uses from high noise levels and to be used as guidelines in the planning for future land uses. Noise-sensitive land uses include, but are not necessarily limited to the following: residential, hospitals, nursing facilities, intermediate care facilities, educational facilities, libraries, museums, places of worship, child care facilities, and certain types of passive recreational parks and open space.


The City, as the operator of Montgomery Field, has adopted regulations that place limits on aircraft noise depending on the time of day. Daytime noise is limited to 88 dB from 6:30 a.m. - 11:30 p.m. Nighttime noise is limited to 70 dB from 11:30 p.m. to 6:30 a.m. These limits apply in residential areas near the airport. The regulations do include exemptions for public safety aircraft and emergencies. To limit larger and potentially noisier aircraft, the City restricts aircraft having a maximum certified take off gross weight greater than 20,000 pounds from using Montgomery Field.

**Table 3.10-6
1979 General Plan - Land Use-Noise Level Compatibility Standard**

Annual Community Noise Equivalent Level in Decibels		50	55	60	65	70	75
1	Outdoor Amphitheatres (may not be suitable for certain types of music).	█	█	█			
2	Schools, Libraries	█	█	█	█		
3	Nature Preserves, Wildlife Preserves	█	█	█	█		
4	Residential-Single Family, Multiple Family, Mobile Homes, Transient Housing	█	█	█	█		
5	Retirement Home, Intermediate Care Facilities, Convalescent Homes	█	█	█	█		
6	Hospitals	█	█	█	█		
7	Parks, Playgrounds	█	█	█	█		
8	Office Buildings, Business and Professional	█	█	█	█	█	
9	Auditoriums, Concert Halls, Indoor Arenas, Churches	█	█	█	█	█	
10	Riding Stables, Water Recreation Facilities	█	█	█	█	█	█
11	Outdoor Spectator Sports, Golf Courses	█	█	█	█	█	█
12	Livestock Farming, Animal Breeding	█	█	█	█	█	█
13	Commercial-Retail, Shopping Centers, Restaurants, Movie Theaters	█	█	█	█	█	█
14	Commercial-Wholesale, Industrial Manufacturing, Utilities	█	█	█	█	█	█
15	Agriculture (except Livestock), Extractive Industry, Farming	█	█	█	█	█	█
16	Cemeteries	█	█	█	█	█	█



COMPATIBLE
The average noise level is such that indoor and outdoor activities associated with the land use may be carried out with essentially no interference from noise.



INCOMPATIBLE
The average noise level is so severe that construction costs to make the indoor environment acceptable for performance of activities would probably be prohibitive. The outdoor environment would be intolerable for outdoor activities associated with the land use.

The State Uniform Building Code (Title 24, Noise Insulation Standards) establishes interior noise levels of 45 dB CNEL for new hotels, motels, and multi-family residences due to exterior noise sources. The City of San Diego extends this 45 dB CNEL interior noise level requirement to single-family residences. Draft General Plan Noise – Land Use Compatibility Guidelines, as shown in **Table 3.10-7**, would replace the 1979 General Plan noise standards.

The Draft General Plan Noise – Land Use Compatibility Guidelines provide more detail than the 1979 noise standards and allow uses to be conditionally compatible. A conditionally compatible category allows land uses in a particular noise environment where mitigation techniques are demonstrated to have the ability to attenuate noise to acceptable levels for both indoor and outdoor environments. Another key difference of the draft guidelines is the establishments of noise-land use compatibility categories for multi-family land uses and for mixed residential-commercial or live-work land uses. The Draft General Plan noise guidelines are tailored to meet the needs of the City and the potential interaction of a combination of land uses in the urban environment. Although more detailed, the draft noise guidelines more closely resemble the state of California noise guidelines, as shown in **Table 3.10-8**.

