4.10 Noise

This section evaluates potential noise impacts associated with construction and operation of the future development that could occur under the Housing Element Update (HEU) ~~floating~~ new zone program. Specifically, this section addresses potential noise impacts related to exposing persons to noise in excess of applicable noise ordinance standards and to temporary and permanent increases in ambient noise levels. Complete noise modeling data are contained in Appendix O of this EIR. Impacts are assessed in accordance with standards established in the City of Encinitas Noise Element of the General Plan and the City's Municipal Code.

4.10.1 Existing Conditions

4.10.1.1 Fundamentals of Noise and Vibration

a. Fundamentals of Noise

Sound levels are described in units called the decibel (dB). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the energy would result in a 3 dB decrease.

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important. In addition, most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors has been developed. The noise descriptors used for this study are the one-hour equivalent noise level (L_{eq}), the community noise equivalent level (CNEL), and the day-night equivalent level (L_{dn}).

- The **L_{eq}** is the level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound. For example, $L_{eq(1)}$ is the equivalent noise level over a 1-hour period and $L_{eq(8)}$ is the equivalent noise level over a 8-hour period. $L_{eq(8)}$ is a common metric for evaluating construction noise.

- The **CNEL** is a 24-hour equivalent sound level. The CNEL calculation applies an additional 5 dB(A) penalty to noise occurring during evening hours, between 7:00 p.m. and 10:00 p.m., and an additional 10 dB(A) penalty is added to noise occurring during the night, between 10:00 p.m. and 7:00 a.m. These increases for certain times

are intended to account for the added sensitivity of humans to noise during the evening and night.

- The **L_{dn}** is also a 24-hour equivalent sound level that applies an additional 10 dB(A) to the sound levels occurring between 10:00 p.m. and 7:00 a.m. CNEL and L_{dn} noise levels usually agree within one decibel for the same noise. For all practical purposes, CNEL and L_{dn} can be considered synonymous.

Sound from a small, localized source (approximating a "point" source) radiates uniformly outward as it travels away from the source in a spherical pattern, known as geometric spreading. The sound level decreases or drops off at a rate of 6 dB(A) for each doubling of the distance.

Traffic noise is not a single, stationary point source of sound. The movement of vehicles makes the source of the sound appear to emanate from a line (line source) rather than a point when viewed over some time interval. The drop-off rate for a line source is 3 dB(A) for each doubling of distance.

Human perception of noise has no simple correlation with acoustical energy. A change in noise levels is generally perceived as follows: 3 dB(A) barely perceptible, 5 dB(A) readily perceptible, and 10 dB(A) perceived as a doubling or halving of noise (Caltrans 2013).

b. Fundamentals of Vibration

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

Vibration energy spreads out as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. Groundborne vibration is measured by its peak particle velocity (PPV). The PPV is normally described in inches per second (in/sec). PPV is appropriate for determining potential structure damage but does not evaluate human response to vibration. The ground motion caused by vibration may also be described in decibel notation (vibration decibels), referenced as VdB, which serves to compress the range of numbers required to describe vibration relative to human response. The general human response to different levels of groundborne vibration velocity levels is described in Table 4.10-1.

Table 4.10-1 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: FTA 2006.	

Groundborne vibration can be a concern for nearby residents along a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to groundborne noise, described below, groundborne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of groundborne vibration are trains, buses on rough roads and construction activities such as blasting, pile-driving and operating heavy earth-moving equipment.

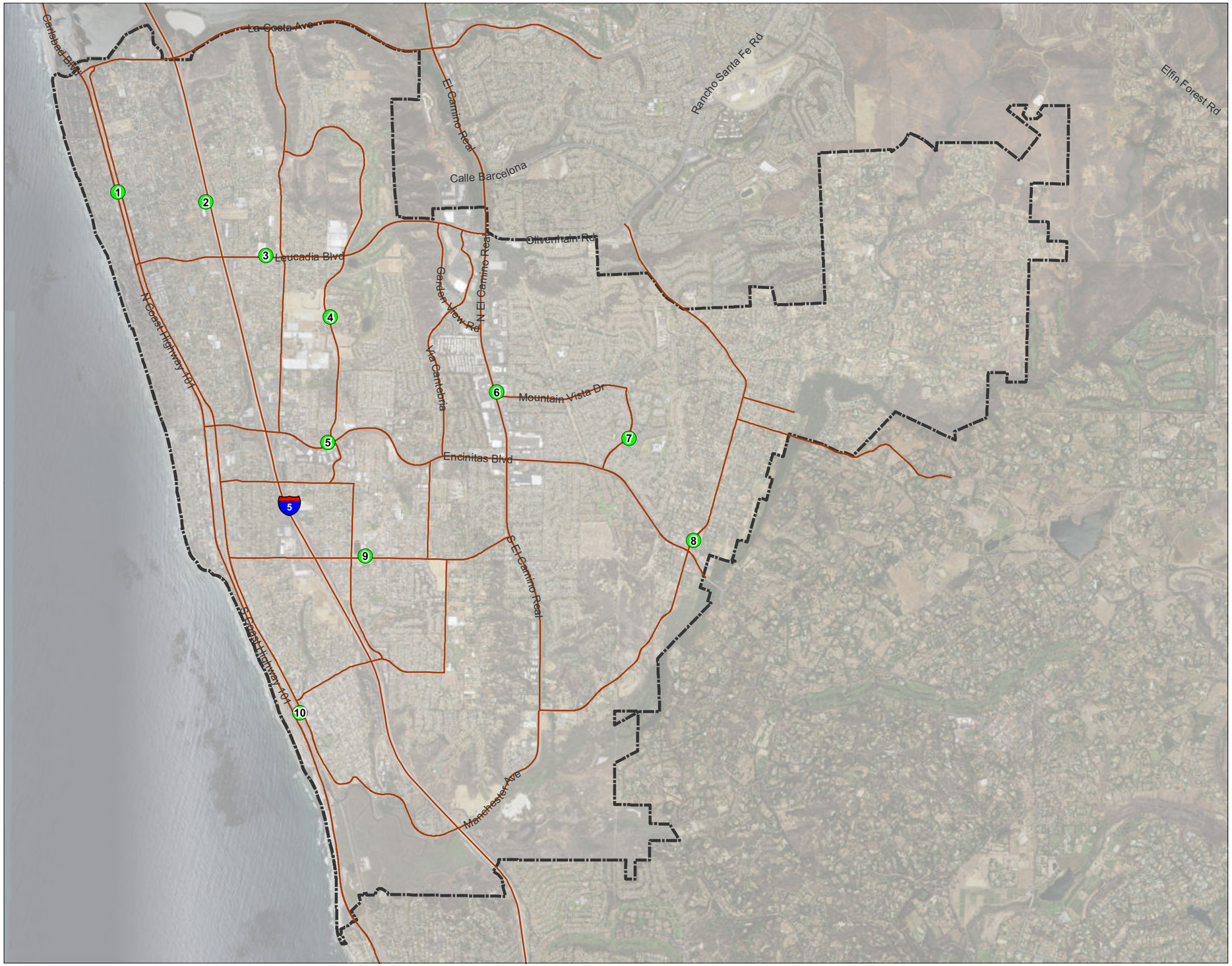
The rumbling sound caused by the vibration of building structures is referred to as groundborne noise. Like broadband noise, groundborne noise is usually characterized with the A-weighted sound level, which is intended to represent the normal frequency response of the human ear. However, there are potential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

4.10.1.2 Environmental Setting

a. Existing Noise Levels

Ambient noise levels were measured in the City of Encinitas to provide a characterization of the variability of noise throughout the project area. Ten 15-minute, daytime noise level measurements were conducted. Noise measurements were taken with two Larson-Davis LxT Type 1 Integrating Sound Level Meters, serial numbers 3828 and 3829. Measurement locations are shown in Figure 4.10-1. A summary of the measurements is provided in Table 4.10-2. Based on the measurement data shown in Table 4.10-2, daytime noise levels in the project area range from 56.7 to 76.4 dB(A) L_{eq} and are typical of an urban environment.

