

4.4 Noise

Existing and future roadway noise levels were modeled based on traffic data and forecasts discussed in Section 4.2. Roadway Noise Model Worksheets (Wieland Associates, November 2004) are provided in Volume II, Appendix D of this EIR.

4.4.1 Existing Conditions

The Grantville Redevelopment Project Area is located in an urbanized area of the City of San Diego. The primary sources of noise within the Project Area are caused by vehicular traffic on the roadways within and adjacent to the Project Area and by day-to-day operations of existing uses including commercial and industrial operations and sand and gravel operations. The Project Area also experiences noise events as a result of periodic overflight of aircraft.

4.4.1.1 *Effects of Noise on People*

Noise is generally defined as an unwanted sound. Whether a sound is considered a noise depends on the source of the sound, the loudness relative to the background noise, the time of day, the surroundings, and the listener. The difference in people's reaction to different noises or sounds is explained by the perceived noisiness, or how undesirable the sound is to the people in the vicinity of the source. An unwanted sound may be extremely irritating although it is not unreasonably loud. The areas most vulnerable to the harmful effects of sound are residential locations, particularly at night. All human activities can be adversely affected by excessive noise.

Noise can result in speech interference, and disrupt activities at home and work, sleep patterns, and recreational pursuits. The long-term effects of excessive noise exposure are physical as well as psychological. Physical effects may include headaches, nausea, irritability, constriction of blood vessels, changes in heart and respiratory rate, and increased muscle tension. Prolonged exposure to high noise levels may result in hearing damage. Psychological effects may result from the stress and irritability associated with a change in sleeping patterns due to excessive noise.

4.4.1.2 *Measures of Noise Level And Noise Exposure*

The standard unit of measurement of the loudness of sound is the decibel (dB). The decibel measurement is logarithmic; meaning each increase in one decibel is a tenfold increase in the level of noise. Typically, the quietest environmental conditions (extreme rural areas with extensive shielding) yield sound levels of approximately 20 dB. Normal speech has a sound level of approximately 60 dB. Sound levels above 120 dB roughly correspond to the threshold of pain and would be associated with sources such as jet engine noise. The minimum change in sound level that the human ear can detect is approximately 3 dB. A change in sound level of 10 dB is usually perceived by the average person as a doubling (or halving) of the sounds loudness.

Because the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The method commonly used to quantify environmental sounds consists of determining all of the frequencies of a sound according to a weighting

system that reflects the nonlinear response characteristics of the human ear. This is called “A” weighting, and the decibel level measured is called the A-weighted sound level (or dBA). Community noise levels are measured in terms of the A-weighted decibel.

4.4.1.3 *Community Noise Equivalent Level (CNEL)*

A given level of noise may be more or less tolerable depending on the duration of exposure experienced by an individual. There are numerous measures of noise exposure, which consider not only the A-weighted sound level variation of the noise but also the duration of the disturbance. The State Department of Aeronautics and the California Commission of Housing and Community Development have adopted the community noise equivalent level (CNEL) measure of noise exposure. This measure considers an energy averaged A-weighted noise level for the evening hours, 7:00 p.m. to 10:00 p.m. increased by 5dB, and the late evening and early morning hourly noise levels, 10:00 p.m. to 7:00 a.m., increased by 10dB. The daytime noise levels are combined with these weighted levels and then averaged, on an energy basis, to obtain a CNEL value.

4.4.1.4 *City of San Diego General Plan*

Table 4.4-1 depicts the land use-noise compatibility matrix of the City of San Diego General Plan. This matrix identifies various land use types and the average CNEL that is considered compatible for that use. Compatible is defined as the average noise level such that indoor and outdoor activities associated with the land use may be carried out with essentially no interference from noise.

4.4.1.5 *City of San Diego Noise Ordinance*

Table 4.4-2 depicts the City of San Diego noise standards for various land use types. The Noise Ordinance states that “It shall be unlawful for any person to cause noise by any means to the extent that the one-hour average sound level exceeds the applicable limit given in Table 4.4-2, at any location in the City of San Diego on or beyond the boundaries of the property on which the noise is produced. The noise subject to these limits is that part of the total noise at the specified location that is due solely to the action of said person.”