**Table 3.10-7
Draft General Plan - Land Use - Noise Compatibility Guidelines**

Land Use Category	Exterior Noise Exposure (dBA CNEL)			
	60	65	70	75
<i>Open Space and Parks and Recreational</i>				
Community & Neighborhood Parks; Passive Recreation				
Regional Parks; Outdoor Spectator Sports, Golf Courses; Athletic Fields; Outdoor Spectator Sports, Water Recreational Facilities; Horse Stables; Park Maintenance Facilities				
<i>Agricultural</i>				
Crop Raising & Farming; Aquaculture, Dairies; Horticulture Nurseries & Greenhouses; Animal Raising, Maintain & Keeping; Commercial Stables				
<i>Residential</i>				
Single Units; Mobile Homes; Senior Housing		45		
Multiple Units; Mixed-Use Commercial/Residential; Live Work; Group Living Accommodations *For uses affected by aircraft noise, refer to Policies NE-D.2. & NE-D.3.,		45	45*	
<i>Institutional</i>				
Hospitals; Nursing Facilities; Intermediate Care Facilities; Kindergarten through Grade 12 Educational Facilities; Libraries; Museums; Places of Worship; Child Care Facilities		45		
Vocational or Professional Educational Facilities; Higher Education Institution Facilities (Community or Junior Colleges, Colleges, or Universities)		45	45	
Cemeteries				
<i>Sales</i>				
Building Supplies/Equipment; Food, Beverages & Groceries; Pets & Pet Supplies; Sundries, Pharmaceutical, & Convenience Sales; Wearing Apparel & Accessories			50	50
<i>Commercial Services</i>				
Building Services; Business Support; Eating & Drinking; Financial Institutions; Assembly & Entertainment; Radio & Television Studios; Golf Course Support			50	50
Visitor Accommodations (Hotels & Motels)		45	45	45
<i>Offices</i>				
Business & Professional; Government; Medical, Dental & Health Practitioner; Regional & Corporate Headquarters			50	
<i>Vehicle and Vehicular Equipment Sales and Services Use</i>				
Commercial or Personal Vehicle Repair & Maintenance; Commercial or Personal Vehicle Sales & Rentals; Vehicle Equipment & Supplies Sales & Rentals; Vehicle Parking				
<i>Wholesale, Distribution, Storage Use Category</i>				
Equipment & Materials Storage Yards; Moving & Storage Facilities; Warehouse; Wholesale Distribution				
<i>Industrial</i>				
Heavy Manufacturing; Light Manufacturing; Marine Industry; Trucking & Transportation Terminals; Mining & Extractive Industries				

**Table 3.10-7
Draft General Plan - Land Use - Noise Compatibility Guidelines**

Land Use Category	Exterior Noise Exposure (dBA CNEL)			
	60	65	70	75
Research & Development				50

**Table 3.10-7
Draft General Plan - Land Use - Noise Compatibility Guidelines (continued)**

	Compatible	Indoor Uses	Standard construction methods should attenuate exterior noise to an acceptable indoor noise level. Refer to Section I
		Outdoor Uses	Activities associated with the land use may be carried out.
	Conditionally Compatible	Indoor Uses	Building structure must attenuate exterior noise to the indoor noise level indicated by the number for occupied areas. Refer to Section I.
		Outdoor Uses	Feasible noise mitigate techniques should be analyzed and incorporated to make the outdoor activities acceptable. Refer to Section I.
	Incompatible	Indoor Uses	New construction should not be undertaken.
		Outdoor Uses	Severe noise interference makes outdoor activities unacceptable.

Notes: Single Unit residential is also referred to as single family residential. Multiple Unit residential is also referred to as multi-family residential.

**Table 3.10-8
Land Use Compatibility for Community Noise Environment**

Land Use Category	Community Noise Exposure <i>L_{dn}</i> or <i>CNEL</i> , dB					
	55	60	65	70	75	80
Residential - Low Density Single Family, Duplex, Mobile Homes	[Light gray bar from 55 to 70]					
Residential - Multi. Family	[Light gray bar from 55 to 65]					
Transient Lodging - Motels, Hotels	[Light gray bar from 55 to 65]					
Schools, Libraries, Churches, Hospitals, Nursing Homes	[Light gray bar from 55 to 70]					
Auditoriums, Concert Halls, Amphitheaters	[Light gray bar from 55 to 70]					
Sports Arena, Outdoor Spectator Sports	[Light gray bar from 55 to 75]					
Playgrounds, Neighborhood Parks	[Light gray bar from 55 to 70]					
Golf Courses, Riding Stables, Water Recreation, Cemeteries	[Light gray bar from 55 to 75]					
Office Buildings, Business Commercial and Professional	[Light gray bar from 55 to 70]					
Industrial, Manufacturing, Utilities, Agriculture	[Light gray bar from 55 to 70]					

<p>Normally Acceptable Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.</p>	<p>[Light gray bar]</p>
<p>Conditionally Acceptable New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.</p>	<p>[Medium gray bar]</p>
<p>Normally Unacceptable New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.</p>	<p>[Dark gray bar]</p>
<p>Clearly Unacceptable New construction or development should generally not be undertaken.</p>	<p>[Black bar]</p>

Source: State of California 1998.