Image source: USDA FSA (flown June 2014)



City Limits

Roads

Noise Measurement Locations

0 Miles 0.5

FIGURE 4.10-1

Noise Measurement Locations

RECON

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Table 4.10-2
Ambient Noise Measurements

Measurement	Location	Time	Noise Sources	Measured Noise Level [dB(A) L_{eq}]
1	25 feet east of Highway 101 and 25 feet west of railroad tracks, north of Jason Street	12:37p.m.–12:52 p.m.	Vehicle traffic on Highway 101, train passby and helicopter flyover	70.5
2	50 feet west of I-5, along east shoulder of Orpheus Avenue	3:41 p.m.–3:56 p.m.	Vehicle traffic on I-5 and Orpheus Avenue	76.4
3	25 feet north of Leucadia Boulevard, across from Del Riego Avenue	3:00 p.m.–3:15 p.m.	Vehicle traffic on Leucadia Boulevard	68.5
4	50 feet east of Quail Gardens Drive, north of Quail Gardens Lane	1:30 p.m.–1:45 p.m.	Vehicle traffic on Quail Gardens Drive	58.5
5	50 feet north of Encinitas Boulevard, west of Quail Gardens Drive/Westlake Street	2:04 p.m.–2:19 p.m.	Vehicle traffic on Encinitas Boulevard and Quail Gardens Drive/Westlake Street	71.0
6	25 feet east of El Camino Real, north of Mountain Vista Drive	3:07 p.m.–3:22 p.m.	Vehicle traffic on El Camino Real, parking lot activities	69.0
7	50 feet east of Village Park Way and 35 feet west of Countrywood Lane, north of Park Dale Lane	2:31 p.m.–2:46 p.m.	Vehicle traffic on Village Park Way and Countrywood Lane	59.3
8	50 feet east of Rancho Santa Fe Road, north of Encinitas Boulevard	1:27 p.m.–1:42 p.m.	Vehicle traffic on Rancho Santa Fe Road	61.2
9	50 feet north of Santa Fe Drive, in parking lot of San Diego Academy	12:46 p.m.–1:01 p.m.	Vehicle traffic on Santa Fe Drive and I-5	61.3
10	50 feet west of San Elijo Avenue, 105 feet east of railroad tracks and 175 feet east of Highway 101, north of Liverpool Drive	12:01 p.m.–12:16 p.m.	Vehicle traffic on San Elijo Drive and Highway 101	56.7

NOTE: I-5 = Interstate 5.

b. Sensitive Noise and Vibration Receptors

Noise sensitive land uses are land uses associated with indoor and/or outdoor human activities that may be subject to stress and/or significant interference from noise. They include residential (single and multi-family dwellings, mobile home parks, dormitories and similar uses); transient lodging (including hotels, motels and similar uses); hospitals, nursing homes, convalescent hospitals and other facilities for long-term medical care; and public or private educational facilities, libraries, churches and other places of public gathering.

4.10.2 Regulatory Framework

4.10.2.1 State

a. California Code of Regulations Title 24 Interior Noise Building Standards

Interior noise levels for dwellings other than detached single-family dwellings are regulated by Title 24 of the California Code of Regulations (CCR), California Noise Insulation Standards. Title 24, Chapter 12, Section 1207, of the California Building Code requires that interior noise levels, attributable to exterior sources, not exceed 45 CNEL in any habitable room within a residential structure. A habitable room in a building is used for living, sleeping, eating, or cooking. Bathrooms, closets, hallways, utility spaces and similar areas are not considered habitable spaces.

Acoustical studies must be prepared for proposed residential structures located where the exterior noise level exceeds 60 CNEL. The studies must demonstrate that the design of the building would reduce interior noise to 45 CNEL in habitable rooms. If compliance requires windows to be inoperable or closed, the structure must include ventilation or air-conditioning (24 CCR 1207 2010).

4.10.2.2 Local

a. General Plan/Local Coastal Program

As discussed in Section 4.9, the City of Encinitas has established noise guidelines in the City's General Plan Noise Element (City of Encinitas 1989). These guidelines identify compatible exterior noise levels for various land use types. The HEU includes an amendment to the adopted General Plan Noise Element but would not change the exterior noise standards for residential uses. The noise element amendment is discussed in Chapter 3.0, and the noise compatibility levels are summarized in Table 4.9-6. As identified in Table 4.9-6, residential uses are normally acceptable up to 60 average sound level (L_{dn}). A land use located in an area with an acceptable exterior noise level indicates that standard construction methods would attenuate exterior noise to an acceptable indoor noise level and that people can carry out outdoor activities with minimal noise interference The Noise Element recognizes that there are residential areas where this level is exceeded, thus, residential uses are conditionally acceptable up to 70 L_{dn}, but normally unacceptable up to 75 L_{dn}, and clearly unacceptable above 75 L_{dn}. Any project which would be located in a normally unacceptable noise exposure area, based on the Land Use Compatibility Guidelines, shall require an acoustical analysis. Noise attenuation in the future shall be incorporated in the project as needed. The noise level criteria are applied where outdoor use is a major consideration (e.g., backyards of single family residences and common outdoor areas of multi-family developments). Interior noise levels are not to exceed an L_{dn} of 45 dB in accordance with Title 24.

Pertinent goals and policies related to noise as identified in the adopted Noise Element are listed below in Table 4.10-3.

Table 4.10-3 Goals and Policies Related to Noise	
Goal/Policy	Description
City of Encinitas General Plan Noise Element	
Goal 1	Provide an acceptable noise environment for existing and future residents of the City of Encinitas
1.1	Review actions or projects that may have noise generation potential to determine what impact they may have on existing land uses. If a project would cause an increase in traffic noise levels, the policy of the City of Encinitas is to accept an increase up to an L_{dn} of 55 dB in outdoor residential use areas without mitigation. If a project would increase the traffic noise level by more than 5 dB and the resulting L_{dn} would be over 55 dB, then mitigation measures must be evaluated. If the project, or action, would increase traffic noise levels by 3 dB or more and the resulting L_{dn} would exceed 60 dB in outdoor use areas in residential development, noise mitigation must be similarly evaluated. The impact of non-transportation projects must generally be evaluated on a case-by-case basis. The following guidelines will aid in evaluating the impacts of commercial and industrial projects. a) Performance Standards Adjacent to Residential Areas. New commercial construction adjacent to residential areas should not increase noise levels in a residential area by more than 3 dB (L_{dn}) or create noise impacts which would increase noise levels to more than an L_{dn} of 60 dB at the boundary of the nearest residential area, whichever is more restrictive. b) Performance Standards Adjacent to Commercial and Industrial Areas. New commercial projects should not increase noise levels in a commercial area by more than 5 dB (L_{dn}) or increase noise levels to an L_{dn} in excess of 70 dB (office buildings, business and professional) or an L_{dn} of 75 dB (industrial) at the property line of an adjacent commercial/industrial use, whichever is more restrictive. These criteria may be waived if, as determined by a noise analysis, there are mitigating circumstances (such as higher existing noise levels) and/or no uses would be adversely affected. Where conditions are unusual or where backgrounds are unusually low and the characteristics of a new noise source are not adequately described by using the L_{dn} noise descriptor, additional acoustical analysis is encouraged and the conclusions of such analysis will be considered by the City.
1.2	An L_{dn} of 60 dB is the maximum acceptable outdoor noise level in residential outdoor use areas. The City recognizes that there are residential areas in which existing noise levels exceed an acceptable level. The City will adopt a Noise Wall/Barrier Installation Policy for determining which areas should receive soundwalls along major street systems and to evaluate possible cost participation programs for constructing these soundwalls.
1.3	To further improve the noise environment in the City of Encinitas, the police department will enforce the provisions in Sections 27-150 and 27-151 of the California State Motor Vehicle Code. These sections require that all vehicles be equipped with a properly maintained muffler and that exhaust systems not be modified.
1.4	The City will limit truck traffic in residential and commercial areas to designated truck routes. Limit construction delivery, and through truck traffic to designated routes. Distribute maps of approved truck routes to City traffic officers.

Table 4.10-3 Goals and Policies Related to Noise	
Goal/Policy	Description
1.5	The City will establish and maintain coordination among City, County and State agencies involved in noise abatement and other agencies to reduce noise generated from sources outside the City's jurisdiction.
1.7	Apply Title 24 of the California Administrative Code, associated with noise insulation standards, to single-family dwellings.
1.8	Establish noise standards for all types of noise not already identified in the General Plan or governed by existing ordinances.
Goal 2	Require that new development be designed to provide acceptable indoor and outdoor noise environments.
2.1	The Noise and Land Use Compatibility Guidelines and the accompanying discussion set forth the criteria for siting new development in the City of Encinitas. Any project which would be located in a normally unacceptable noise exposure area, based on the Land Use Compatibility Guidelines, shall require an acoustical analysis. Noise mitigation in the future shall be incorporated in the project as needed. As a condition of approval of a project, the City may require post-construction noise monitoring and sign off by an acoustician to ensure that City requirements have been met.
Goal 3	Ensure that residents are protected from harmful and irritating noise sources to the greatest extent possible.
3.1	The City will adopt and enforce a quantitative noise ordinance to resolve neighborhood conflicts and to control unnecessary noise in the City of Encinitas. Examples of the types of noise sources that can be controlled through the use of a quantitative noise ordinance are barking dogs, noisy mechanical equipment such as swimming pool and hot tub pumps, amplified music in commercial establishments, etc.
Goal 4	Provide for measures to reduce noise impacts from stationary noise sources.
4.1	Ensure inclusion of noise mitigation measures in the design and operation of new and existing development.
SOURCE: City of Encinitas 1989, amended 2014.	

b. City of Encinitas Municipal Code

On-Site Generated Noise

The City's Municipal Code establishes noise criteria to prevent noise and vibration that may jeopardize the health or welfare of the City's citizens or degrade their quality of life. Chapter 9.32, Noise Abatement and Control Ordinance, and Chapter 30.40, Performance Standards, establish property line noise level limits. These limits apply to existing uses, but will also apply to future uses and are used for evaluating potential impacts of future on-site generated noise levels. The property line noise limits are summarized in Table 4.10-4. As stated in the Municipal Code:

1. Every use shall be so operated that the noise generated does not exceed the following levels at or beyond the lot line and does not exceed the limits of any adjacent zone.