Construction noise in the City of San Diego is regulated by Division 4, Section 59.5.0404 of the Municipal Code, which states that:

- It shall be unlawful for any person, between the hours of 7:00 PM of any day and 7:00 AM of the following day, or on legal holidays as specified in Section 21.04 of the San Diego Municipal Code, with exception of Columbus Day and Washington's Birthday, or on Sundays, to erect, construct, demolish, excavate for, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator.
- It shall be unlawful for any person, including the City of San Diego, to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12-hour period from 7:00 AM to 7:00 PM.

TABLE 4.4-1
City of San Diego Noise Land Use Compatibility Chart

LAND USE	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.

Source: City of San Diego (1989).

TABLE 4.4-2
Sound Level Limits

Land Use Zone	Time of Day	One-Hour Average Sound Level (decibels)
All R-1 residential	7 AM to 7 PM	50
	7 PM to 10 PM	45
	10 PM to 7 AM	40
All R-2 residential	7 AM to 7 PM	55
	7 PM to 10 PM	50
	10 PM to 7 AM	45
R-3, R-4, and all other residential	7 AM to 7 PM	60
	7 PM to 10 PM	55
	10 PM to 7 AM	50
All commercial	7 AM to 7 PM	65
	7 PM to 10 PM	60
	10 PM to 7 AM	60
Manufacturing all other industrial including agriculture and extractive industry	Anytime	75

Source: City of San Diego Municipal Code, Chapter 5 – Public Safety, Morals, and Welfare, Article 9.5 – Noise Abatement and Control, Division 4 – Limits (59.5.0404).

4.4.1.6 State Of California Noise Insulation Standards

The California Commission on Housing and Community Development officially adopted the Noise Insulation Standards (Title 24) in 1974. The regulations became effective on August 22, 1974. The ruling states the “interior CNEL attributable to exterior sources shall not exceed an annual CNEL of 45 dB in any habitable room.” Additionally, the Commission specified that multi-family residential buildings or structures to be located within exterior CNEL contours of 60 dB or greater of an existing or adopted freeway, expressway, parkway, major street, thoroughfare, railroad, rapid transit line, or industrial noise source shall require an acoustical analysis showing that the building has been designed to limit intruding noise to the level prescribed (interior CNEL of 45 dB).

4.4.1.7 Existing Noise Levels

The primary and most consistent noise in a majority of the Project Area is generated by vehicular traffic. Other noise generators in the Project Area include the commercial, industrial, and sand and gravel extraction land uses. Table 4.4-3 provides the ambient noise levels measured at four locations within the Project Area. Figure 4.4-1 depicts the location of the ambient noise level measurement locations. Location 1 is located on the southern portion of Subarea B within an industrial land use. Residential land uses are nearby and to the south. Location 2 is located on the eastern side of Subarea C within a front yard of a residential unit. Commercial uses within Subarea C are located adjacent and to the south. Location 3 is located in the central portion of Subarea A along Mission Gorge Road within a commercial/office land use. Location 4 is located in the southern portion of Subarea A in a parking lot adjacent to Alvarado Canyon Road within a commercial/office land use. As identified in Table 4.4-3, the lowest ambient noise level of 65.8 dB(A) was measured at location 3 and the highest ambient noise level of 74.4 dB(A) was measured at location 4.

TABLE 4.4-3
Ambient Noise Level Measurements

Monitoring Locations	Measured Noise Levels, Leq (dB(A))
#1 – 6955 Mission Gorge Road, adjacent to front yard	71.3
#2 – 5205 Waring Road, front yard	67.1
#3 – 6206 Mission Gorge Road, front yard	65.8
#4 – In parking lot adjacent to 4460 Alvarado Canyon Road	74.4

Note: Leq is the equivalent (i.e., average) noise level during the measurement period.
Source: Wieland Associates, 2004

Existing roadway noise levels were modeled based on existing traffic levels on Project Area roadways, as discussed in Section 4.2. Table 4.4-4 summarizes the existing vehicular noise levels at 50 feet from the centerline of major roadways serving the Project Area. Streets with the highest volumes of traffic generate the highest noise levels.