3.10.2 Thresholds of Significance

A significant impact could occur if implementation of the General Plan:

- Results in exposure of noise-sensitive land uses to future noise levels which exceed those established in the adopted *General Plan and Progress Report*, community plans, noise ordinance, Airport Land Use Compatibility Plans (ALUCPs), or applicable standards of other agencies;
- Results in a substantial increase in the existing ambient noise levels; or,
- Results in increased land use incompatibilities associated with noise.

3.10.3 Impact Analysis

Could implementation of the Draft General Plan result in exposure of noise-sensitive land uses to future noise levels which exceed those established in the adopted General Plan, community plans, noise ordinance, ALUCPs, or applicable standards of other agencies?

Sensitive noise land uses are, in general, those areas of human habitation or substantial use where the intrusion of noise has the potential to adversely impact the occupancy, use, or enjoyment of the environment. Noise-sensitive land uses include, but are not necessarily limited to residential, hospitals, nursing facilities, intermediate care facilities, educational facilities, libraries, museums, places of worship, child care facilities, and certain types of passive recreational parks and open space.

Construction Impacts

Construction activities related to implementation of the Draft General Plan would potentially generate short-term noise impacts to noise-sensitive land uses located adjacent to construction sites. As outlined in **Table 3.10-7**, some construction activities have the potential to produce noise in excess of 75 dB(A) L_{eq} , and could therefore be potentially significant if their activity is heard by sensitive receptors. However, the City regulates noise associated with construction equipment and activities through enforcement of noise ordinance standards (e.g., days of the week and hours of operation) and imposition of conditions of approval for building or grading permits.

The Draft General Plan contains a policy limiting the impact of non-emergency construction activities in residential areas in relationship to the noise ordinance. However the City could permit construction at night where noise levels could be in excess of 75 dB(A) on limited basis where nighttime construction is deemed necessary and the construction is found to be in the public interest. Therefore, noise related to construction activities associated with implementation of the Draft General Plan could have a significant impact. Strict enforcement of the City Noise Ordinance and other applicable regulations, limitation of construction hours, implementation of Draft General Plan policies, and limiting after-hours construction to only highly necessary cases would reduce any construction noise impacts. Because the degree of impact and applicability, feasibility, and success of these measures cannot be adequately known for each specific project

at this program level of analysis, the program level impact related to noise remains significant and unavoidable.

Transportation Impacts

Population growth and increased economic and development activity in the City would increase during implementation of the General Plan. Based on adopted community plan land use, SANDAG has forecasted that up to 119,800 additional housing units in the City could be built by 2030 as well as additional non-residential development that would provide approximately 198,000 additional jobs. Most of the new development will occur in existing developed communities consistent with adopted community plans.

That increase has the potential to increase noise generated by various transportation modes affecting both human and wildlife receptors. The Draft General Plan policies provide a framework for supporting future development in existing areas where the urban environment already sustains a higher noise level than less developed areas and would avoid major increases in noise in those less developed areas. Increases in goods movement call for increased traffic in several modes, particularly rail, air cargo, and trucks. The Draft General Plan includes policies for distancing or buffering future noise-sensitive land uses from existing or future industrial uses. The Draft General Plan policies seek to reconcile the effect of increased noise by encouraging more efficient land use, congestion management, transportation, and goods movement policies. As part of future community plan updates, the City will include noise studies to analyze existing and projected noise levels for transportation related noise.

Transportation system improvements occurring during implementation of the Draft General Plan could result in either beneficial or adverse noise impacts. For example, implementation of some of the transportation improvements associated with the Draft General Plan could be beneficial by reducing the rate of increase of the number of vehicles traveling the roadway system in the City, but also could be adverse by increasing the rate of use of buses and trains, which can generate more noise per vehicle.

One of the tools used by the City to evaluate the impact from noise on development projects is the “Significance Determination Thresholds,” which provide consistent guidance to the City as to when projects are considered to have significant environmental impacts. The Significance Determination Thresholds are included as Appendix A of the City Land Development Manual. The noise section of these Thresholds address interior and exterior noise impacts from traffic generated noise by providing the general thresholds of significance for uses affected by traffic noise.

Motor Vehicle Traffic Noise

The SANDAG forecasted increase in housing units and jobs by 2030 is expected to lead to an increase in the level of motor vehicle traffic as addressed in PEIR Section 3.15. An increase in motor vehicle traffic has the potential to increase motor vehicle traffic related noise. It is likely that the greatest increase in motor vehicle traffic noise will be on interstate freeways, state highways, and major roadways in the City. Development of mixed-use land uses or multi-family residential land uses on transit corridors along major roadways in existing urban areas could also

expose more people to the higher levels of noise generated by higher traffic volume roadways. Thus, transportation improvements associated with the Draft General Plan could create noise impacts on noise-sensitive land uses.

