4.9 NOISE

This EIR section evaluates the potential effects of noise and groundborne vibration associated with construction and operational activities that could occur as a result of implementation of the proposed project. The Initial Study/Notice of Preparation (IS/NOP [Appendix 1]) identified the potential for impacts associated with the following: exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance; exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels; and a substantial temporary and/or permanent increase in ambient noise levels in the project vicinity. Issues scoped out include proximity to or association with an airport land use plan or airstrip, as the project site is not located within an airport land use plan or affected area near an airstrip. Data used to prepare this report were taken from the Traffic Impact Analysis prepared by Urban Crossroads (Appendix 10) for the proposed project, and information obtained by measuring and modeling existing and future noise levels at the project site and in the surrounding area (Appendix 9). Full bibliographic entries for all reference materials are provided in Section 4.9.5 (References) at the end of this section. Conditions specific to noise and vibration in proximity to the project site have not changed substantially since preparation of the Draft EIR.

All comments received in response to the Initial Study/Notice of Preparation (IS/NOP) circulated for the proposed project were taken in to consideration during preparation of this EIR, and if relevant, have been addressed in this section or others within this document.

4.9.1 Environmental Setting

Fundamentals of Sound and Environmental Noise

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

Noise, on the other hand, is typically defined as unwanted sound. A typical noise environment consists of a base of steady "background" noise that is the sum of many distant and indistinguishable noise sources. Superimposed on this background noise is the sound from individual local sources. These can vary from an occasional aircraft or train passing by to virtually continuous noise from, for example, traffic on a major highway. Table 4.9-1 (Representative Environmental Noise Levels) lists representative noise levels for the environment.

Table 4.9-1 Representative Environmental Noise Levels

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

SOURCE: California Department of Transportation (1998).

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

- L_{eq}, the equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- L_{dn}, the Day-Night Average Level, is a 24-hour average L_{eq} with a 10 dBA "weighting" added to noise during the hours of 10:00 PM to 7:00 AM to account for noise sensitivity in the nighttime.

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

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

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

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

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

Existing Environmental Noise Levels

According to the Noise Element of the City of Huntington Beach General Plan, the primary source of noise within the City is noise from motor vehicles on roadways (traffic noise). These motor vehicles include automobiles, buses, trucks, and vehicles associated with construction equipment transport.

Secondary noise sources in the City include aircraft operations, railroad operations, construction activities, and petroleum extraction activities.

Existing daytime noise levels were monitored at five locations around the project site, which are depicted in Figure 4.9-1 (Noise Monitoring Locations), in order to identify representative noise levels at various areas. The noise levels were measured using a Larson-Davis Model 814 precision sound level meter, which satisfies the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation. The average noise levels and sources of noise measured at each location are identified in Table 4.9-2 (Existing Noise Levels around the Proposed Project Site). These daytime noise levels are characteristic of a typical urban area. As substantial changes in land uses have not occurred in close proximity to the project site and traffic volumes in the area are assumed to have remained reasonably constant, ambient noise levels in the project site vicinity are assumed to be similar to those at the time of preparation of the Draft EIR.

Table 4.9-2 Existing Noise Levels Around the Proposed Project Site

	Location	*Primary Noise Sources*	*Noise Level Statistics*		
			L_{eq} *(dBA)*	L_{min} *(dBA)*	L_{max} *(dBA)*
1	Southwest corner of Goldenwest Street and Talbert Avenue	Traffic	71.2	48.5	83.5
2	Southwest edge of project site, above berm	Traffic on Goldenwest Street	53.1	47.4	64.1
3	North edge of Mobile Home Park	Traffic	69.9	48.4	88.6
4	Lakeview Drive and Shoreview Circle	Park noise, waterfowl	53.6	68.6	47.2
5	Southern edge of homes on Rio Vista Drive	Traffic	71.5	50.1	81.3

SOURCE: Atkins (2007).

Existing Roadway Noise Levels Off Site

Existing roadway noise levels were calculated for the roadway segments in the project site vicinity that have noise-sensitive uses facing the roadways. This task was accomplished using the Federal Highway Administration Highway Noise Prediction Model (FHWA-RD-77-108) and traffic volumes from the project traffic analysis. The model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (energy rates) utilized in the FHWA Model have been modified to reflect average vehicle noise rates identified for California by Caltrans. The Caltrans data show that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels. The average daily noise levels along these roadway segments are presented in Table 4.9-3 (Existing Roadway Noise Levels Off-Site—Weekday) and 4.9-4 Existing Roadway Noise Levels Off Site—Saturday).

Fundamentals of Environmental Groundborne Vibration

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

***Source*:** Microsoft Streets and Trip, basemap, 2007; Atkins, 2007.

Figure 4.9-1

Noise Monitoring Locations

ATKINS

Table 4.9-3 Existing Roadway Noise Levels Off Site—Weekday

Roadway	*Roadway Segment*	*Noise Sensitive Uses*	*dBA L_{dn}*
Goldenwest Street	North of Slater Avenue	Residential	68.2
Goldenwest Street	South of Slater Avenue	Residential	68.2
Goldenwest Street	South of Talbert Avenue	Park/Library	68.1
Goldenwest Street	South of Ellis Avenue	Residential	67.9
Slater Avenue	West of Goldenwest Avenue	Residential	66.9
Slater Avenue	East of Goldenwest Avenue	Residential	66.4
Talbert Avenue	East of Goldenwest Avenue	Park/Library	54.4
Ellis Avenue	West of Goldenwest Avenue	Residential	61.5
Ellis Avenue	East of Goldenwest Avenue	Residential	62.4

SOURCE: Atkins (2007) (calculation data and results are provided in Appendix 9).

This table has not been updated from the Final EIR because a substantial changes in land uses have not occurred in close proximity to the project site and traffic volumes in the area are assumed to have remained reasonably constant, ambient noise levels in the project site vicinity are assumed to be similar to those at the time of preparation of the Draft EIR.