Table 4.10-4 City of Encinitas Exterior Noise Limits		
	Noise Level [dB(A)][1,2,3]	
Adjacent Zone	7:00 a.m. to 10:00 p.m.	10:00 p.m. to 7:00 a.m.
Rural Residential (RR), Rural Residential-1 (RR-1), Rural Residential-2 (RR-2), Residential-3 (R-3), Residential-5 (R-5), Residential-8 (R-8)	50	45
Residential-11 (R-11), Residential Single Family-11 (RS-11), Residential-15 (R-15), Residential-20 (R-20), Residential-25 (R-25), Mobile Home Park (MHP)	55	50
Office Professional (OP), Limited Local Commercial (LLC), Local Commercial (LC), General Commercial (GC), Limited Visitor Serving Commercial (L-VSC), Visitor Serving Commercial (VSC)	60	55
Light Industrial (L-I), Business Park (BP)	60	55
SOURCE: City of Encinitas Municipal Code Section 30.40.010		

2. ER/OS/PK will be governed by the limits applicable to the source of the complaint.

3. The interior noise level as required by the State of California Noise Insulation Standards must not exceed an L_{dn} of 45 dB in multi-family dwellings. This interior standard shall also be applied to single-family dwellings and offices in the City of Encinitas.

4. It shall be unlawful for any person on any property within 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 other property to exceed the following:

   a. The noise standard for cumulative period of more than 30 minutes in any hour; or

   b. The noise standard plus five dB for a cumulative period of more than 15 minutes in any hour; or

   c. The noise standard plus up to 15 dB for a cumulative period of more than one minute in any hour; or

   d. The noise standard plus 20 dB for any period of time.

5. For the purpose of this chapter, the peak decibel reading for a noise with a fluctuating noise level (such as live or recorded music) shall be considered as the noise level for the entire cumulative period of the noise. Likewise, the time between repetitive intermittent noises (such as banging, pounding, or hammering) shall be included in the cumulative of the noise.

Construction Noise

Section 9.32.410 of the City's Municipal Code identifies construction noise level limits and states that:

Except for emergency work, it shall be unlawful for any person, including the City, to operate construction equipment at any construction site, except as outlined in subsections A and B of this section:

A. It shall be unlawful for any person, including the City, to operate construction equipment at any construction site on Sundays, and days appointed by the President, Governor or the City Council for a public fast, thanksgiving or holiday. Notwithstanding the above, a person may operate construction equipment on the above-specified days between the hours of 10:00 a.m. and 5:00 p.m. in compliance with the requirements of subsection B of this section at his or her residence or for the purpose of constructing a residence for him or herself, provided such operation of construction equipment is not carried on for profit or livelihood. In addition, it shall be unlawful for any person to operate construction equipment at any construction site on Mondays through Saturdays except between the hours of 7:00 a.m. and 7:00 p.m.

B. No such equipment, or combination of equipment regardless of age or date of acquisition, shall be operated so as to cause noise at a level in excess of 75 dB for more than 8 hours [dB(A) $L_{eq(8)}$] during any 24-hour period when measured at or within the property lines of any property which is developed and used either in part or in whole for residential purposes.

   In the event that lower noise limit standards are established for construction equipment pursuant to State or Federal law, said lower limits shall be used as a basis for revising and amending the noise level limits specified in this subsection.

Note that the metric used to evaluate construction noise is the 8-hour equivalent noise level [dB(A) $L_{eq(8)}$]. $L_{eq(8)}$ is useful for evaluating construction noise because equipment operated intermittently with brief periods of maximum power, varying load cycles, and breaks for the operators and for non-equipment tasks.

Vibration

Chapter 30.40 of the City's Municipal Code identifies vibration limits for vibration. The vibration limits are summarized in Table 4.10-5. As stated in the Municipal Code:

> Every use shall be so operated that the ground vibration generated at any time and measured at any point along the lot line of the lot on which the use is located shall not be perceptible and shall not exceed the following:

Table 4.10-5 City of Encinitas Vibration Limits		
	Vibration in Inches per Second	
Adjacent Zone	Impact	Steady-State
Residential	0.006	0.003
Commercial	0.010	0.005
Light Industrial	0.040	0.020
Public/Semi-Public	0.010	0.005
SOURCE: City of Encinitas Municipal Code Section 30.40.010		

4.10.3 Significance Determination Thresholds

Consistent with Appendix G of the California Environmental Quality Act Guidelines, impacts related to noise would be significant if the HEU project would:

1. Result in a substantial permanent increase in ambient traffic noise levels in the project vicinity above levels existing without the project;

2. Result in exposure of persons to or generation of noise levels in excess of limits established in the noise ordinance;

3. Result in a substantial temporary or periodic increase in ambient noise levels above levels existing without the project; or

4. Result in the generation of excessive groundborne vibration or groundborne noise levels in the project vicinity above levels existing without the project.

A noise/land use impact would also occur if the HEU would result in exposure of persons to noise levels in excess of standards established in the local General Plan. The City has established noise land use compatibility guidelines in the City's adopted General Plan Noise Element. Additionally, the project includes an amendment to the adopted General Plan Noise Element. The exterior noise standards for residential uses are the same in both the adopted Noise Element and the amendment to the Noise Element. Consistency with these standards are discussed in Section 4.9, Land Use and Planning. A discussion of compatibility with the City's interior standards as well as Title 24, which established interior noise standards for all dwellings other than detached single-family dwellings, is also provided in Section 4.9, Land Use and Planning.

4.10.4 Methodology

4.10.4.1 Ambient Traffic Noise

The HEU does not propose the construction of new housing or other development; rather it provides capacity for future development consistent with State Housing Element Law. Future buildout of the housing sites would increase traffic volumes on local roadways. Noise level increases would be greatest nearest the housing sites, which would represent

the greatest concentration of project-related traffic. Traffic noise is primarily a function of volume, vehicle mix, speed and proximity. For purposes of this evaluation, the vehicle mix, speed and proximity are assumed to remain constant in the future. Thus, the primary factor affecting noise levels would be increased traffic volumes. Existing and future traffic volumes and speeds were obtained from the traffic impact analysis prepared for the project.

Direct impacts were determined by comparing existing average daily traffic volumes with the existing condition plus the project (each housing strategy) at full buildout. Cumulative impacts were determined by comparing the future "with project" and "no project (adopted General Plan)" conditions and determining the project's contribution to the future cumulative noise levels.

4.10.4.2 On-Site Generated Noise

Stationary sources of noise include activities associated with a given land use. The noise sources associated with future development proposed under the HEU would be those typical of any residential development (vehicles arriving and leaving, children at play and landscape maintenance machinery). None of these noise sources are anticipated to violate the City's Municipal Code or result in a substantial permanent increase in existing noise levels.

Heating, ventilation, and air conditioning (HVAC) units with exterior fans or condensers mounted on the ground or roofs have the potential to produce noise in excess of the City's limits. Mixed use developments would also generate noise from commercial-related mechanical equipment, loading docks, deliveries, trash-hauling activities and customer and employee use of commercial facilities. Stationary noise sources such as these are considered "point sources" and attenuate over distance at a rate of 6 dB(A) for each doubling of distance.

4.10.4.3 Construction Noise and Vibration

a. Construction Noise

No specific construction or development is proposed under the HEU at this time, but construction would occur with future development of the housing sites. Future development could potentially result in temporary ambient noise increase due to construction activities.