The Draft General Plan includes policies to minimize vehicle traffic noise impacts on noise-sensitive land uses. These policies encourage planning of noise-compatible land uses, traffic control measures to slow traffic and thus reduce vehicle traffic noise in noise-sensitive locations, the provision of alternative transportation modes, rerouting of truck routes, landscaping and use of other design features, and enforcement of the state vehicle code to ensure that vehicles are not producing excessive noise. An increase in motor vehicle traffic would yield a proportionate increase in noise in areas adjacent to freeways, state highways, and major roads in the City and thus could create a significant impact on sensitive noise land uses.

Transit Impacts

The Regional Transportation Plan – MOBILITY 2030 (RTP) produced by SANDAG includes major transit improvements designed to improve and expand services and increase transit ridership. The regional policies and actions, which could affect the noise environment in the City, include the following:

- Expansion of the transit system to areas currently not being served;
- Improved and increased service for the San Diego to Los Angeles rail corridor;
- Increased frequency of bus service in urban areas; and
- Increased construction of residential based transit centers.

Transportation improvements associated with the Draft General Plan could create noise impacts on noise-sensitive land uses. Impacts include the potential for future development within the transit vehicle noise areas. Development of mixed-use land uses or multi-family residential land uses on transit corridors and light rail and bus rapid transit stations could also expose more people to the higher levels of noise generated by higher traffic volume transit corridors. Additional residential development within these areas would increase the number of land uses exposed to noise levels that could potentially exceed acceptable levels and thus could create a significant impact on sensitive noise land uses.

Alternate Modes/Intermodal Impacts

The promotion and increased use of bicycles as an alternative mode of transportation in the City would not create noise impacts. The change in traffic volumes on major roadways due to an increase in bicycle trips would not be great enough to cause a substantial decrease in noise levels.

Aircraft Impacts

Future land use planning within airport influence areas should ensure the compatibility of new development with airport operations, and phase out incompatible uses to the extent possible. With the exception of SDIA, the Draft General Plan contains policies limiting future residential uses in airport influence areas above the 65 dB CNEL. The adopted General Plan Land Use-Noise Level Compatibility Standard allows residential use up to the 65 dBA CNEL. The state general plan guidelines identify residential use above the 75 dBA CNEL as not being compatible.

Given the location of SDIA in the urban center of the City and the presence of existing residential uses and higher ambient noise levels, the Draft General Plan contains policies that would conditionally allow future multi-family residential uses and residential mixed uses above the projected 65 dB CNEL. The policies that would conditionally allow future multi-family residential uses and residential mixed uses above the projected 65 dB CNEL in areas with existing residential uses and consistent with adopted community plans and the Airport Land Use Compatibly Plan for SDIA. This could result in an impact to people living in future residential uses near SDIA.

The adopted Airport Land Use Compatibly Plans for each airport contain policies and criteria that the City is required to implement or overrule the ALUC. For residential uses and other noise sensitive uses located in areas above the 60 dB CNEL, the ALUCPs contain policies that place conditions, such as sound attenuation to reduce interior noise levels to 45 dB. The adopted ALUCP for Brown Field, Montgomery Field, and MCAS/NAS Miramar contain policies that limit residential uses above the 65 dB CNEL. The adopted ALUCP for SDIA contains polices that conditionally allows residential uses up to 85 dB CNEL. Where developments are conditionally allowed in areas above the 60 dB CNEL, the ALUCPs require avigation easements to ensure that future residential and other noise sensitive development surrounding airports are compatible for noise. Specifically for noise, avigation easements provide the airport operator the right to subject the property to noise associated with normal airport activity. An increase in aircraft traffic would yield a proportionate increase in noise and vibration in areas adjacent to airports and thus could create a significant impact on sensitive noise land uses.

Rail Impacts

Intercity and Commuter

Expanded intercity and commuter rail service is expected to reduce traffic demand on freeways and major arterials. These decreases in traffic volumes would not significantly decrease noise levels from the freeways, because the freeways will retain a large volume of trucks and passenger vehicles traveling at high speeds. Additionally, if rail service is located in the same corridor as the freeway, localized noise levels could remain high or even increase at certain locations. In addition, reductions in traffic volumes could lead to slight increases in noise as traffic speeds increase. None of these factors are expected to make major differences in noise volumes in heavily traveled corridors, since increases in vehicle traffic volumes of

approximately 50 percent would be required to make a 3 dB difference in traffic noise, which is generally the level that is perceived by the human ear.