Table 4.9-4 Existing Roadway Noise Levels Off Site—Saturday

Roadway	*Roadway Segment*	*Noise Sensitive Uses*	*dBA L_{dn}*
Goldenwest Street	North of Slater Avenue	Residential	67.1
Goldenwest Street	South of Slater Avenue	Residential	67.4
Goldenwest Street	South of Talbert Avenue	Park/Library	67.2
Goldenwest Street	South of Ellis Avenue	Residential	66.9
Slater Avenue	West of Goldenwest Avenue	Residential	64.4
Slater Avenue	East of Goldenwest Avenue	Residential	64.0
Talbert Avenue	East of Goldenwest Avenue	Park/Library	55.2
Ellis Avenue	West of Goldenwest Avenue	Residential	61.1
Ellis Avenue	East of Goldenwest Avenue	Residential	60.1

SOURCE: Atkins (2007) (calculation data and results are provided in Appendix 9).

This table has not been updated from the Final EIR because a substantial changes in land uses have not occurred in close proximity to the project site and traffic volumes in the area are assumed to have remained reasonably constant, ambient noise levels in the project site vicinity are assumed to be similar to those at the time of preparation of the Draft EIR.

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

background vibration velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

The general human response to different levels of groundborne vibration velocity levels is described in Table 4.9-5 (Human Response to Different Levels of Groundborne Vibration).

Table 4.9-5 Human Response to Different Levels of Groundborne Vibration

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

SOURCE: Harris Miller Miller & Hanson (2006).

Existing Groundborne Vibration Levels

Aside from seismic events, the greatest source of groundborne vibration at the project site and immediate vicinity is roadway truck and bus traffic. Trucks and buses typically generate groundborne vibration velocity levels of around 63 VdB. These levels could reach 72 VdB where trucks and buses pass over bumps in the road.

4.9.2 Regulatory Framework

Federal

US Environmental Protection Agency (USEPA)

The federal Noise Control Act of 1972 addressed the issue of noise as a threat to human health and welfare, particularly in urban areas. In response to the Act, the U.S. Environmental Protection Agency (USEPA) published *Information of Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (USEPA Levels). Ideally, the yearly average L_{eq} should not exceed 70 dBA to prevent measurable hearing loss over a lifetime, and the L_{dn} should not exceed 55 dBA outdoors and 45 dBA indoors to prevent significant activity interference and annoyance in noise-sensitive areas. In addition to the identified noise levels to protect public health, the USEPA Levels identifies an increase of 5 dBA as an adequate margin of safety relative to a baseline noise exposure level of 55 dBA L_{dn} before a noticeable increase in adverse community reaction would be expected.

The USEPA does not promote these findings as universal standards or regulatory goals with mandatory applicability to all communities, but rather as advisory exposure levels below which there would be no reason to suspect that there would be risk from any of the identified health or welfare effects of noise.

Federal Transit Administration (FTA)

The FTA has developed criteria for judging the significance of vibration produced by transportation sources and construction activity. Under Federal Highway Administration (FHWA) regulations, noise abatement must be considered for new highway construction and highway reconstruction projects when the noise levels approach or exceed the noise-abatement criteria. For residential, school and other noise sensitive sites, these criteria indicate that the equivalent noise level (L_{eq}) during the noisiest 1-hour period of the day should not exceed 67 A-weighted decibels (dBA) at the exterior or 52 dBA within the interior. For commercial purposes, the exterior L_{eq} should not exceed 72 dBA.

State

State Department of Health Services

The State Office of Noise Control in the State Department of Health Services has established guidelines to provide a community with a noise environment that it deems to be generally acceptable. Specifically, ranges of noise exposure levels have been developed for different land uses to serve as the primary tool a city uses to assess the compatibility between land uses and outdoor noise. These noise standards are shown in Figure 4.9-2 (Land Use Compatibility with Community Noise Environments). As shown in Figure 4.9-2, a noise level standard of 60 dBA L_{dn} is used for the exterior living areas of new residential land uses, and 45 dBA L_{dn} for the interior of all new residential uses. Where a land use is denoted as "normally acceptable" for the given L_{dn} noise environment, the highest noise level in that range should be considered the maximum desirable for conventional construction which does not incorporate any special acoustic treatment. The acceptability of noise environments classified as "conditionally acceptable" or "normally unacceptable" will depend on the anticipated amount of time that will normally be spent outside the structure and the acoustic treatment to be incorporated in the structure's design.

Local

City of Huntington Beach General Plan

The California Government Code requires that a noise element be included in the General Plan of each county and city in the State. Each local government's goals, objectives, and policies for noise control are established by the noise element of the General Plan and the passage of specific noise ordinances. The Noise Element of the City of Huntington Beach General Plan addresses the issue of noise by identifying sources of noise in the City and providing objectives and policies that ensure that noise from various sources would not create an unacceptable noise environment.

According to the Noise Element of the City of Huntington Beach General Plan, the noise level standards adopted by the City are more stringent than the State Office of Noise Control guidelines for residential and commercial noise levels. In addition, the City's Noise Ordinance, as discussed below, places limitations on noise produced by equipment operation, human activities, and construction. The Noise Element goals, objectives, and policies that are relevant to the proposed project are identified below.

Goal N 1 Ensure that all necessary and appropriate actions are taken to protect Huntington Beach residents, employees, visitors, and noise sensitive uses from the adverse impacts created by excessive noise levels from stationary and ambient sources.

Objective N 1.2 Prevent and mitigate the adverse impacts of excessive noise exposure on the residents, employees, visitors, and noise sensitive uses of Huntington Beach.

Policy N 1.2.1 Require, in areas where noise levels exceed an exterior L_{dn} of 60 dB(A) and an interior L_{dn} of 45 dB(A), that all new development of "noise sensitive" land uses, such as housing, health care facilities, schools, libraries, and religious facilities, include appropriate buffering and/or construction mitigation measures that will reduce noise exposure to levels within acceptable limits.