Construction noise would be generated by diesel-powered construction equipment used for site preparation and grading, removal of existing structures and pavement, loading, unloading and placing materials and paving. Diesel engine-driven trucks also would bring materials to the site and remove the spoils from excavation.

Under load conditions, diesel engine noise levels may be 85 to 90 dB(A) at a distance of 50 feet from the equipment (Federal Highway Administration [FHWA] 2006). Occasional pavement breaking would be performed, which would generate noise levels of 90 dB(A) at 50 feet from the equipment (FHWA 2006). Construction equipment noise is considered a "point source" and attenuates over distance at a rate of 6 dB(A) for each doubling of

distance. Thus, a noise level of 85 dB(A) at 50 feet would be 79 dB(A) at 100 feet and 73 dB(A) at 200 feet from the source.

During excavating, grading and paving operations, equipment moves to different locations and goes through varying load cycles, and there are breaks for the operators and for non-equipment tasks. Although maximum noise levels may be 85 to 90 dB(A) at a distance of 50 feet during most construction activities, hourly average noise levels would be 82 dB(A) at 50 feet from the center of construction activity when assessing the loudest pieces of equipment working simultaneously.

b. Construction Vibration

Construction activities have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. Representative vibration source levels were obtained from the FTA (2006) and were evaluated at the nearest structure to the project site. Vibration perception would occur at structures, as people do not perceive vibrations without vibrating structures. The ground vibration levels associated with various types of construction equipment are summarized in Table 4.10-6.

Table 4.10-6
Representative Vibration Source Levels for Construction Equipment

Equipment	PPV at 25 feet (in/sec)
Pile Drive (impacts)	Upper range – 1.518 Typical – 0.644
Pile Driver (sonic)	Upper range – 0.734 Typical – 0.170
Large Bulldozer	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003
SOURCE: FTA 2006.	

4.10.4.4 Future Project Implementation

As noted previously in this chapter, the City has established noise guidelines and regulations in the City's General Plan Noise Element and the Municipal Code. Please note that the proposed amendments to the Noise Element do not alter noise performance standards and policy-based regulations. The City would review future project applications for compatibility, applicable requirements for noise, and require specific conditions as part of the approval process. Adoption of the ~~HEU floating~~new zone would not alter the City's adopted discretionary review process. Redevelopment of any of the housing sites may occur with or without implementation of the ~~HEU floating~~new zone.

The impact analysis describes the type and magnitude of the potential environmental impacts of future development on the housing sites and how such impacts would affect the existing environment. Future development has the potential to result in noise impacts.

The analysis in the following section identifies operational (mobile and stationary) and construction noise impacts, the significance of impacts and a mitigation framework for future projects. Subsequent "by right" development within the new ~~floating~~ zone district created through the HEU would not be subject to further CEQA review to analyze project-level impacts related to noise, unless otherwise noted. Compliance with development standards required for "by right" development as well as the mitigation framework identified in this PEIR would serve to minimize the potential for significant impacts associated with implementation of the HEU.

4.10.5 Issue 1: Ambient Noise Levels

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

4.10.5.1 Impacts

A significant impact would occur if future development associated with the ~~HEU floating~~ new zone program results in or creates a significant increase in ambient noise levels compared to the existing condition. Studies have shown that the average human ear can barely perceive a change in sound level of 3 dB(A). A change of at least 5 dB(A) is considered a readily perceivable change in a normal environment. A 10 dB(A) increase is subjectively heard as a doubling in loudness and would cause a community response.

As stated in the adopted Noise Element of the General Plan, if a project would increase the traffic noise level by more than 5 dB and the resulting L_{dn} would be over 55 dB, then mitigation measures must be evaluated. If the project, or action, would increase traffic noise levels by 3 dB or more and the resulting L_{dn} would exceed 60 dB in outdoor use areas in residential development, noise mitigation must be similarly evaluated. Therefore, based on these concepts of increase and perception, if buildout of the HEU would result in a traffic noise increase of 5 dB or more and a resulting noise level over 55 L_{dn} at a residential use, then the impact would be considered significant. Additionally, if buildout of the HEU would result in a traffic noise increase of 3 dB or more and a resulting noise level over 60 L_{dn} at a residential use, then the impact would be considered significant.

a. Housing Sites

Future development of the housing sites under the ~~Floating Zone Program~~new zone program would result in increased traffic beyond the existing condition. As noted above, a traffic noise increase of 3 dB would occur when the traffic volume on a roadway doubles. Given the largely developed nature of the City, buildout of an individual housing site alone is not likely to double the traffic volume on a roadway. As discussed in subsection b, there would be an increase in existing ambient noise levels with or without buildout of the housing sites. This is due to the increase in regional growth that would occur with or without implementation of the ~~HEU Floating Zone Program~~new zone program. Due to the nature of traffic modeling, future traffic volumes associated with buildout of the HEU are identified on a strategy-wide basis. Neither traffic nor traffic noise impacts can be

identified on a site-specific basis. Therefore, no analysis relative to the impacts associated with individual housing sites is feasible.

b. Housing Strategy Summaries

Housing Strategy 1 – Ready Made (RM)

Table 4.10-7 summarizes the existing traffic volumes and noise levels, the future traffic volumes and noise levels without implementation of the HEU, and the future traffic volumes and noise levels associated with buildout of housing strategy 1 (RM). Impacts were assessed by comparing existing noise levels to future noise levels with implementation of the HEU housing strategy 1 (RM). When compared to the existing condition, a noise increase of 3 dB or greater would occur adjacent to Carlsbad Boulevard between Avenida Encinas and La Costa Avenue where the existing noise level is 70 CNEL and the future noise level is projected to be 73 CNEL, Village Park Way between Parkdale Drive and Encinitas Boulevard where the existing noise level is 65 CNEL and the future noise level is projected to be 68 CNEL, and Manchester Avenue between Encinitas Boulevard and El Camino Real where the existing noise level is 64 CNEL and the future noise level is projected to be 68 CNEL. There are existing sensitive land uses located adjacent to these roadway segments. However, this increase would be due to cumulative regional growth. To evaluate the HEU's contribution to the noise increase, future traffic volumes were compared to buildout of the no project condition (development under the adopted general plan). When compared to buildout of the no project condition, the increase in ambient noise attributed to housing strategy 1 (RM) would be less than 3 dB adjacent to all roadway segments. Impacts would be less than significant. It should also be noted that there would be an increase in existing ambient noise levels without buildout of housing strategy 1 (RM). This is due to the increase in regional growth that would occur with or without implementation of the proposed HEU.

Table 4.10-7
Housing Strategy 1 (RM) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 1 Buildout ADT	Housing Strategy 1 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 1 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 1 and Buildout of No Project Condition	Cumulative Impact?
Carlsbad Blvd.	Between Avenida Encinas and La Costa Ave.	12,160	70	25,300	73	25,500	73	3.2	0.0	NO
	Between Poinsettia Lane and Avenida Encinas	16,194	71	24,700	73	25,400	73	2.0	0.1	NO
Highway 101	Between La Costa Ave. and 600 feet south of La Costa Ave.	18,070	69	19,900	70	21,600	70	0.7	0.3	NO
	Between 600 feet south of La Costa Ave. and Leucadia Blvd	17,378	69	18,100	69	20,500	70	0.7	0.5	NO
	Between Leucadia Blvd. and Cadmus St.	19,145	69	19,900	70	20,900	70	0.4	0.2	NO
	Between Cadmus St. and Marcheta St.	19,145	69	19,900	70	20,900	70	0.4	0.2	NO
	Between Marcheta St. and 660 feet south of Marcheta St.	19,145	69	19,900	70	20,900	70	0.4	0.2	NO
	Between 660 feet south of Marcheta St. and Encinitas Blvd	19,145	69	19,900	70	19,300	69	0.1	-0.1	NO
	Between Encinitas Blvd. and D St.	18,746	67	19,400	67	19,200	67	0.1	-0.1	NO
	Between D St. and E St.	18,746	67	19,400	67	19,200	67	0.1	-0.1	NO
	Between E St. and F St.	18,746	67	19,400	67	19,200	67	0.1	-0.1	NO
	Between F St. and H St.	18,746	67	19,400	67	19,200	67	0.1	-0.1	NO
	Between H St. and J St.	20,337	67	21,100	67	20,800	67	0.1	-0.1	NO
	Between J St. and Swamis Ped Crossing	20,337	71	21,100	71	20,800	71	0.1	-0.1	NO
	Between Swami's Ped Crossing and San Elijo State Beach	20,550	71	21,300	71	21,000	71	0.1	-0.1	NO
	Between San Elijo State Beach and Chesterfield	20,682	71	21,300	71	21,500	71	0.1	0.0	NO
	Between Chesterfield and Cardiff State Beach	20,682	71	23,200	71	23,300	71	0.5	0.0	NO
	Between Cardiff Beach State and Chart House	20,682	71	23,200	71	23,300	71	0.5	0.0	NO
	Between Chart House and Las Olas Mexican Restaurant	20,682	71	23,200	71	23,300	71	0.5	0.0	NO
	Between Las Olas Mexican Restaurant and ~~Cardiff by the sea~~City of Solana Beach limits	20,682	71	23,200	71	23,300	71	0.5	0.0	NO
	Between City of Solana Beach ~~Cardiff by the sea~~ limits and West Cliff St.	18,611	70	22,500	71	22,600	71	0.9	0.1	NO
	Between West Cliff and Lomas Santa Fe	18,611	70	25,000	72	25,100	72	1.3	0.0	NO
	Between Lomas Santa Fe Dr. and Via de la Valle	17,056	70	23,600	71	23,300	71	1.4	0.0	NO