Freight Rail Impacts

Data provided by SANDAG indicate that reopening of the San Diego and Arizona Eastern Railway (SD&AE) will result in elimination of up to 20,000 trucks annually from the highways in the San Diego region after 10 years of operation (SANDAG 1999). Rehabilitation of the 70-mile Desert Line portion of the SD&AE would extend freight service between San Diego and Tecate to the Imperial Valley. To the extent that truck trips are removed from highways as a result, noise generated by trucks would decline or not increase as rapidly.

The RTP also includes actions to encourage more efficient intermodal transportation of goods. The number of freight trains currently operating each day in San Diego is dependant upon the demands of the industries using rail services and can vary greatly from day to day. Currently, the Burlington Northern and Santa Fe (BN&SF) and the San Diego and Imperial Valley (SDIV) railroads transport rail freight in the San Diego region. Currently, the BN&SF runs approximately four freight trains per day between San Diego and the Greater Los Angeles area (two in each direction). Locally, increases in rail transit tonnage would increase the number of freight trains. However, these trains would likely operate on an as needed basis and would not have a fixed schedule. Therefore, noise levels and frequency of pass-bys would continue to vary greatly from day to day. On some days, there may be no increase in freight train activity.

The Draft General Plan includes policies to minimize fixed-rail noise on sensitive land uses, though these policies are directed at noise receivers and cooperation with other agencies as the City does not build or maintain rail lines. These policies encourage site planning of noise-sensitive uses away from rail corridors, cooperation with other authorities to implement noise attenuation features on rail systems, establishing train horn “quiet zones”, and installing grade separation at existing roadway-rail grade crossings. An increase in train traffic would yield a proportionate increase in noise and vibration in areas adjacent to rail corridors and thus could create a significant impact.

Overall Transportation Impacts

Overall, there may be a significant impact on sensitive noise land uses as a result of transportation noise impacts from implementation of the Draft General Plan. The above policies, along with adherence to federal, state, and local noise regulations, serve to preclude or reduce significant impacts to a degree, but cannot guarantee that all future project level impacts will be avoided or mitigated to a level less than significant. Therefore, impacts associated with transportation noise are significant at the program level. Mitigation Framework Measures have been identified to reduce these program level transportation related noise impacts. Overall, because the degree of impact and applicability, feasibility, and success of these measures cannot be adequately known for each specific project at this program level of analysis, the program level impact related to noise remains significant and unavoidable.

Commercial, Mixed-Use, and Industrial Noise

The Draft General Plan allows for development of commercial and mixed-use residential land uses, which could result in the generation of unacceptable noise levels. The Draft General Plan policies encouraging mixed-use development can allow for significant intermittent or continuous operational noise impacts on sensitive receptors. Noise generated commercial activity impacts to adjacent or aboveground floor residential uses in a mixed-use development include operations, maintenance, truck deliveries, vehicular traffic and high pedestrian traffic.

The Draft General Plan allows for development of industrial land uses, which could result in the generation of unacceptable noise levels. Furthermore, co-location policies of the Draft General Plan that could allow the development of residential uses adjacent to industrial uses could exacerbate the potential for noise impacts on sensitive receptors. The policies encouraging co-location development could allow for significant intermittent or continuous operational noise impacts on sensitive receptors. The Draft General Plan also contains policies encouraging commercial and industrial operators to utilize practices to reduce noise impacts to adjacent noise sensitive uses. Noise generated industrial activity impacts to adjacent residential uses include operations, maintenance, truck deliveries, and vehicular traffic.

These impacts are potentially significant and unavoidable. Draft General Plan policies support limits on the hours of operation, require sound attenuation methods, or otherwise reduce the level of impact of these noise sources. These policies, along with adherence to federal, state, and local noise regulations, serve to preclude or reduce significant impacts to a degree, but cannot guarantee that all future project level impacts will be avoided or mitigated to a level less than significant. Because the degree of impact and applicability, feasibility, and success of these measures cannot be adequately known for each specific project at this program level of analysis, the program level impact related to commercial and industrial noise remains significant and unavoidable.