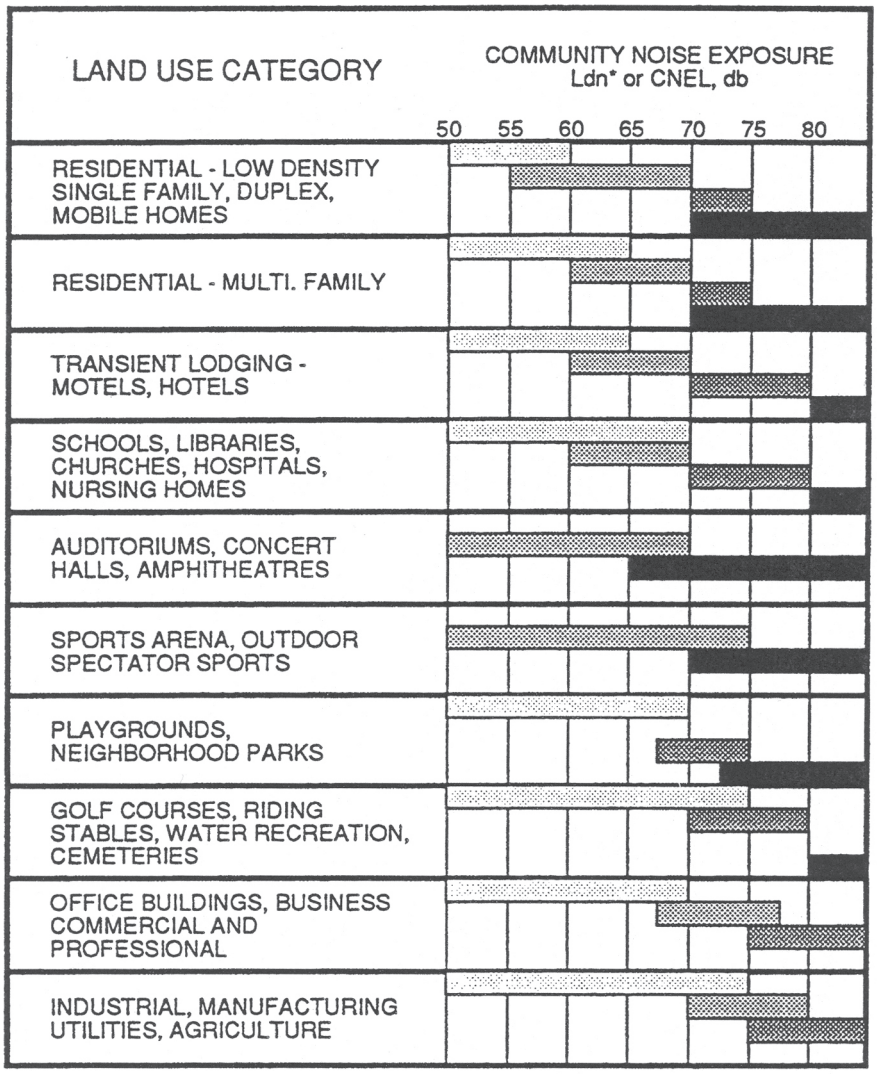
Policy N 1.2.3 Require development, in all areas where the ambient noise level exceeds an L_{dn} of 60 dB(A), to conduct an acoustical analysis and incorporate special design measures in their construction, thereby, reducing interior noise levels to the 45 dB(A) L_{dn} level.

Policy N 1.2.5 Require development that generates increased traffic and subsequent increases in the ambient noise levels adjacent to noise sensitive land uses to provide for appropriate mitigation measures in accordance with the acceptable limits of the City noise ordinance.

Objective N 1.3 Minimize the adverse impacts of traffic-generated noise on residential and other "noise sensitive" uses.

Policy N 1.3.7 Provide for the development of alternate transportation modes such as bicycle paths and pedestrian walkways to minimize the number of noise generating automobile trips.

Policy N 1.3.10 Require that mechanical equipment, such as air conditioning units or pool equipment, comply with the City's Noise Ordinance and Zoning and Subdivision Ordinance.



***Source*:** Office of Noise Control, California Department of Health.

Figure 4.9-2

Land Use Compatibility with Community Noise Environments

Objective N 1.6 Minimize the impacts of construction noise on adjacent uses.

Policy N 1.6.1 Ensure that construction activities be regulated to establish hours of operation, to prevent and/or mitigate the generation of excessive or adverse noise impacts through the implementation of the existing Noise Ordinance and/or any future revisions to the Noise Ordinance.

Objective N 1.7 Ensure that buildings are constructed to prevent adverse noise transmission between differing uses or tenants located in the same commercial structure and individual dwelling units in multi-family residential structures.

Policy N 1.7.1 Rigorously enforce the applicable provisions of the Uniform Building Code and City of Huntington Beach Municipal Code which prevent the transmission of excessive and unacceptable noise levels between individual tenants and businesses in commercial structures and between individual dwelling units in multi-family residential structures.

Consistency Analysis

This EIR provides the acoustical analysis necessary to define noise levels at the project site. The analysis includes City requirements and mitigation measures to ensure that noise levels in the exterior activity environments meet City standards, including limiting the hours of construction in accordance with the Huntington Beach Municipal Code.

In addition, with respect to Policy N 1.2.1, the term "acceptable limits" has not been clearly defined. However, as discussed below under the City of Huntington Beach Municipal Code, the City standard for exterior noise levels is 55 dBA in residential areas. In residential communities where the existing noise exposure is 55 dBA L_{dn} or lower, the Environmental Protection Agency (EPA) and others find that at least a 3 dBA increase in the L_{dn} would have to occur before a significant increase in community dissatisfaction would be noted. Thus, there would be no significant difference in dissatisfaction (as measured by the percent of people reporting themselves "highly annoyed" when surveyed) for residential exposures of 55 dBA L_{dn} versus 58 dBA L_{dn}.

The proposed project would generate increased local traffic volumes, however the project includes pedestrian walkways that connect to nearby transit, which would assist in the reduction vehicular trip potentially resulting in noise minimization. Further, as discussed in Impact 4.9-3 below, the proposed project would not increase local ambient noise levels by more than 0.3 dBA over noise levels without the proposed project. Therefore, the proposed project would not conflict with policies applicable to noise.