Table 4.10-7
Housing Strategy 1 (RM) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 1 Buildout ADT	Housing Strategy 1 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 1 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 1 and Buildout of No Project Condition	Cumulative Impact?
Vulcan Ave.	Between La Costa Ave. and Leucadia Blvd.	3,621	~~61~~62	7,000	~~64~~65	7,200	~~64~~65	2.9	0.1	NO
	Between Leucadia Blvd. and Encinitas Blvd.	6,221	~~63~~64	7,500	~~64~~65	7,700	~~64~~65	0.9	0.1	NO
	Between Encinitas Blvd. and D St.	10,368	67	12,900	68	13,400	68	1.1	0.2	NO
	Between D St. and E St.	10,368	67	12,900	68	13,400	68	1.1	0.2	NO
	Between E St. and Santa Fe Dr.	10,486	67	13,100	68	13,600	68	1.1	0.1	NO
San Elijo	Between Santa Fe Dr. and Birmingham Dr.	9,332	65	10,100	65	10,000	65	0.3	0.0	NO
	Between Birmingham Dr. and Chesterfield Dr.	9,332	65	12,500	66	12,900	66	1.4	0.2	NO
	Between Chesterfield Dr. and Manchester Ave.	9,332	62	9,500	62	13,200	64	1.5	1.5	NO
Saxony Rd.	Between La Costa Ave. and Quail ~~Gardens~~ Hollow Dr.	3,137	63	4,600	64	4,700	64	1.7	0.1	NO
	Between Quail ~~Gardens~~ Hollow Dr. and Normandy Rd.	2,858	60	3,400	61	3,500	61	0.9	0.1	NO
	Between Normandy Rd. and Brittany Ave.	2,858	60	3,900	61	4,000	61	1.5	0.1	NO
	Between Brittany Ave. and Leucadia Blvd.	2,858	60	3,500	61	3,400	61	0.8	-0.1	NO
	Between Leucadia Blvd. and Silver Berry Place	8,973	66	11,800	67	11,800	67	1.2	0.0	NO
	Between Silver Berry Place and Encinitas Blvd.	8,973	66	13,800	68	13,900	68	1.9	0.0	NO
Quail Hollow Dr.	Between Swallow Tail Rd. and Saxony Rd.	3,235	~~58~~60	5,000	~~60~~62	5,000	~~60~~62	1.9	0.0	NO
Quail Gardens Dr.	Between Swallow Tail Rd. and Lauren Court	3,235	62	4,900	63	4,900	63	1.8	0.0	NO
	Between Lauren Court and Leucadia Blvd.	3,235	62	5,300	64	5,300	64	2.1	0.0	NO
	Between Leucadia Blvd. and Paseo ~~d~~De ~~l~~Las Flores	7,897	66	9,100	66	9,300	66	0.7	0.1	NO
	Between Paseo ~~d~~De ~~l~~Las Flores and Paseo ~~d~~De ~~l~~Las Verdes	7,897	66	8,900	66	9,000	66	0.5	0.0	NO
	Between Paseo ~~d~~De ~~l~~Las Verdes and Encinitas Blvd.	7,897	66	8,200	66	8,500	66	0.3	0.2	NO
Westlake St.	Between Encinitas Blvd. and Requeza St.	9,688	64	11,800	65	11,900	65	0.9	0.1	NO
Nardo Dr.	Between Requeza St. and Melba Rd.	4,871	59	5,100	60	5,200	60	0.3	0.1	NO
	Between Melba Rd. and Santa Fe Dr.	4,871	59	5,100	60	5,200	60	0.3	0.1	NO

Table 4.10-7
Housing Strategy 1 (RM) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 1 Buildout ADT	Housing Strategy 1 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 1 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 1 and Buildout of No Project Condition	Cumulative Impact?
MacKinnon Ave.	Between Santa Fe Dr. and Villa Cardiff Dr.	5,413	63	6,200	63	6,300	63	0.7	0.1	NO
Villa Cardiff Drive	Between MacKinnon Ave. and Windsor Rd.	5,413	63	6,500	63	6,600	63	0.9	0.1	NO
	Between Windsor Rd. and Birmingham Dr.	5,413	63	5,700	63	6,100	63	0.5	0.3	NO
Garden View Rd.	Between Leucadia Blvd. and Via Cantebria	10,722	67	11,500	67	11,400	67	0.3	0.0	NO
	Between Via Cantebria and El Camino Real	9,663	66	12,900	68	12,900	68	1.2	0.0	NO
Town Center Place	Between Leucadia Blvd. and Town Center Place	14,817	64	20,000	66	20,100	66	1.3	0.0	NO
	Between Town Center Place and Town Center Dr.	14,817	64	17,800	65	17,900	65	0.8	0.0	NO
Via Cantebria	Between Town Center Dr. and Garden View Rd.	8,524	62	15,800	65	15,900	65	2.7	0.0	NO
	Between Garden View Rd. and Forrest Bluff	13,715	68	14,900	68	14,900	68	0.3	0.0	NO
	Between Forrest Bluff and Via Montoro	13,715	68	15,200	68	15,300	68	0.5	0.1	NO
	Between Via Montoro and Via Molena	16,842	69	17,900	69	17,000	69	0.0	-0.2	NO
	Between Via Molena and Encinitas Blvd.	16,842	69	17,500	69	17,800	69	0.2	0.1	NO
Balour Dr.	Between Encinitas Blvd. and Melba Rd.	7,988	64	11,200	66	11,200	66	1.5	0.0	NO
	Between Melba Rd. and Santa Fe Dr.	7,988	62	10,700	63	11,000	63	1.4	0.1	NO
Lake Dr.	Between Santa Fe Dr. and Woodlake Dr.	6,565	63	6,600	63	6,600	63	0.1	0.0	NO
	Between Woodlake Dr. and Birmingham Dr.	6,565	63	6,600	63	6,600	63	0.1	0.0	NO
El Camino Real	Between Aviara Parkway and La Costa Ave.	43,934	76	54,300	77	54,500	77	0.9	0.0	NO
	Between La Costa Ave. and Calle Barcelona	34,929	75	38,400	76	38,400	76	0.4	0.0	NO
	Between Calle Barcelona and City of Carlsbad boundary	34,929	75	36,500	76	36,400	76	0.2	0.0	NO
	Between City of Carlsbad boundary and Leucadia Blvd.	43,939	76	46,700	77	46,500	77	0.2	-0.1	NO
	Between Leucadia Blvd. and Town Center Dr.	43,939	74	58,600	75	58,300	75	1.3	0.0	NO
	Between Town Center Dr. and Garden View Rd.	43,939	74	54,200	75	54,100	75	1.0	0.0	NO
	Between Garden View Rd. and 331-339 El Camino Real	39,969	71	42,900	72	43,000	72	0.3	0.0	NO
	Between 331-339 El Camino Real and Via Montoro	39,969	71	48,900	72	49,100	72	0.9	0.0	NO
	Between Via Montoro and Mountain Vista	39,969	71	44,300	72	44,600	72	0.5	0.1	NO
	Between Mountain Vista and Via Molena	41,968	71	47,000	72	46,700	72	0.5	0.0	NO
	Between Via Molena and Encinitas Blvd.	41,968	71	56,900	73	57,200	73	1.3	0.0	NO
	Between Encinitas Blvd. and 213 S El Camino Real	33,151	72	39,400	73	39,500	73	0.8	0.0	NO