Event Noise

The Draft General Plan acknowledges the occurrence of events, whether they are regular events held at the downtown Ballpark or Qualcomm Stadium, or special civic or entertainment events held at various locations. These events have the potential to generate significant noise levels that would affect nearby sensitive receptors and land uses. The Draft General Plan contains policies to address these impacts. These policies, along with adherence to federal, state, and local noise regulations, serve to preclude or reduce significant impacts to a degree, but cannot guarantee that all future project level impacts will be avoided or mitigated to a level less than significant. Therefore, impacts associated with event noise are significant at the program level. Mitigation Framework Measures have been identified to reduce these program level impacts. Because the degree of impact and applicability, feasibility, and success of these measures cannot be adequately known for each specific project at this program level of analysis, the program level impact related to event noise remains significant and unavoidable.

Could implementation of the Draft General Plan result in a substantial increase in the existing ambient noise levels?

Population growth and increased economic and development activity in the City would increase during implementation of the General Plan. Based on adopted community plan land use, SANDAG has forecasted that up to 119,800 additional housing units in the City could be built by 2030 as well as additional non-residential development that would provide approximately 198,000 additional jobs. Most of the new development will occur in existing developed communities consistent with adopted community plans.

That increase has the potential to increase noise generated by various transportation modes, stationary sources and related activities affecting both human and wildlife receptors. The Draft General Plan policies provide a framework for supporting future development in existing areas where the urban environment already sustains a higher noise level than less developed areas and would avoid major increases in noise in those less developed areas. Increases in goods movement call for increased traffic in several modes, particularly rail, air cargo, and trucks. The Draft General Plan includes policies for distancing or buffering future noise-sensitive land uses from existing or future industrial uses. The Draft General Plan policies seek to reconcile the effect of increased noise by encouraging more efficient land use, congestion management, transportation, and goods movement policies.

These policies, along with adherence to federal, state, and local noise regulations, serve to preclude or reduce significant impacts to a degree, but cannot guarantee that all future project level impacts will be avoided or mitigated to a level less than significant. Therefore, impacts associated with increase ambient noise are significant at the program level. The General Plan PEIR identifies Mitigation Framework Measures to reduce these program level impacts. Because the degree of impact and applicability, feasibility, and success of these measures cannot be adequately known for each specific project at this program level of analysis, the program level impact related to ambient noise remains significant and unavoidable.

Could implementation of the proposed General Plan result in increased land use incompatibilities associated with noise?

The Draft General Plan proposes a change in the Land Use – Noise Compatibility Guidelines (**Table 3.10-7**) from that currently adopted by the City of San Diego in the 1979 *General Plan and Progress Guide* (**Table 3.10-6**) and the California Environmental Quality Act (CEQA) Significance Determination Thresholds. The revised chart more closely resembles that established by the state of California (**Table 3.10-8**) and creates a “conditionally compatible” category, which permits building of a particular use in an exterior noise exposure environment with the condition of noise attenuation measures that would bring noise experienced by receptors down to specific, non-offensive levels. It furthermore expands upon, more clearly describes, and more logically groups the land uses.

As described above, the implementation of the Draft General Plan could potentially locate multi-family residential land uses in areas experiencing 65 dBA CNEL or higher noise levels (except for aircraft noise in the Brown Field, Montgomery Field, MCAS Miramar Airport Influence Areas), and therefore subject them to a higher level of existing and future noise. New development would be subject to building development standards, the City’s Noise Ordinance, Title 24, and other regulations.

Policies are identified in the Draft General Plan that will help to reduce the exposure of residential and other noise-sensitive land uses to excessive noise. Land use compatibility is addressed through policies aimed at providing noise attenuation to reduce interior noise levels, buffers between incompatible land uses, assuring the appropriateness of proposed developments relative to noise levels, and limiting noise-sensitive land uses in areas exposed to high levels of noise. Noise-generating land uses like commercial, industrial, mixed-use activity, or entertainment and events have specific policies directed at minimizing the exposure of noise generated from these land uses on nearby noise-sensitive land uses. These policies include encouraging noise attenuation structures in the design, limiting the hours of operation or truck deliveries, limiting outdoor activities that generate noise, and coordination of special events.

As described above, transportation noise could significantly increase with implementation of the Draft General Plan. The Airport Land Use Compatibility Plans provide policies for the orderly growth of future development in airport influence areas to ensure that there are no land use incompatibilities with airport operations, including excessive noise levels to safeguard the general welfare of the inhabitants and public within the vicinity of the airport. The projected airport noise contours for airports within the City as well as generalized planned land use based on adopted community plans are shown in **Figures 3.10-5, 3.10-6, and 3.10-7.**

The Draft General Plan contains policies that will minimize the impact of aircraft-generated noise on noise-sensitive land uses and receptors. These policies include limiting future residential uses in airport influence areas to the 65 dBA CNEL except for SDIA.