City of Huntington Beach Municipal Code

The City of Huntington Beach has adopted a Noise Ordinance (Chapter 8.40 of the Huntington Beach Municipal Code), which identifies exterior and interior noise standards, specific noise restrictions, exemptions, and variances for sources of noise within the City. The noise level standards that have been adopted by the City are more stringent than State Office of Noise Control guidelines for residential and commercial noise levels. The Noise Ordinance applies to all noise sources with the exception of any vehicle that is operated upon any public highway, street or right-of-way, or to the operation of any off-highway vehicle, to the extent that it is regulated in the State Vehicle Code, and all other sources of noise that are specifically exempted.

The exterior noise standards established in the City's Noise Ordinance are identified in Table 4.9-6 (City of Huntington Beach Noise Ordinance Exterior Noise Standards), along with the exterior noise levels that are prohibited. Table 4.9-7 (City of Huntington Beach Noise Ordinance Interior Noise Standards) identifies the City's interior noise standards and prohibited interior noise levels. In both cases, if the ambient noise level is greater than the identified noise standards, the noise standard becomes the ambient noise level without the offending noise.

Table 4.9-6 City of Huntington Beach Noise Ordinance Exterior Noise Standards

Noise Zone	*Noise Zone Land Uses*	*Noise Level*	*Time Period Allowed*
1	All Residential Properties	55 dBA 50 dBA	7:00 AM to 10:00 PM 10:00 PM to 7:00 AM
2	All Professional Office and Public Institutional Properties	55 dBA	Anytime
3	All Commercial Properties Except Professional Office	60 dBA	Anytime
4	All Industrial Properties	70 dBA	Anytime

SOURCE: City of Huntington Beach Noise Ordinance

Exterior Noise Levels Prohibited:

It shall be unlawful for any person at any location within the incorporated area of the City to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level when measured on any residential, public institutional, professional, commercial or industrial property, either within or without the City, to exceed the applicable noise standards:

(a) For a cumulative period or more than thirty (30) minutes in any hour;

(b) Plus 5 dBA for a cumulative period of more than fifteen (15) minutes in any hour;

(c) Plus 10 dBA for a cumulative period of more than five (5) minutes in any hour;

(d) Plus 15 dBA for a cumulative period of more than one (1) minute in any hour; or

(e) Plus 20 dBA for any period of time.

In the event the ambient noise level exceeds any of the first four noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

According to the EPA, a difference of 3 dBA L_{dn} is a barely perceptible increase to most people when evaluating changes in 24-hour community noise levels. Consequently, in the case of public institutional properties such as the proposed senior center, where the existing noise exposure is 55 dBA L_{dn} or lower, the maximum exterior noise level allowable on the project site is 58 dBA L_{dn}.

Table 4.9-7 City of Huntington Beach Noise Ordinance Interior Noise Standards

Noise Zone	*Noise Zone Land Uses*	*Noise Level*	*Time Period*
1	All Residential Properties	55 dBA 45 dBA	7:00 AM to 10:00 PM 10:00 PM to 7:00 AM
2, 3, 4	All Professional Office, Public Institutional, Commercial, and Industrial Properties	55 dBA	Anytime

SOURCE: City of Huntington Beach Noise Ordinance

Interior Noise Levels Prohibited:

It shall be unlawful for any person at any location within the incorporated area of the City to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level when measured within any other structure on any residential, public institutional, professional, commercial or industrial property to exceed:

(a) The noise standard for a cumulative period or more than five (5) minutes in any hour;

(b) The noise standard plus 5 dBA for a cumulative period of more than one (1) minutes in any hour; or

(c) The noise standard plus 10 dBA for any period of time.

In the event the ambient noise level exceeds any of the first two noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the third noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

Construction noise activities are exempt from the Noise Ordinance, provided that the project developer has been granted a permit from the City and that the construction activities do not occur between the hours of 8:00 PM and 7:00 AM on weekdays and Saturdays, or at any time on Sundays or federal holidays.

Central Park Master Plan Mitigation Monitoring Program (MMP)

The Mitigation Monitoring Program (MMP) for the Master Plan of Recreation Uses for Central Park EIR (Central Park Master Plan EIR) requires the City of Huntington Beach to mitigate or avoid significant impacts anticipated in association with construction, operation, and maintenance of project and program level elements with the plan area.

Mitigation measures contained in the MMP applicable to the proposed project have been identified in Table 4-1 (Mitigation Measures Incorporated from Master Plan of Recreation Uses MMP). Mitigation measures intended to address noise impacts are as follows:

Measure Noise-3: The City of Huntington Beach shall limit grading and construction activities to daily operation hours between 7:00 AM and 7:00 PM (Monday through Friday) and 8:00 AM to 5:00 PM on Saturdays. Construction shall not take place on Sundays or Federal holidays.

Measure Noise-4: The construction manager shall ensure that all construction and grading equipment is properly maintained and turned off when not in use.

Measure Noise-5: The U.S. Environmental Protection Agency has estimated that noise levels from construction equipment can be lowered as much as 13 dBA by implementing noise control features that require no major redesign or extreme cost. The City of Huntington Beach shall require that all construction equipment incorporate noise reduction control features. All vehicles and compressors should utilize exhaust mufflers, and engine enclosures as designed by the manufacturer should be in place at all times.

4.9.3 Project Impacts and Mitigation

Analytic Method

This analysis of the existing and future noise environments is based on noise level monitoring, noise prediction modeling, and empirical observations. As defined in the City's General Plan Noise Element, noise sensitive land uses include public schools, hospitals, and institutional uses including churches, museums, and private schools. Typically, residential uses are also considered noise sensitive receptors. Therefore, for the purposes of this analysis, the nearest sensitive receptors to the project site would be the residential uses located approximately 800 feet west of the project site. Residential uses are also located approximately 1,100 feet north of the site and approximately 1,400 feet south of the site.