TABLE 4.4-4
Existing Roadway Noise Levels

Road Segments	Noise Level (50 Feet from near lane centerline, CNEL)
Friars Road	
I-15 Northbound ramps to Rancho Mission Road	75.0
Rancho Mission Road to Santo Road	74.0
Fairmount Avenue	
I-8 Eastbound ramp to Camino Del Rio North	74.0
Mission Gorge Road	
Mission Gorge Place to Twain Avenue	67.0
Twain Avenue to Vandever Avenue	66.5
Friars Road to Zion Avenue	72.5
West of Princess View Drive	70.0
West of Jackson Drive	71.0
Waring Road	
Zion Avenue to Twain Avenue	66.5
South of Orcutt Avenue	66.5

Source: Wieland Associates, 2004

Figure 4.4-2 depicts the roadway noise contour distances to the 60dBA, 65dBA, 70dBA, and 75dBA in the Project Area. Through the central portion of Subarea A, along Mission Gorge Road, the noise level at 50 feet from the near lane centerline ranges from a low of 66.5dBA to a high of 72.0dBA. The existing land uses in this area consist of commercial and industrial. Based on City of San Diego noise standards, the commercial and industrial land uses fronting Mission Gorge Road currently experience noise levels below the maximum acceptable exterior noise level of 75dBA.

In Subarea B, along Mission Gorge Road, the noise level at 50 feet from the near lane centerline ranges from a low of 70.0dBA to a high of 71.0dBA. Industrial land uses dominate this area and based on City noise standards, the industrial land uses experience noise levels below the City's noise standard of 75dBA for industrial uses. It should be noted that from Jackson Drive west, through Subarea B to Zion Avenue, there are pockets of residential dwelling units (not included in the Project Area) that are currently exposed to noise levels above the City's exterior noise standard of 65dBA.

In Subarea C, along Waring Road, the noise level at 50 feet from the near lane centerline is 66.5dBA. Based on City of San Diego noise standards, the commercial land uses fronting Waring Road currently experience noise levels below the maximum acceptable exterior noise level of 75dBA. The existing park and school uses are currently exposed to noise levels that slightly exceed the City's exterior noise standard of 65dBA. The residential dwelling units located adjacent to Subarea C are currently exposed to noise levels above the City's exterior noise standard of 65dBA.

4.4.1.8 Stationary Noise Sources

Commercial, industrial, sand and gravel extraction, residential, schools, and public services generate noise within the Project Area. Stationary noise sources can be generated by delivery vehicles, communication systems (e.g., a drive-thru restaurant speaker), car alarms, car door shutting, and mechanical equipment (e.g., air conditioning or heating units).

Sand and Gravel Extraction. In Subarea B, a sand and gravel extraction operation creates noise during extraction and hauling activities. The noise level from this particular operation has not been measured, although, some of the activities below, such as truck deliveries and vehicles moving in parking areas represent an example of the type of noise that is generated at the sand and gravel operation.

Truck Deliveries. Light industrial and commercial uses often result in truck deliveries of goods to and from the site. Large 18 wheel trucks generate a maximum noise level of 86 dBA at a distance of 50 feet.

Vehicle Movements in Parking Areas. Parking lot activities primarily generate two sources of noise, break squeal and door slams. Of these, door slamming is the more intense source of noise. Car door slamming can result in maximum noise levels of approximately 86 dBA at 50 feet.

Trash Pickup and Compacting. Trash pickup and compacting are additional sources of noise near commercial uses. Typical noise levels range from 80 to 85 dBA at 50 feet during the raising, lowering and

compacting operations. A typical trash pickup takes approximately three minutes. The higher noise levels occur during about one-half of the operation.

Trash compactors. Many commercial uses require the use of on-site trash compactors. On-site trash compactors typically generate a noise level of 78 to 82 dBA at a distance of 50 feet.

Parking Lot Sweepers. Parking lot sweepers are typically required for commercial uses in order to reduce the potential for pollution-laden runoff from the site. Sweepers typically generate noise levels that range from 74 to 79 dBA at a distance of 50 feet.