For SDIA, the Draft General Plan policies would conditionally limit future single-family residential uses to the 65 dBA CNEL and would conditionally limit multi-family and mixed-use residential uses in an environment up to 70 dBA CNEL. Although not normally compatible, the City would allow multi-family and mixed-use residential uses up to the 75 dBA CNEL in areas in areas surrounding SDIA with existing residential uses that are designated for multi-family or mixed-use residential consistent with adopted community plans and the Airport Land Use Compatibility Plan for SDIA if feasible mitigation measures can be implemented.

The generalized community plan land use for areas above the 70 dB CNEL projected noise contour for SDIA is shown on **Figure 3.10-5.** The adopted Downtown and Uptown community plans designate properties for multi-family and mixed-use residential uses above the 75 dBA CNEL. Within both of these communities, there are existing residential uses above the 75 dBA. The adopted ALUCP currently in place contains policies that conditionally allows residential uses up to the 85 dBA CNEL. **Figure 3.10-8** shows the adopted ALUCP noise contours for SDIA.

The Draft General Plan policies also encourage noise compatibility with land uses, discourage outdoor uses where airport noise impact levels are high, and encourage civilian and military airport operators to monitor noise and implement noise-reducing operation measures. Within the City, there are areas with existing residential uses where existing noise levels exceeds 70 dBA CNEL, however, these existing impacts would continue with or without implementation of the Draft General Plan. Although not normally compatible, multiple unit and mixed-use residential uses would be conditionally allowed up to the 75-dBA CNEL in areas affected primarily by

motor vehicle traffic noise with existing residential uses that are designated for multiple unit or mixed-use residential if feasible mitigation measures can be implemented.

The policies identified above, along with adherence to federal, state, and local noise regulations, serve to preclude or reduce significant impacts to a degree, but cannot guarantee that all future project level impacts will be avoided or mitigated to a level less than significant. Therefore, impacts associated with noise incompatibilities are significant at the program level. The General Plan PEIR identifies Mitigation Framework Measures to reduce these program level impacts. Because the degree of impact and applicability, feasibility, and success of these measures cannot be adequately known for each specific project at this program level of analysis, the program level noise impact related to land use incompatibilities remains significant and unavoidable.

3.10.4 Mitigation Framework

Goals, policies, and recommendations enacted by the City combined with the federal state and local regulations described above provide a framework for developing project level noise protection measures for future discretionary projects. The City's process for the evaluation of discretionary projects includes environmental review and documentation pursuant to CEQA as well as an analysis of those projects for consistency with the goals, policies and recommendations of the General Plan.

The City's process for evaluating ministerial projects only involves the use of adopted standards, codes, and regulations and is exempt from CEQA. As part of the City's General Plan implementation program, steps will be taken to amend the applicable standards, codes, and regulations needed to implement the Draft General Plan policies and noise guidelines. However, the existing standards, codes, and regulations have the potential to permit ministerial projects that may not be consistent with the Draft General Plan policies and noise guidelines prior to future amendments and impacts would be considered significant and unavoidable.

In general, implementation of the Draft General Plan policies and noise guidelines would preclude significant noise impacts. Compliance with the standards, codes, and regulations is required of all projects and is not considered to be mitigation. However, it is possible that for certain projects, adherence to the regulations may not adequately attenuate noise, and such projects would require additional measures to avoid or reduce significant noise impacts. These additional measures would be considered mitigation.

For future discretionary projects requiring mitigation (i.e., measures that go beyond what is required by existing regulations), site-specific measures will be identified that reduce significant project-level impacts to less than significant or the project level impact may remain significant and unavoidable where no feasible mitigation exists. Where mitigation is determined to be necessary and feasible, these measures will be included in a Mitigation Monitoring and Reporting Program (MMRP) for the project.