Existing noise levels were monitored at selected locations within the project site using a Larson-Davis Model 814 precision sound level meter, which is consistent with the standards of the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation. Noise modeling procedures involved the calculation of existing and future vehicular noise levels along individual roadway segments in the site vicinity. This task was accomplished using the Federal Highway Administration (FHWA) Highway Noise Prediction Model (FHWA RD 77 108). The model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. Traffic volumes utilized as data inputs in the noise prediction model were provided by the Traffic Impact Analysis prepared by Urban Crossroads for the proposed project during preparation of the Draft EIR. As substantial changes in land uses have not occurred in close proximity to the project site and traffic volumes in the area are assumed to have remained reasonably constant, ambient noise levels in the project site vicinity are assumed to be similar to those at the time of preparation of the Draft EIR. The analysis considers future cumulative traffic noise levels, in recognition of expected higher traffic volumes and resultant noise levels in the future, which provide an appropriate benchmark against which project noise can be assessed.

Thresholds of Significance

The following thresholds of significance are based on Appendix G of the 2011 CEQA Guidelines, the Huntington Beach General Plan, and the Huntington Beach Municipal Code. For purposes of this EIR, implementation of the proposed project may have a significant adverse impact on noise if it would result in any of the following:

- Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies
- Exposure to persons to or generation of excessive groundborne vibration levels or noise levels
- Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project
- Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project
- Be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels

- Be located within the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels

Effects Not Found to Be Significant

Threshold	Would the project be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? Would the project be project located within the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?

The project site is not located within 2 miles of a public airport, public use airport, or private airstrip. Therefore, the project would not expose people to excessive noise from airports. No impact would occur, and no further analysis of this issue is required in the EIR.

Impacts and Mitigation

Threshold	Would the project expose persons to or generate noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies? Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Impact 4.9-1 **Construction and operation associated with the proposed project would not exceed the standards established in the Huntington Beach Municipal Code.**

Construction Noise

Implementation of the proposed project would include a GPA to re-designate the use of the project site from low intensity to high intensity, to accommodate the development of the proposed senior center on the project site. Implementation of the proposed GPA would result in a departure from the anticipated low-intensity, passive recreational uses and instead would result in a high-intensity use on the site. Under both designations, the existing undeveloped conditions of the project site would not remain. While the GPA itself would not result in direct physical environmental impacts to noise, the development of the senior center would result in physical changes to the project site, the effects of which are analyzed in this section.

As discussed above, the GPA itself would not generate noise impacts. However, implementation of the proposed project also includes the construction of a multi-purpose senior center, including landscaping and parking for approximately 227 vehicles in three parking lots. Access would be provided via a new driveway to be developed at Goldenwest Avenue and Talbert Street. Construction activities are anticipated to last approximately 18 months and would involve grading, street improvements, and utilities installation, followed by construction of the proposed structure and associated parking as well as roadway and landscaping improvements, which would involve the use of heavy equipment. Construction activities

would also involve the use of smaller power tools, generators, and other equipment that are sources of noise. Haul trucks using the local roadways would generate noise as they move along the road. Each stage of construction would involve a different mix of operating equipment, and noise levels would vary based on the amount and types of equipment in operation and the location of the activity.

The EPA has compiled data regarding the noise generating characteristics of typical construction activities. These data are presented in Table 4.9-8 (Noise Ranges of Typical Construction Equipment) and Table 4.9-9 (Typical Outdoor Construction Noise Levels). These noise levels would diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 86 dBA measured at 50 feet from the noise source to the receptor would reduce to 80 dBA at 100 feet from the source to the receptor, and reduce by another 6 dBA to 74 dBA at 200 feet from the source to the receptor.

Table 4.9-8 Noise Ranges of Typical Construction Equipment

Construction Equipment	*Noise Levels in dBA L_{eq} at 50 feet*[1]
Front Loader	73–86
Trucks	82–95
Cranes (moveable)	75–88
Cranes (derrick)	86–89
Vibrator	68–82
Saws	72–82
Pneumatic Impact Equipment	83–88
Jackhammers	81–98
Pumps	68–72
Generators	71–83
Compressors	75–87
Concrete Mixers	75–88
Concrete Pumps	81–85
Back Hoe	73–95
Tractor	77–98
Scraper/Grader	80–93
Paver	85–88

SOURCE: USEPA (1971).

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

The closest sensitive uses to the proposed project site would be the residential uses located approximately 800 feet west of the project site across vegetated open space along Lakeview Drive. These sensitive uses would potentially be affected by the construction noise occurring as a result of the proposed project. Based on the information presented in Table 4.9-8, and the diminishment of noise levels at a rate of 6 dBA per doubling of distance, the approximate noise levels experienced by these

Table 4.9-9 Typical Outdoor Construction Noise Levels

Construction Phase	*Noise Level at 50 Feet with Mufflers (dBA L_{eq})*	*Noise Level at 100 Feet with Mufflers (dBA L_{eq})*	*Noise Level at 200 Feet with Mufflers (dBA L_{eq})*	*Noise Level at 400 Feet with Mufflers (dBA L_{eq})*	*Noise Level at 800 Feet with Mufflers (dBA L_{eq})*
Ground Clearing	82	76	70	64	58
Excavation/Grading	86	80	74	68	62
Foundations	77	71	65	59	53
Structural	83	77	71	65	59
External Finishing	86	80	74	68	62

SOURCE: USEPA (1971).

adjacent sensitive uses due to construction activities occurring at the project site have been estimated and are shown in Table 4.9-9. The residences closest to the project site are located immediately west of the site, along Lakeview Drive, approximately 800 feet from the site boundary. At this distance, typical daily construction activities (excavation and grading) could reach 62 dBA.

Additionally, patrons utilizing the passive park uses adjacent to the proposed project site would experience elevated noise levels during construction activities, as these patrons have the potential to be within 50 feet of the construction activities. Patrons utilizing the passive park use adjacent to the proposed project site could experience noise levels of up to 86 dBA during construction activities.

Most exterior construction activities associated with the proposed project are temporary in nature and would not generate continuously high noise levels, although occasional single-event disturbances from grading and construction are possible.

Under Section 8.40.090 (Special Provisions) of Chapter 8.40 of the City Municipal Code, noise sources associated with construction are exempt from the requirements of the Municipal Code, provided that construction activities do not occur between the hours of 8:00 PM and 7:00 AM on weekdays, including Saturday, or at any time on Sunday or a federal holiday. However, Measure Noise 3 of the Central Park Master Plan EIR, included as mitigation measure MM4.9-1 of this EIR below, identifies more restrictive hours for grading and construction activities that the proposed project must comply with.