Table 4.10-7
Housing Strategy 1 (RM) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 1 Buildout ADT	Housing Strategy 1 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 1 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 1 and Buildout of No Project Condition	Cumulative Impact?
	Between 213 S El Camino Real and Crest Dr.	33,151	72	33,800	72	33,800	72	0.1	0.0	NO
	Between Crest Dr. and Willowspring Dr.	33,151	72	36,200	72	35,400	72	0.3	-0.1	NO
	Between Willowspring Dr. and Santa Fe Dr.	33,151	72	37,500	72	36,800	72	0.5	0.0	NO
	Between Santa Fe Dr. and Sage Canyon Dr.	23,024	74	28,400	74	27,600	74	0.8	-0.1	NO
	Between Sage Canyon Dr. and Manchester Ave.	23,024	74	27,700	74	26,800	74	0.6	-0.2	NO
Village Park Way	Between Mountain Vista Dr. and Parkdale Dr.	6,341	65	10,900	67	11,000	67	2.4	0.0	NO
	Between Parkdale Dr. and Encinitas Blvd.	6,341	65	14,200	68	14,200	68	3.5	0.0	NO
Rancho Santa Fe Rd.	Between Olivenhain Rd. and Calle Acervo	17,363	70	17,400	70	17,400	70	0.0	0.0	NO
	Between Calle Acervo/Avenida La Posta and Olive Crest Dr.	14,901	68	15,900	69	16,400	69	0.5	0.2	NO
	Between Olive Crest Dr. and 13th St.	14,901	68	15,800	69	16,300	69	0.4	0.1	NO
	Between 13th St. and 11th St.	14,901	68	15,700	69	16,200	69	0.4	0.1	NO
	Between 11th St. and El Camino Del Norte	15,146	68	15,800	69	16,300	69	0.3	0.1	NO
	Between El Camino Del Norte and 9th St.	13,236	68	13,300	68	13,700	68	0.2	0.2	NO
	Between 9th St. and 8th St.	13,236	68	13,500	68	13,800	68	0.2	0.1	NO
	Between 8th St. and 7th St.	13,236	68	13,900	68	14,300	68	0.4	0.2	NO
	Between 7th St. and Encinitas Blvd.	13,236	68	15,200	68	18,300	69	1.4	0.8	NO
Manchester Ave.	Between Manchester Ave. and Mira Costa College	19,595	72	35,400	74	35,200	74	2.5	0.0	NO
	Between Mira Costa College and I-5 NB On-Ramp	19,595	72	35,700	74	35,400	74	2.5	-0.1	NO
	Between I-5 NB Ramps and I-5 SB Ramps	26,567	71	40,200	73	40,000	73	1.8	0.0	NO
	Between I-5 SB Ramps and Ocean Cove Dr.	7,598	65	11,900	67	11,800	67	1.9	-0.1	NO
	Between Ocean Cove Dr. and Seaside Cardiff-by-the-sea residential area Driveway	7,598	65	11,900	67	11,700	67	1.9	-0.1	NO
	Between Seaside Cardiff-by-the-sea residential area Driveway and San Elijo Water Reclamation Facility Driveway	7,598	65	11,900	67	11,700	67	1.9	-0.1	NO
	Between San Elijo Water Reclamation Facility Driveway and Manchester Ave.	7,598	65	11,800	67	11,600	67	1.8	-0.1	NO
	Between Encinitas Blvd. and El Camino Real	5,989	64	12,300	67	13,200	68	3.4	0.3	NO

Table 4.10-7
Housing Strategy 1 (RM) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 1 Buildout ADT	Housing Strategy 1 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 1 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 1 and Buildout of No Project Condition	Cumulative Impact?
La Costa Ave.	Between Highway 101 and Vulcan Ave.	11,888	67	16,400	69	17,500	69	1.6	0.2	NO
	Between Vulcan Ave. and Sheridan Rd.	14,258	68	16,300	69	17,300	69	0.9	0.3	NO
	Between Sheridan Rd. and I-5 SB Ramps	14,258	68	22,000	70	22,800	70	2.1	0.2	NO
	Between I-5 SB Ramps and I-5 NB Ramps	25,817	71	29,300	71	29,900	71	0.7	0.1	NO
	Between I-5 NB Ramps and Piraeus St.	36,550	76	39,500	76	39,600	76	0.3	0.0	NO
	Between Piraeus St. and Saxony Rd.	36,550	76	39,600	76	39,700	76	0.4	0.1	NO
	Between Saxony Rd. and El Camino Real	37,683	76	42,000	76	42,100	76	0.5	0.0	NO
	Between El Camino Real and La Costa Towne Center traffic signal	15,999	69	20,700	70	20,800	70	1.2	0.0	NO
	Between La Costa Towne Center traffic signal and Fairway Lane	15,999	69	20,900	70	21,000	70	1.2	0.0	NO
	Between Fairway Lane and Calle Madero	15,999	69	20,700	70	20,800	70	1.2	0.0	NO
Leucadia Blvd	Between Highway 101 and Vulcan Ave.	12,188	66	14,300	67	15,900	67	1.2	0.5	NO
	Between Vulcan Ave. and Hermes Ave.	14,933	67	16,300	67	17,500	68	0.7	0.3	NO
	Between Hermes Ave. and Hygeia Ave.	14,933	67	15,700	67	16,900	68	0.6	0.4	NO
	Between Hygeia Ave. and Hymettus Ave.	14,933	67	17,400	68	15,000	67	0.0	-0.7	NO
	Between HymettusAve. and Orpheus Ave.	14,933	67	19,200	68	20,400	68	1.4	0.3	NO
	Between Orpheus Ave. and I-5 SB Ramps	14,933	68	17,700	69	15,300	68	0.2	-0.6	NO
	Between I-5 SB Ramps and I-5 NB Ramps	22,721	68	28,600	69	29,600	69	1.1	0.1	NO
	Between Piraeus St. and Urania Ave.	38,099	72	44,100	73	45,000	73	0.7	0.1	NO
	Between Urania Ave. and Saxony Rd.	38,099	72	44,100	73	45,000	73	0.7	0.1	NO
	Between Saxony Rd. and Sidonia St.	40,117	73	42,400	73	42,500	73	0.3	0.0	NO
	Between Sidonia St. and Quail Gardens Dr.	40,117	73	42,400	73	42,500	73	0.3	0.0	NO
	Between Quail Gardens Dr. and Garden View Rd.	43,786	74	47,100	74	47,200	75	0.4	0.1	NO
	Between Garden View Rd. and Town Center Place	31,439	73	34,700	73	31,900	73	0.1	-0.3	NO
	Between Town Center Place and El Camino Real	34,214	73	39,000	74	39,400	74	0.6	0.1	NO
Mountain Vista Dr.	Between El Camino Real and Wandering Rd.	11,478	68	15,000	70	15,100	70	1.2	0.0	NO
	Between Wandering Rd. and Village Park Way	7,093	66	9,300	67	9,300	67	1.2	0.0	NO
Lone Jack Dr.	Between Rancho Santa Fe Rd. and northern terminus	6,745	65	8,400	66	8,200	66	0.8	-0.1	NO

Table 4.10-7
Housing Strategy 1 (RM) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 1 Buildout ADT	Housing Strategy 1 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 1 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 1 and Buildout of No Project Condition	Cumulative Impact?
El Camino Del Norte	Between Rancho Santa Fe Rd. and San Dieguito CPA boundary	6,915	65	7,900	66	7,800	65	0.5	-0.1	NO
	Between San Dieguito CPA boundary to Via De Fortuna	6,915	65	7,800	65	7,500	65	0.4	-0.1	NO
Encinitas Blvd	Between Highway 101 and Vulcan Ave.	21,095	70	22,300	70	23,600	70	0.5	0.2	NO
	Between Vulcan Ave. and Days Inn traffic signal	20,790	70	34,100	72	35,200	72	2.3	0.2	NO
	Between Days Inn traffic signal and I-5 SB Ramps	20,790	70	34,100	72	35,200	72	2.3	0.2	NO
	Between I-5 SB Ramps and I-5 NB Ramps	32,420	72	38,500	72	39,400	73	0.9	0.1	NO
	Between I-5 NB Ramps and Saxony Rd.	38,312	72	41,400	73	42,100	73	0.4	0.0	NO
	Between Saxony Rd. and Calle Magdalena	31,737	72	35,400	72	35,800	72	0.5	0.0	NO
	Between Calle Magdalena and Encinitas Town Country traffic signal	31,737	72	40,000	73	40,500	73	1.1	0.1	NO
	Between Encinitas Town Country traffic signal and Quail Gardens Dr.	31,737	72	36,000	72	36,600	72	0.6	0.0	NO
	Between Quails Garden Dr. and Delphinium St.	27,446	72	37,700	74	38,300	74	1.5	0.1	NO
	Between Delphinium St. and Balour Dr.	27,446	72	38,300	74	38,600	74	1.5	0.0	NO
	Between Balour Dr. and Via Cantebria	38,142	74	47,500	75	47,800	75	1.0	0.0	NO
	Between Via Cantebria and El Camino Real	26,806	72	29,400	72	29,500	72	0.4	0.0	NO
	Between El Camino Real and Village Square Dr.	28,841	72	31,000	73	31,300	73	0.4	0.1	NO
	Between Village Square Dr. and Turner Ave.	28,841	72	29,300	72	29,800	73	0.2	0.1	NO
	Between Turner Ave. and Cerro St.	28,841	72	29,300	72	29,800	73	0.2	0.1	NO
	Between Cerro St. and Village Park Way	28,841	72	29,700	72	30,300	73	0.2	0.1	NO
	Between Village Park Way to Willowspring Dr.	22,619	71	27,900	72	28,800	72	1.0	0.1	NO
	Between Willowspring Dr. to Rancho Santa Fe Rd.	22,619	71	22,700	71	23,700	72	0.2	0.2	NO
S Rancho Santa Fe Rd.	Between Manchester Ave. and 770 feet east of Manchester Ave.	18,476	70	18,600	70	19,400	71	0.2	0.2	NO
	Between 770 feet east of Manchester Ave. and San Dieguito CPA boundary	18,476	70	18,600	70	19,400	71	0.2	0.2	NO