School Yard. The level of noise generated by a school is greatest with respect to playground activity. Depending on the number of children, noise levels from a playground range between 62 dBA (100 children in a playground) to 72 dBA (900 children in a playground).

4.4.1.9 *Sensitive Receptors*

As identified in Section 4.1, Land Use, the Project Area predominantly consists of commercial, industrial, public service, and undeveloped land. Very few sensitive receptors exist in the Project Area. However, a majority of the Project Area is located within the Navajo community, which is comprised of primarily residential uses. These residential uses are located immediately adjacent to the Project Area. A large hospital and medical office complex is located east of the Friars Road/Mission Gorge Road intersection.

4.4.2 Impact Threshold

4.4.2.1 *Temporary Construction Noise*

Temporary construction noise that exceeds 75 dB during the 12-hour period from 7:00 a.m. to 7:00 p.m. at or beyond the property lines of any property zoned residential would be considered significant. Additionally, where temporary construction noise would substantially interfere with normal business communication, or affect sensitive receptors, such as day care facilities, a significant noise impact may be identified. This threshold is based on City of San Diego Municipal Code Section 59.5.0404.

4.4.2.2 *Traffic Noise*

The City of San Diego has established noise standards for various land uses. As identified in Table 4.4-5, the City's standard for the exterior noise level compatible with residential and other noise-sensitive uses is 65 dBA CNEL or less for usable outdoor living space (including patios, balconies, courtyards, seating areas, children's play areas, picnic and barbeque areas, and swimming pools). The maximum acceptable exterior noise level is 70 dBA CNEL for offices, churches, business and professional uses, and 75 dBA CNEL for commercial, retail, industrial, and outdoor spectator sport uses.

The California Administrative Code, Title 24 – Noise Insulation Standards, requires that the interior noise level of all new multi-family residences, hotels, and motels do not exceed 45 dBA CNEL. If the exterior noise level

TABLE 4.4-5
Traffic Noise Significance Thresholds
(dBA CNEL)

Structure or Proposed Use that would be impacted by Traffic Noise	Interior Space	Exterior Usable Space ¹	General Indication of Potential Significance
Single-family detached	45 dB	65 dB	Structure or outdoor usable area ² is less than 50 feet from the corner of the closest (outside) lane on a street with existing or future ADTs greater than 7500
Multi-family, schools, libraries, hospitals, day care, hotels, motels, parks, convalescent homes.	Development Services Department (DSD) ensures 45 dB pursuant to Title 24	65 dB	
Offices, Churches, Business, Professional Uses.	N/A	70 dB	Structure or outdoor usable area ² is less than 50 feet from the corner of the closest (outside) lane on a street with existing or future ADTs greater than or equal to 20,000
Commercial, Retail, Industrial, Outdoor Spectator Sports Uses.	N/A	75 dB	Structure or outdoor usable area ² is < 50 feet from the corner of the closest (outside) lane on a street with existing or future ADTs greater than or equal to 40,000

Notes: 1= If a project is currently at or exceeds the significance thresholds for traffic noise described above and noise levels would result in less than a 3 dB increase, then the impact is not considered significant.

2 =Exterior usable areas do not include residential front yards or balconies, unless the areas such as balconies are part of the required usable open space calculation for multi-family units.

Source: 1) City of San Diego Acoustical report Guidelines (December 2003) and 2) City of San Diego Progress Guide and General Plan (transportation Element).

exceeds 60 dBA CNEL, Title 24 requires the preparation of a site specific acoustical analysis showing that the proposed design will limit interior noise to 45 dBA CNEL or less. The City of San Diego also applies Title 24 standards to single-family residences. In addition, the City of San Diego Planning Department's policy is that interior noise levels for business and professional office uses are not to exceed 50 dBA CNEL.

4.4.2.3 Long-term Stationary Noise

Noise levels generated at the property line which exceed the City's Noise Ordinance Standards (see Table 4.4-1) would be considered a significant impact.