Noise generated by construction activities would also have the potential to disturb wildlife in the project area, including sensitive avian species. However, as discussed in detail within Section 4.3 (Biological Resources), mitigation measure MM4.3-1(a) would ensure that sensitive avian species would not be disturbed by construction activities.

The following mitigation measures related to impacts associated with noise generated by construction activities were initially identified in the Central Park Master Plan EIR., as Measures Noise 3 and 5. Original measures from the Central Park Master Plan EIR appear in Table 4-1 (Mitigation Measures Incorporated from Master Plan of Recreation Uses MMP) of this EIR.

For the purposes of this document, the City shall implement mitigation measures MM4.9-1(a) and MM4.9-1(b), which would ensure that measures set forth in the Central Park Master Plan EIR are carried over:

MM4.9-1(a) *(This MM is Measure Noise-3 from the Central Park Master Plan EIR.)*

The City of Huntington Beach shall limit grading and construction activities to daily operation hours between 7:00 AM and 7:00 PM (Monday through Friday) and 8:00 AM to 5:00 PM on Saturdays. Construction shall not take place on Sundays or Federal holidays.

MM4.9-1(b) *(This MM is Measure Noise-5 from the Central Park Master Plan EIR.)*

The U.S. Environmental Protection Agency has estimated that noise levels from construction equipment can be lowered as much as 13 dBA by implementing noise control features that require no major redesign or extreme cost. The City of Huntington Beach shall require that all construction equipment incorporate noise reduction control features. All vehicles and compressors should utilize exhaust mufflers, and engine enclosures as designed by the manufacturer should be in place at all times.

In addition, the following standard City requirements (CR) would help minimize the exposure of nearby noise sensitive receptors to noise generated by construction activities associated with the proposed project.

CR4.9-1(a) *The developer shall coordinate the development of a truck haul route with the Department of Public Works for the import or export of material. This plan shall include the approximate number of truck trips and the proposed truck haul routes. It shall specify the hours in which transport activities can occur and methods to mitigate construction-related impacts to adjacent residents. These haul routes must be submitted for approval to the Department of Public Works prior to issuance of any grading permit.*

CR4.9-1(b) *All haul trucks shall arrive at the site no earlier than 8:00 AM or leave the site no later than 5:00 PM, and shall be limited to Monday through Friday only.*

Implementation of mitigation measures MM4.9-1(a) and MM4.9-1(b), as well as CR4.9-1(a) and CR4.9-1(b), would ensure that impacts associated with construction activities resulting from implementation of the proposed project would remain ***less than significant***.

Operational Noise

As discussed previously, the GPA itself would not result in noise generating activities; however the proposed project also includes the construction of a multi-purpose senior center that could result in an increase in activity on the project site and accordingly, noise levels. As described in Chapter 3 (Project Description), the senior center would be used for a variety of recreational programs and activities serving senior citizens. The primary uses include recreation and social services such as the Seniors Outreach Program, which includes transportation, meals, and counseling and visitation services. When recreational and social programs are not using the rooms in the center, they could be used for public meetings or receptions. An outdoor patio would adjoin the multi-purpose rooms onto which programs could be extended. Typical hours of operation would range from 8:00 AM to 4:00 PM for normal operations, with special programs and classes available until 10:00 PM. Special events, such as wedding receptions would be permitted to use the multi-purpose room Friday and Saturday nights until 12:00 AM. According to data referenced by the Environmental Protection Agency, normal human conversation produces noise levels of 65 dBA at a distance of approximately three feet. The closest sensitive receptor is located approximately 800 feet to the west of the proposed project site. As such the noise associated with human

conversation from special events such as wedding receptions would attenuate at a rate of 6 dBA per doubling of distance to levels of approximately 43 dBA, which would be below the City of Huntington Beach Noise Ordinance Exterior Noise Standards. In addition, special events held at the project site during operation could include the use of loudspeakers, amplified music, and other sources of amplified noise. These amplified noise sources would be required to comply with the City of Huntington Beach Noise Ordinance exterior noise standards, shown in Table 4.9-6. In compliance with this regulation and to prevent noise impacts to nearby residences, the noise level of senior center operations as heard from nearby residences would be no greater than 55 dBA from 7:00 AM to 10:00 PM and 50 dBA from 10:00 PM to 7:00 AM. Therefore, increased noise associated with operation of the senior center, including those associated with special events, would adhere to the established standards and would be considered ***less than significant***.

Threshold	Would the project result in the exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Impact 4.9-2 Construction and operation of the proposed project would not generate or expose persons off site to excessive groundborne vibration.

Implementation of the proposed project would include a GPA to re-designate the use of the project site from low intensity to high intensity, to accommodate the development of the proposed senior center on the project site. Implementation of the proposed GPA would result in a departure from the anticipated low-intensity, passive recreational uses and instead would result in a high-intensity use on the site. Under both designations, the existing undeveloped conditions of the project site would not remain. While the GPA itself would not result in direct physical environmental impacts to noise or vibration, the development of the senior center would result in physical changes to the project site, the effects of which are analyzed in this section.

This analysis uses the Federal Transit Administration (FTA) vibration impact thresholds for sensitive buildings, residences, and institutional land uses. These thresholds are 85 VdB, which is the vibration level that is considered by the FTA to be acceptable only if there are an infrequent number of events per day (as described in Table 4.9-2 [Human Response to Different Levels of Groundborne Vibration]). In terms of groundborne vibration impacts on nearby structures, this analysis will use the FTA's vibration damage threshold of approximately 100 VdB for fragile buildings (HMMH 2006).

Operation of the proposed project would not include any uses that would result in generation of excessive groundborne vibration or groundborne noise levels. However, certain construction activities that would occur under the proposed project would have the potential to generate groundborne vibration. Table 4.9-10 (Vibration Source Levels for Construction Equipment) identifies various vibration velocity levels for the types of construction equipment that would operate at the project site during construction.