Table 4.10-7
Housing Strategy 1 (RM) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 1 Buildout ADT	Housing Strategy 1 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 1 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 1 and Buildout of No Project Condition	Cumulative Impact?
F St./Requeza St.	Between Vulcan Ave. and Cornish Dr.	5,631	60	6,200	61	6,200	61	0.4	0.0	NO
	Between Cornish Dr. and San Dieguito Dr.	5,631	60	6,300	61	6,700	61	0.7	0.2	NO
	Between San Dieguito Dr. and Stratford Dr.	5,631	60	6,300	61	6,700	61	0.7	0.2	NO
	Between Stratford Dr. and Regal Rd.	5,631	60	6,800	61	7,200	61	1.0	0.2	NO
	Between Regal Rd. and West Lake Dr.	5,631	60	6,400	61	6,500	61	0.6	0.1	NO
	Between West Lake Dr. and Nardo Dr.	4,516	59	4,800	59	4,900	60	0.4	0.1	NO
Santa Fe Dr.	Between Vulcan Ave. and Cornish Dr.	8,554	65	9,000	65	8,800	65	0.1	-0.1	NO
	Between Cornish Dr. and Summit Ave.	8,554	65	9,000	65	9,500	65	0.4	0.2	NO
	Between Summit Ave. and Devonshire	8,554	65	10,100	65	10,400	65	0.8	0.1	NO
	Between Devonshire Dr. and Driveway	12,974	66	15,200	67	15,800	67	0.9	0.2	NO
	Between Driveway and I-5 SB Ramps	12,974	66	15,200	67	15,800	67	0.9	0.2	NO
	Between I-5 SB Ramps and I-5 NB Ramps	19,070	68	22,400	69	23,200	69	0.8	0.1	NO
	Between I-5 NB Ramps and Regal Rd.	13,743	67	16,100	67	16,700	67	0.8	0.2	NO
	Between Regal Rd. and Gardena Rd.	13,743	67	16,100	67	16,700	67	0.8	0.2	NO
	Between Gardena Rd. and Nardo Rd.	13,743	67	16,100	67	16,700	67	0.8	0.2	NO
	Between Nardo Rd. and Windsor Rd./Bonita Dr.	15,036	67	17,700	68	18,300	68	0.9	0.1	NO
	Between Windsor Rd./Bonita Dr. and Balour Dr.	15,036	67	17,700	68	18,300	68	0.9	0.1	NO
	Between Balour Dr. and Lake Dr.	15,817	67	18,600	68	19,200	68	0.8	0.1	NO
	Between Lake Dr. and Crest Dr.	15,107	67	17,700	68	18,400	68	0.8	0.1	NO
	Between Crest Dr. and El Camino Real	15,107	67	17,700	68	18,400	68	0.8	0.1	NO
Birmingham Dr.	Between San Elijo Ave. and Newcastle Ave.	14,588	66	15,500	66	15,400	66	0.2	0.0	NO
	Between Newcastle Ave. and Manchester Ave.	14,588	66	15,500	66	15,400	66	0.2	0.0	NO
	Between Manchester Ave. and Montgomery Ave.	14,588	66	15,500	66	15,400	66	0.2	0.0	NO
	Between Montgomery Ave. and Cambridge Ave.	14,588	66	14,600	66	15,400	66	0.2	0.2	NO
	Between Cambridge Ave. and MacKinnon Ave.	14,588	66	15,500	66	15,400	66	0.2	0.0	NO
	Between MacKinnon Ave. and Carol View Dr.	14,588	66	19,500	67	19,600	67	1.2	0.0	NO
	Between Carol View Dr. and I-5 SB Ramps	14,588	66	19,500	67	19,600	67	1.2	0.0	NO
	Between I-5 SB Ramps and I-5 NB Ramps	16,342	69	21,800	70	21,900	70	1.3	0.0	NO
	Between I-5 NB Ramps and Villa Cardiff Dr.	8,248	66	13,200	68	13,500	68	2.1	0.1	NO
	Between Villa Cardiff Dr. and Playa Rivera	8,248	64	11,600	66	11,600	66	1.5	0.0	NO
	Between Playa Rivera and Freda Lane	8,248	64	13,100	66	13,100	66	2.0	0.0	NO
	Between Freda Lane and Lake Dr.	8,248	64	8,700	65	8,600	65	0.2	-0.1	NO

Housing Strategy 2 – Build Your Own (BYO)

Table 4.10-8 summarizes the existing traffic volumes and noise levels, the future traffic volumes and noise levels without implementation of the HEU, and the future traffic volumes and noise levels associated with buildout of housing strategy 2 (BYO). When compared to the existing condition, a noise increase of 3 dB or greater would occur adjacent to Carlsbad Boulevard between Avenida Encinas and La Costa Avenue where the existing noise level is 70 CNEL and the future noise level is projected to be 73 CNEL, Village Park Way between Parkdale Drive and Encinitas Boulevard where the existing noise level is 65 CNEL and the future noise level is projected to be 68 CNEL, and Manchester Avenue between Encinitas Boulevard and El Camino Real where the existing noise level is 64 CNEL and the future noise level is projected to be 68 CNEL. There are existing sensitive land uses located adjacent to these roadway segments. However, this increase would be due to cumulative regional growth. To evaluate the HEU's contribution to the noise increase, future traffic volumes were compared to buildout of the no project condition (development under the adopted general plan). When compared to buildout of the no project condition, the increase in ambient noise attributed to housing strategy 2 (BYO) would be less than 3 dB adjacent to all roadway segments. Impacts would be less than significant. As with housing strategy 1 (RM), because of the increase in regional growth that would occur with or without implementation of the HEU, there would be an increase in existing ambient noise levels with or without buildout of housing strategy 2 (BYO).

Table 4.10-8
Housing Strategy 2 (BYO) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 2 Buildout ADT	Housing Strategy 2 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 2 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 2 and No Project Condition	Cumulative Impact?
Carlsbad Blvd.	Between Avenida Encinas and La Costa Ave.	12,160	70	25,300	73	25,400	73	3.2	0.0	NO
	Between Poinsettia Lane and Avenida Encinas	16,194	71	24,700	73	25,100	73	1.9	0.0	NO
Highway 101	Between La Costa Ave. and 600 feet south of La Costa Ave.	18,070	69	19,900	70	21,200	70	0.7	0.3	NO
	Between 600 feet south of La Costa Ave. and Leucadia Blvd	17,378	69	18,100	69	19,900	70	0.6	0.4	NO
	Between Leucadia Blvd. and Cadmus St.	19,145	69	19,900	70	20,500	70	0.3	0.1	NO
	Between Cadmus St. and Marcheta St.	19,145	69	19,900	70	20,500	70	0.3	0.1	NO
	Between Marcheta St. and 660 feet south of Marcheta St.	19,145	69	19,900	70	20,500	70	0.3	0.1	NO
	Between 660 feet south of Marcheta St. and Encinitas Blvd	19,145	69	19,900	70	19,200	69	0.0	-0.2	NO
	Between Encinitas Blvd. and D St.	18,746	67	19,400	67	19,100	67	0.1	-0.1	NO
	Between D St. and E St.	18,746	67	19,400	67	19,100	67	0.1	-0.1	NO
	Between E St. and F St.	18,746	67	19,400	67	19,100	67	0.1	-0.1	NO
	Between F St. and H St.	18,746	67	19,400	67	19,100	67	0.1	-0.1	NO
	Between H St. and J St.	20,337	67	21,100	67	20,700	67	0.1	-0.1	NO
	Between J St. and Swamis Ped Crossing	20,337	71	21,100	71	20,700	71	0.1	-0.1	NO
	Between Swami's Ped Crossing and San Elijo State Beach	20,550	71	21,300	71	20,900	71	0.1	-0.1	NO
	Between San Elijo State Beach and Chesterfield	20,682	71	21,300	71	21,400	71	0.1	0.0	NO
	Between Chesterfield and Cardiff State Beach	20,682	71	23,200	71	23,300	71	0.5	0.0	NO
	Between Cardiff Beach State and Chart House	20,682	71	23,200	71	23,300	71	0.5	0.0	NO
	Between Chart House and Las Olas Mexican Restaurant	20,682	71	23,200	71	23,300	71	0.5	0.0	NO
	Between Las Olas Mexican Restaurant and City of Solana Beach ~~Cardiff by the sea~~ limits	20,682	71	23,200	71	23,300	71	0.5	0.0	NO
	Between City of Solana Beach ~~Cardiff by the sea~~ limits and West Cliff St.	18,611	70	22,500	71	22,700	71	0.9	0.1	NO
	Between West Cliff and Lomas Santa Fe	18,611	70	25,000	72	25,100	72	1.3	0.0	NO