4.4.3 Impact

4.4.3.1 Construction Noise

The implementation of the proposed Redevelopment Project will result in additional private and public development within the Project Area, which will generate noise from construction activity. The construction phase of the redevelopment activities may require demolition of existing structures on the site, grading activities, and construction of new structures. The noise produced by the grading, excavation, demolition, and construction activity is not expected to be substantially annoying to the established residential areas adjacent to the Project Area. This will be the case for activities occurring during the daytime working hours (7:00 a.m. to 7:00 p.m.) specified in City of San Diego Municipal Code Section 59.5.0404. However, extended construction activity (after 7:00 p.m.) would cause considerable annoyance. Construction

activity also has the potential to impact sensitive receptors as well as certain businesses adjacent to individual construction sites. Table 4.4-6 identifies the typical construction equipment noise levels at a distance of 50 feet.

The potential noise levels that could be generated during demolition and construction for redevelopment activities is considered a significant, short-term impact. Implementation of Mitigation Measure N1 will reduce the impact to a level less than significant. Mitigation Measure N1 requires construction activities within the Project Area to comply with existing City regulations, including limits on hours of construction and maximum noise levels from construction equipment.

4.4.3.2 Traffic Noise Exposure

A version of the highway traffic noise prediction model developed by the Federal Highway Administration was used to model existing traffic noise levels and to predict future traffic noise levels. This model predicts noise levels based on traffic volumes, speeds, traffic mix, and distance from the roadway. Traffic volumes are obtained from the traffic report provided in Appendix B of this EIR, and as discussed in Section 4.2.

Table 4.4-7 summarizes the future noise levels from roadways serving the Project Area. Figure 4.4-3 depicts the modeled future noise contours along roadway segments within the Project Area. As shown, increased future traffic volumes will result in increased noise levels along some roadway segments. The net increase in noise levels over existing levels as a result of project-generated traffic is projected to range from no change to 3.5dBA CNEL at a distance of 50 feet from the near lane centerline along major streets. The largest increase in noise levels will occur along Mission Gorge Road where the noise level increase will be approximately 3.5 dBA CNEL between Mission Gorge Place and Twain Avenue and Twain Avenue and Vandever Avenue. Future noise levels will range between 66.5dBA CNEL to 76.5dBA CNEL within 50 feet of the near lane centerline within the Project Area.

Noise levels on roadways adjacent to most commercial and industrial uses would continue to be within acceptable levels. Assuming that existing land uses redevelop consistent with Community Plan land uses, there would be single-family and multi-family residential uses near I-8 as well as Mission Gorge Road. In terms of future residential development in the Project Area, the CNEL at 50 feet from the centerline of the roadway will be above the 65 CNEL threshold for residential uses, with noise levels ranging between 66.5 dBA CNEL and 76.5dBA CNEL. Future land use types, including residential have the potential to be exposed to traffic noise levels that currently exceed and in the future will continue to exceed City standards. Depending on the type and location of the particular redevelopment project, measures may need to be incorporated into the project to ensure both exterior and interior noise standards are met. In many cases, existing land uses that already experience noise levels that exceed City standards would be replaced with new uses that are constructed of modern building materials and meet modern code requirements, thereby the number of structures in the Project Area that experience interior noise levels above City standards would actually be reduced. However, because the Project Area is located adjacent to roadways that carry large volumes of traffic, future redevelopment activities may be exposed to noise levels that exceed City standards or Title 24 standards. Implementation of Mitigation Measure N2 will reduce the impact to a level less than significant. Mitigation Measure N2 requires redevelopment activities within the Project Area