During construction of the project, patrons utilizing the passive park uses adjacent to the proposed project site would not be impacted by groundborne vibration because groundborne vibration is almost never annoying to people who are outdoors. Although the motion of the ground may be perceived, without the effects associated with the shaking of a building, the motion does not provoke the same

Table 4.9-10 Vibration Source Levels for Construction Equipment					
	Approximate VdB				
Equipment	*50 Feet*	*100 Feet*	*200 Feet*	*400 Feet*	*800 Feet*
Large Bulldozer	81	75	69	63	57
Caisson Drilling	81	75	69	63	57
Loaded Trucks	80	74	70	64	58
Jackhammer	73	67	63	57	51
Small Bulldozer	52	46	42	38	32

SOURCE: FTA. *Transit Noise and Vibration Impact Assessment, Final Report* (May 2006).

adverse human reaction. In addition, the rumble noise that usually accompanies the building vibration is perceptible only inside buildings.[76]

Construction activities would have the potential to impact the surrounding sensitive receptors to the project site, which include the existing single-family residential homes located approximately 800 feet west of the project site. Based on the information presented in Table 4.9-11, vibration levels could reach approximately 81 VdB within 50 feet of the project site. As vibration level would attenuate at a rate of approximately 6 VdB per doubling of distance, vibration levels at the closest sensitive receptors (800 feet west of the project site) are anticipated to be 57 VdB. As such, these residential uses would not experience vibration levels during construction of the proposed project that would exceed the FTA's vibration impact threshold of 85 VdB for human annoyance. Therefore, this impact would be considered ***less than significant***.

Threshold	Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Impact 4.9-3 The proposed project would generate increased local traffic volumes, but would not cause a substantial permanent increase in ambient noise levels.

A noise level increase of 3 dBA L_{dn} is considered to be barely perceptible to most people. Thus, for the purpose of this analysis, a permanent increase of 3 dBA L_{dn} over ambient noise levels without the project is considered to be substantial. The increase in traffic resulting from implementation of the proposed project could increase the ambient noise levels at the existing sensitive off-site locations (such as residential uses) in the project vicinity during the weekday and on Saturdays.

Existing Plus Project Weekday Noise Increases

In order to evaluate the roadway noise level increases that could occur with implementation of the proposed project against the existing baseline conditions, the project's estimated daily trips were added to the existing roadway traffic volumes as reported in the Traffic Impact Analysis prepared by Urban Crossroads (Appendix 10). Project traffic-generated noise impacts have been assessed based on the contribution of the proposed project to the existing base traffic volumes in the project vicinity. As shown in Table 4.9-11 (Existing Plus Project Roadway Noise Levels - Weekday), weekday project related traffic

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

would not result in substantial increases in noise along any roadway segments compared to 2007 without Project Conditions as there would be no increase in roadway noise levels above existing conditions. The proposed project would not increase roadway noise levels above the 3.0 dBA significance threshold, and ***no impact*** would occur.

Table 4.9-11 Existing Plus Project Roadway Noise Levels - Weekday

Roadway Segment	*Existing Land Use*	*Noise Levels in dBA L_{dn}*			
		Existing (2007) Without Project	*Existing (2007) With Project*	*Increase*	*Significance Threshold?*
Goldenwest Avenue, north of Slater Avenue	Residential	68.2	68.2	0.0	3.0
Goldenwest Avenue, south of Slater Avenue	Residential	68.2	68.2	0.0	3.0
Goldenwest Avenue, south of Talbert Avenue	Park	68.1	68.1	0.0	3.0
Goldenwest Avenue, south of Ellis Avenue	Residential	67.9	67.9	0.0	3.0
Slater Avenue, west of Goldenwest Avenue	Residential	66.9	66.9	0.0	3.0
Slater Avenue, east of Goldenwest Avenue	Residential	66.4	66.4	0.0	3.0
Talbert Avenue, east of Goldenwest Avenue	Park/Library	54.4	54.4	0.0	3.0
Ellis, west of Goldenwest Avenue	Residential	61.5	61.5	0.0	3.0
Ellis, east of Goldenwest Avenue	Residential	62.4	62.4	0.0	3.0

SOURCE: Atkins (2011) (calculation data and results are provided in Appendix 9a).

Existing Plus Project Saturday Noise Increases

As shown in Table 4.9-12 (Existing Plus Project Roadway Noise Levels - Saturday), Saturday project related traffic would not result in substantial increases in noise along any roadway segments compared to 2007 without Project Conditions. As shown in Table 4.9-12, implementation of the proposed project would increase local noise levels by a maximum of 0.1 dBA L_{dn} at three of the study roadway segments in the project vicinity during Saturdays. This increase is considered to be inaudible/imperceptible to most people and would not exceed the identified significance threshold of 3 dBA. Therefore, the proposed project would not result in a substantial permanent increase in ambient noise levels above levels experienced without the project on weekdays and would result in a ***less than significant*** impact.

Future Weekday Noise Increases

Table 4.9-13 (Predicted Year 2012 Roadway Noise Levels Off Site—Weekday) identifies the changes in future noise levels during the weekday along the study area roadway segments in the project vicinity that have adjacent residential uses.

As shown in Table 4.9-13, implementation of the proposed project would increase local noise levels by a maximum of 0.3 dBA L_{dn} at two of the study roadway segments in the project vicinity during weekdays. This increase is considered to be inaudible/imperceptible to most people and would not exceed the identified significance threshold of 3 dBA. Therefore, the proposed project would not result in a substantial permanent increase in ambient noise levels above levels experienced without the project on weekdays and would result in a less than significant impact.