General measures that may be implemented to preclude impacts are summarized below. These measures may be updated, expanded and refined when applied to specific future projects based

on project-specific design and changes in existing conditions, and local, state and federal laws. Mitigation Framework Measures include:

- Future development projects in areas where the existing or future noise level exceeds or would exceed the “compatible” noise level thresholds as indicated in the Draft General Plan Land Use – Noise Compatibility Guidelines (**Table 3.10-7**) must submit an acoustical study consistent with Acoustical Study Guidelines (Table NE-4 in the Draft General Plan), so that appropriate noise mitigation measures are included in the project design to meet the General Plan noise guidelines.
- Future projects must be sited and designed in a manner that avoids noise impacts to noise-sensitive land uses (e.g., residences, hospitals, schools, and libraries) and sensitive receptors. Prior to approval of any entitlement for a future project, the City will identify any noise impacts and measures to reduce and avoid such impacts in accordance with the City’s Noise Ordinance and state regulations. This may require preparation of a noise analysis. Typical noise attenuation methods include:
 - ***Reducing the source noise.*** Required measures to reduce noise source could include: structure, site, vehicle, and engine design; engine mufflers; traffic calming and management techniques; quieter machinery, and noise limitations on hours of operation.
 - ***Interrupting the noise path.*** Required measures to interrupt the noise path could include the strategic placement of structures, walls, and berms to minimize noise. Solid barriers and structures large enough to block the line of site between the noise source and receiver are often required. The strategic shape and orientation of buildings can also help shield noise sensitive uses from noise sources.
 - ***Separating the noise source.*** Required measures to separate the noise source could include site planning techniques that incorporate spatial buffers between the noise source and receiver and locating noise compatible uses such as vehicle parking, open space, and commercial uses between the noise source and noise sensitive area.
 - ***Insulating the noise receiver.*** Required measures to insulate the noise receiver include acoustical structures, enclosures or construction techniques to abate excessive noise levels. Required techniques may include sound rated windows, doors, and wall construction materials as well as insulation. **Table 3.10-9** identifies typical attenuation methods that can be used to insulate structures and the potential noise level reduction with the methods.

**Table 3.10-9
Typical Noise Attenuation Methods to Insulate the Noise Receiver**

Noise Level Reduction	Typical Mitigation Methods
	<i>Mitigation 1, 2, and 3</i>
15-20 dBA	1. Air conditioning or mechanical ventilation. 2. Double-paned glass. 3. Solid core doors with weather stripping and seals.
	<i>Mitigation 1, 2, and 3 plus</i>
20-25 dBA	4. Stucco or brick veneer exterior walls or wood siding w/one-half inch thick fiberboard underlayer. 5. Glass portions of windows/doors not to exceed 20 percent. 6. Exterior vents facing noise source shall be baffled.
	<i>Mitigation 1 through 6 plus</i>
25-30 dBA	7. Interior sheetrock of exterior wall attached to studs by resilient channels or double walls. 8. Window assemblies, doors, wall construction materials, and insulation shall have a lab-tested STC rating of 30 or greater.

- Where uses, particularly habitable structures, are planned near noise-generating sources, future projects may be required to use a combination of the following architectural treatments or alternative methods to bring interior noise levels to below 45 dBA or 50 dBA for specified uses as indicated in **Table 3.10-7**:
 - Installation of sound barriers (masonry walls or walls with earth berms) between habitable space and noise sources,
 - Installation of double-paned or similar sound rated windows,
 - Provision of sound insulating exterior walls and roofing systems,
 - Location or design of attic vents to minimize sound propagation into structures,
 - Provision of forced-air ventilation systems,
 - Use of building setbacks to increase distance between noise sources and receivers,
 - Placing noise tolerant land uses such as parking lots, maintenance facilities, and utility areas between noise sources and receptors, or
 - Orienting or clustering buildings to shield outdoor spaces from noise sources.
- Future development projects that are located in an Airport Influence Area must use feasible noise attenuation methods in order to meet acceptable interior noise levels for the use and provide avigation easements consistent with adopted Airport Land Use Compatibility Plans. Prior to approval of any entitlement for a future project, the City will identify any noise impacts and measures to reduce such in accordance with City, Airport Land Use Commission, state, and federal regulations.
- All non-emergency construction activity for future projects must comply with the limits (maximum noise levels, hours and days of activity) established in State and City noise regulations (Title 24 California Code of Regulations, San Diego Development Code and Chapter 5, Article 9.5 of the Municipal Code). Proposed industrial or commercial projects located near residential areas must demonstrate that the project, when constructed, will meet City noise reduction requirements.

3.10.5 Significance of Impact with Mitigation Framework

Noise impacts will remain significant and unavoidable at the program level.

Notes and References

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- 1973 “Fundamentals and Abatement of Highway Traffic Noise.” Report Number PB-222-703. Prepared by Bolt, Beranek, and Newman, Inc. June.

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- 1991 Handbook of Acoustical Measurements and Noise Control. Third Edition. McGraw-Hill, Inc. San Francisco.

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<http://www.hud.gov/offices/cpd/energyenviron/environment/resources/guidebooks/noise/index.cfm>

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