TABLE 4.4-6
Construction Equipment Noise Levels

Equipment Item	Range of Noise Level at 50 Feet	Nominal Noise Level, Leq, at 50 Feet
Earthmoving		
Backhoes, 200 HP	71 to 93 dB(A)	85 dB(A)
Berm Machine, 100 HP	74 to 84 dB(A)	80 dB(A)
Dozers	72 to 96 dB(A)	86 dB(A)
Front Loaders, 300 HP	71 to 96 dB(A)	82 dB(A)
Grader	73 to 95 dB(A)	85 dB(A)
Paver	80 to 92 dB(A)	89 dB(A)
Roller, 180 HP	78 to 84 dB(A)	79 dB(A)
Scrapers	73 to 95 dB(A)	88 dB(A)
Tractors, 200 HP	72 to 96 dB(A)	84 dB(A)
Trencher, 80 HP	76 to 86 dB(A)	82 dB(A)
Truck/Trailer, 200 HP	70 to 92 dB(A)	82 dB(A)
Truck: 125 HP, 150 HP	76 to 85 dB(A)	80, 82 dB(A)
Materials Handling		
Concrete Mixer	70 to 90 dB(A)	85 dB(A)
Concrete Pump	74 to 84 dB(A)	82 dB(A)
Crane, Moveable: 50 HP, 200 HP, 400 HP	75 to 95 dB(A)	76, 80, 83 dB(A)
Derrick	86 to 89 dB(A)	88 dB(A)
Forklift, 40 HP	68 to 82 dB(A)	80 dB(A)
Side Boom, 200 HP	80 to 90 dB(A)	85 dB(A)
Water Truck, 500 HP	79 to 88 dB(A)	84 dB(A)
Stationary Equipment		
Boiler, 1600 HP	79 to 85 dB(A)	82 dB(A)
Compressors: 100 HP, 200 HP	68 to 87 dB(A)	78, 81 dB(A)
Generators: 20 HP, 400 HP, 1300 HP	69 to 81 dB(A)	74, 81, 84 dB(A)
Pumps: 25 HP, 200 HP, 350 HP	60 to 80 dB(A)	73, 76, 80 dB(A)
Impact Equipment		
Compactor, 20 HP	84 to 90 dB(A)	86 dB(A)
Jack Hammers	75 to 104 dB(A)	88 dB(A)
Pile Drivers (Peak Level)	90 to 104 dB(A)	101 dB(A)
Pneumatic Tools	82 to 88 dB(A)	86 dB(A)
Rock Drills	90 to 105 dB(A)	98 dB(A)
Steam Boiler (Pile Driver)	83 to 92 dB(A)	88 dB(A)
Other Equipment		
Saws	67 to 92 dB(A)	78 dB(A)
Vibrators	69 to 80 dB(A)	76 dB(A)
Welding Machines: 50 HP, 80 HP	76 to 85 dB(A)	80, 82 dB(A)

Source: Wieland Associates, 1999.

TABLE 4.4-7
Future Noise Levels (CNEL)

Segments	Future With Project (50 feet from Near Lane Centerline)	Change Due to Project
Friars Road		
I-15 Northbound ramps to Rancho Mission Road	76.5	+1.5
Rancho Mission Road to Santo Road	75.5	+1.5
Fairmount Avenue		
I-8 Eastbound ramp to Camino Del Rio North	76.5	+2.5
Mission Gorge Road		
Mission Gorge Place to Twain Avenue	70.5	+3.5
Twain Avenue to Vandever Avenue	70.0	+3.5
Friars Road to Zion Avenue	74.5	+1.5
West of Princess View Drive	72.0	+2.0
West of Jackson Drive	73.5	+2.5
Waring Road		
Zion Avenue to Orcutt Avenue	66.5	No change
South of Orcutt Avenue	67.0	+0.5

Source: Wieland Associates, 2004

to comply with applicable City regulations at the time projects are proposed, Title 24-Noise Insulation Standards, and implementation of site-specific building techniques to attenuate noise. The site-specific building techniques include using pedestrian oriented planning techniques, incorporating architectural design strategies which reduce the exposure of noise-sensitive receptors to vehicular noise, incorporating noise barriers or walls into development adjacent to noise sources, and modification of construction building elements as necessary to provide sound attenuation.

4.4.3.3 Stationary Noise

Redevelopment activities within the Project Area may result in increases in stationary noise as a result of operations of commercial, industrial, and public service uses. As described in the Existing Conditions section, there are many potential sources of stationary noise including, but not limited to, truck deliveries, parking lot activity, mechanical equipment, and street or parking lot cleaning. Noise compatibility of redevelopment activities will be addressed on a case-by-case basis as specific redevelopment activities are proposed. This review includes an assessment of compatibility with surrounding uses. Since redevelopment activities may include noise-generating land uses located in vicinity of noise-sensitive uses, this impact is considered significant. All redevelopment activities will need to comply with the City of San Diego sound level limits as identified in Table 4.4-1. Implementation of Mitigation Measure N2 will reduce the impact to a level less than significant.