Table 4.9-12 Existing Plus Project Roadway Noise Levels – Saturday

Roadway Segment	*Existing Land Use*	*Noise Levels in dBA L_{dn}*			
		Existing (2007) Without Project	*Existing (2007) With Project*	*Increase*	*Significance Threshold?*
Goldenwest Avenue, north of Slater Avenue	Residential	67.1	67.2	0.1	3.0
Goldenwest Avenue, south of Slater Avenue	Residential	67.4	67.4	0.0	3.0
Goldenwest Avenue, south of Talbert Avenue	Park	67.2	67.2	0.0	3.0
Goldenwest Avenue, south of Ellis Avenue	Residential	66.9	66.9	0.0	3.0
Slater Avenue, west of Goldenwest Avenue	Residential	64.4	64.4	0.0	3.0
Slater Avenue, east of Goldenwest Avenue	Residential	64.0	64.0	0.0	3.0
Talbert Avenue, east of Goldenwest Avenue	Park/Library	55.2	55.2	0.0	3.0
Ellis, west of Goldenwest Avenue	Residential	61.1	61.2	0.1	3.0
Ellis, east of Goldenwest Avenue	Residential	60.1	60.2	0.1	3.0

SOURCE: Atkins (2011) (calculation data and results are provided in Appendix 9a).

Table 4.9-13 Predicted Year 2012 Roadway Noise Levels Off Site—Weekday

Roadway Segment	*Existing Land Use*	*Noise Levels in dBA L_{dn}*			
		Year 2012 Without Project	*Year 2012 With Project*	*Increase*	*Significance Threshold?*
Goldenwest Avenue, north of Slater Avenue	Residential	68.7	68.8	0.1	3.0
Goldenwest Avenue, south of Slater Avenue	Residential	68.6	68.8	0.2	3.0
Goldenwest Avenue, south of Talbert Avenue	Park	68.5	68.7	0.2	3.0
Goldenwest Avenue, south of Ellis Avenue	Residential	68.4	68.4	0.0	3.0
Slater Avenue, west of Goldenwest Avenue	Residential	66.9	66.9	0.0	3.0
Slater Avenue, east of Goldenwest Avenue	Residential	67.4	67.4	0.0	3.0
Talbert Avenue, east of Goldenwest Avenue	Park/Library	54.8	55.1	0.3	3.0
Talbert Avenue, West of Goldenwest Avenue	Park	0.0	54.9	0.0	3.0
Ellis, west of Goldenwest Avenue	Residential	61.9	62.0	0.1	3.0
Ellis, east of Goldenwest Avenue	Residential	62.8	63.1	0.3	3.0

SOURCE: Atkins (2007) (calculation data and results are provided in Appendix 9).

Future Saturday Noise Increases

Table 4.9-14 (Predicted Year 2012 Roadway Noise Levels Off Site—Saturday) identifies the changes in future noise levels on Saturdays along the study-area roadway segments in the project vicinity that have adjacent residential uses.

As shown in Table 4.9-14, implementation of the proposed project would increase local noise levels by a maximum of 0.2 dBA L_{dn} at one of the study roadway segments in the project vicinity during Saturdays.

This increase is considered to be inaudible/imperceptible to most people and would not exceed the identified threshold of significance. Therefore, the proposed project would not result in a substantial permanent increase in ambient noise levels above levels experienced without the project on Saturdays and would result in a less than significant impact.

Table 4.9-14 Predicted Year 2012 Roadway Noise Levels Off Site—Saturday

Roadway Segment	*Existing Land Use*	*Noise Levels in dBA L_{dn}*			
		Year 2012 Without Project	*Year 2012 With Project*	*Increase*	*Significance Threshold?*
Goldenwest Avenue, north of Slater Avenue	Residential	67.6	67.6	0.0	3.0
Goldenwest Avenue, south of Slater Avenue	Residential	67.8	67.9	0.1	3.0
Goldenwest Avenue, south of Talbert Avenue	Park	67.6	67.7	0.1	3.0
Goldenwest Avenue, south of Ellis Avenue	Residential	67.3	67.3	0.0	3.0
Slater Avenue, west of Goldenwest Avenue	Residential	64.4	64.5	0.1	3.0
Slater Avenue, east of Goldenwest Avenue	Residential	64.8	64.9	0.1	3.0
Talbert Avenue, east of Goldenwest Avenue	Park/Library	55.6	55.8	0.2	3.0
Talbert Avenue, West of Goldenwest Avenue	Park	0.0	51.7	0.0	3.0
Ellis, west of Goldenwest Avenue	Residential	60.6	60.7	0.1	3.0
Ellis, east of Goldenwest Avenue	Residential	61.6	61.7	0.1	3.0

SOURCE: PBS&J 2007. Calculation data and results are provided in Appendix 9

4.9.4 Cumulative Impacts

Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to the proposed project in combination with other projects within the proximity of project site. Therefore, cumulative traffic-generated noise impacts have been assessed based on the contribution of the proposed project to the future cumulative base traffic volumes in the project vicinity. The noise levels associated with cumulative base traffic volumes without the project, and cumulative base traffic volumes with the project are identified in Table 4.9-11 and Table 4.9-12 for weekdays and Saturdays, respectively, along with the contribution of traffic noise generated by the proposed project. Noise level increases would reach a maximum of 0.3 dBA L_{dn} at two of the study roadway segments in the project vicinity, which is considered to be inaudible/imperceptible to most people. The contribution of the proposed project would range from 0 dBA to 0.3 dBA and noise levels on study roadway segments would not increase by more than 3.0 dBA L_{dn} which is the established threshold. The 0 dBA to 0.3 dBA contribution of the proposed project to future roadway noise levels would not exceed the identified thresholds of significance and, therefore, would not be cumulatively considerable. The proposed project would result in a less than significant cumulative noise impact.

4.9.5 References

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

Hendriks, R. *Technical Noise Supplement: A Technical Supplement to the Traffic Noise Analysis Protocol*. California Department of Transportation (Caltrans), Sacramento, California, October 1998.

Huntington Beach, City of. *Huntington Beach General Plan.* Prepared by Envicom Corporation, May 13, 1996.

U.S. Department of Transportation. Federal Highway Administration. *Highway Noise Fundamentals*, 1980.1980a

———. Federal Highway Administration. *Highway Noise Mitigation*, 1980.1980b

———. Federal Highway Administration. *Fundamentals and Abatement of Highway Traffic Noises*, September 1980.

———. Federal Railroad Administration. *High-Speed Ground Transportation Noise and Vibration Impact Assessment*, 1998.

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

Urban Crossroads. 2007. *Huntington Beach Senior Center Project Traffic Impact Analysis, Huntington Beach, California*. July 30.