4.4.4 Significance of Impact

4.4.4.1 Construction Noise

The potential noise generated during demolition and construction of future redevelopment activities is considered a significant, short-term impact.

4.4.4.2 Traffic Noise Exposure

The noise generated by roadways that carry large volumes of traffic may expose future redevelopment to noise levels that exceed City standards and/or Title 24 standards and is considered a significant impact.

4.4.4.3 Stationary Noise

Redevelopment activities within the Project Area may result in increases in stationary noise as a result of operations of commercial, industrial, and public service uses. Since redevelopment activities may include noise-generating land uses located in vicinity of noise-sensitive uses, this impact is considered significant.

4.4.5 Mitigation Measures

N1 Future redevelopment activities shall be subject to applicable City regulations regarding control of construction noise at the time the redevelopment activity is constructed. Applicable regulations include limiting the days and hours of construction and limiting the maximum noise levels from construction equipment. City regulations that address construction noise include:

- The construction hours for construction activities on sites adjacent to residences, schools, and other noise-sensitive uses shall be reviewed and adjusted as determined appropriate by the City.
- To the extent feasible, construction activities will be screened from adjacent noise-sensitive land uses, with solid wood fences or other barriers as determined appropriate by the City.
- All construction equipment, fixed or mobile, operating within 1,000 feet of dwelling unit(s), school, hospital, or other noise-sensitive land use shall be equipped with properly operating and maintained muffler exhaust systems.
- Stockpiling and vehicle staging areas shall be located as far as practical from occupied dwellings, classrooms, and other sensitive receptors.
- Construction routes shall be established where necessary and practicable to prevent noise impacts on residences, schools, and other noise-sensitive receptors.
- Where the City undertakes major street widening improvements where residential uses are adjacent to streets, the City evaluates the potential for noise exposure to residents and implementation of soundproofing as required.

N2 New development within the Project Area shall be subject to applicable City regulations at the time the redevelopment activity is proposed, Title 24 – Noise Insulation Standards, and implementation of site-specific building techniques. The site-specific building techniques include:

- Multi-family residential buildings or structures to be located within exterior CNEL contours of 60 dB or greater of an existing or adopted freeway, expressway, parkway, major street, thoroughfare, railroad, rapid transit line, or industrial noise source shall prepare an acoustical analysis showing that the building has been designed to limit intruding noise to the level prescribed (interior CNEL of 45 dB).

- Individual developments shall, to the extent feasible under a pedestrian oriented concept, implement site-planning techniques such as:
 - Increase the distance between the noise source and the receiver.
 - Using non-noise sensitive structures such as garages to shield noise- sensitive areas.
 - Orienting buildings to shield outdoor spaces from a noise source.
- Individual developments shall incorporate architectural design strategies, which reduce the exposure of noise-sensitive spaces to stationary noise sources (i.e., placing bedrooms or balconies on the side of the house facing away from noise sources). These design strategies shall be implemented based on recommendations of acoustical analysis for individual developments as required by the City to comply with City noise standards.
- Individual developments shall incorporate noise barriers, walls, or other sound attenuation techniques, based on recommendations of acoustical analysis for individual developments as required by the City to comply with City noise standards.
- Elements of building construction (i.e., walls, roof, ceiling, windows, and other penetrations) shall be modified as necessary to provide sound attenuation. This may include sealing windows, installing thicker or double-glazed windows, locating doors on the opposite side of a building from the noise source, or installing solid-core doors equipped with appropriate acoustical gaskets.

4.4.6 Conclusion

Implementation of Mitigation Measure N1 will reduce the short-term construction noise impact to a level less than significant.

Implementation of Mitigation Measure N2 will reduce the traffic noise exposure and stationary noise impacts to a level less than significant.