Table 4.10-8
Housing Strategy 2 (BYO) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 2 Buildout ADT	Housing Strategy 2 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 2 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 2 and No Project Condition	Cumulative Impact?
	Between Lomas Santa Fe Dr. and Via de la Valle	17,056	70	23,600	71	23,600	71	1.4	0.0	NO
Vulcan Ave.	Between La Costa Ave. and Leucadia Blvd.	3,621	~~61~~62	7,000	~~64~~65	7,200	~~64~~65	2.9	0.1	NO
	Between Leucadia Blvd. and Encinitas Blvd.	6,221	~~63~~64	7,500	~~64~~65	7,500	~~64~~65	0.8	0.0	NO
	Between Encinitas Blvd. and D St.	10,368	67	12,900	68	13,300	68	1.0	0.1	NO
	Between D St. and E St.	10,368	67	12,900	68	13,300	68	1.0	0.1	NO
	Between E St. and Santa Fe Dr.	10,486	67	13,100	68	13,500	68	1.1	0.1	NO
San Elijo	Between Santa Fe Dr. and Birmingham Dr.	9,332	65	10,100	65	10,100	65	0.3	0.0	NO
	Between Birmingham Dr. and Chesterfield Dr.	9,332	65	12,500	66	12,600	66	1.3	0.1	NO
	Between Chesterfield Dr. and Manchester Ave.	9,332	62	9,500	62	9,500	62	0.0	0.0	NO
Saxony Rd.	Between La Costa Ave. and Quail Hollow ~~Gardens~~ Dr.	3,137	63	4,600	64	4,700	64	1.7	0.1	NO
	Between Quail Hollow ~~Gardens~~ Dr. and Normandy Rd.	2,858	60	3,400	61	3,500	61	0.9	0.1	NO
	Between Normandy Rd. and Brittany Ave.	2,858	60	3,900	61	3,900	61	1.4	0.0	NO
	Between Brittany Ave. and Leucadia Blvd.	2,858	60	3,500	61	3,500	61	0.9	0.0	NO
	Between Leucadia Blvd. and Silver Berry Place	8,973	66	11,800	67	11,900	67	1.3	0.1	NO
	Between Silver Berry Place and Encinitas Blvd.	8,973	66	13,800	68	14,800	68	2.2	0.3	NO
Quail Hollow Dr.	Between Swallow Tail Rd. and Saxony Rd.	3,235	~~58~~60	5,000	~~60~~62	5,000	~~60~~62	1.9	0.0	NO
Quail Gardens Dr.	Between Swallow Tail Rd. and Lauren Court	3,235	62	4,900	63	4,900	63	1.8	0.0	NO
	Between Lauren Court and Leucadia Blvd.	3,235	62	5,300	64	5,300	64	2.1	0.0	NO
	Between Leucadia Blvd. and Paseo D~~d~~e L~~l~~as Flores	7,897	66	9,100	66	8,300	66	0.2	-0.4	NO
	Between Paseo de las Flores and Paseo D~~d~~e L~~l~~as Verdes	7,897	66	8,900	66	8,300	66	0.2	-0.3	NO
	Between Paseo D~~d~~e L~~l~~as Verdes and Encinitas Blvd.	7,897	66	8,200	66	8,700	66	0.4	0.3	NO
Westlake St.	Between Encinitas Blvd. and Requeza St.	9,688	64	11,800	65	16,300	66	2.2	1.4	NO
Nardo Dr.	Between Requeza St. and Melba Rd.	4,871	59	5,100	60	5,600	60	0.6	0.4	NO
	Between Melba Rd. and Santa Fe Dr.	4,871	59	5,100	60	4,900	60	0.1	-0.1	NO
MacKinnon Ave.	Between Santa Fe Dr. and Villa Cardiff Dr.	5,413	63	6,200	63	6,500	63	0.8	0.2	NO
Villa Cardiff Drive	Between MacKinnon Ave. and Windsor Rd.	5,413	63	6,500	63	6,800	64	1.0	0.2	NO
	Between Windsor Rd. and Birmingham Dr.	5,413	63	5,700	63	6,200	63	0.6	0.4	NO

Table 4.10-8
Housing Strategy 2 (BYO) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 2 Buildout ADT	Housing Strategy 2 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 2 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 2 and No Project Condition	Cumulative Impact?
Garden View Rd.	Between Leucadia Blvd. and Via Cantebria	10,722	67	11,500	67	11,400	67	0.3	0.0	NO
	Between Via Cantebria and El Camino Real	9,663	66	12,900	68	12,600	68	1.1	-0.1	NO
Town Center Place	Between Leucadia Blvd. and Town Center Place	14,817	64	20,000	66	20,500	66	1.4	0.1	NO
	Between Town Center Place and Town Center Dr.	14,817	64	17,800	65	17,100	65	0.6	-0.2	NO
Via Cantebria	Between Town Center Dr. and Garden View Rd.	8,524	62	15,800	65	15,500	65	2.6	-0.1	NO
	Between Garden View Rd. and Forrest Bluff	13,715	68	14,900	68	15,000	68	0.4	0.1	NO
	Between Forrest Bluff and Via Montoro	13,715	68	15,200	68	15,400	68	0.5	0.1	NO
	Between Via Montoro and Via Molena	16,842	69	17,900	69	17,300	69	0.1	-0.1	NO
	Between Via Molena and Encinitas Blvd.	16,842	69	17,500	69	18,200	69	0.3	0.2	NO
Balour Dr.	Between Encinitas Blvd. and Melba Rd.	7,988	64	11,200	66	11,500	66	1.6	0.1	NO
	Between Melba Rd. and Santa Fe Dr.	7,988	62	10,700	63	10,700	63	1.3	0.0	NO
Lake Dr.	Between Santa Fe Dr. and Woodlake Dr.	6,565	63	6,600	63	6,600	63	0.1	0.0	NO
	Between Woodlake Dr. and Birmingham Dr.	6,565	63	6,600	63	6,600	63	0.1	0.0	NO
El Camino Real	Between Aviara Parkway and La Costa Ave.	43,934	76	54,300	77	54,700	77	0.9	0.0	NO
	Between La Costa Ave. and Calle Barcelona	34,929	75	38,400	76	38,300	76	0.4	0.0	NO
	Between Calle Barcelona and City of Carlsbad boundary	34,929	75	36,500	76	36,000	75	0.1	-0.1	NO
	Between City of Carlsbad boundary and Leucadia Blvd.	43,939	76	46,700	77	46,200	77	0.2	-0.1	NO
	Between Leucadia Blvd. and Town Center Dr.	43,939	74	58,600	75	58,700	75	1.3	0.0	NO
	Between Town Center Dr. and Garden View Rd.	43,939	74	54,200	75	54,000	75	0.9	-0.1	NO
	Between Garden View Rd. and 331-339 El Camino Real	39,969	71	42,900	72	42,800	72	0.3	0.0	NO
	Between 331-339 El Camino Real and Via Montoro	39,969	71	48,900	72	49,000	72	0.9	0.0	NO
	Between Via Montoro and Mountain Vista	39,969	71	44,300	72	44,400	72	0.4	0.0	NO
	Between Mountain Vista and Via Molena	41,968	71	47,000	72	47,000	72	0.5	0.0	NO
	Between Via Molena and Encinitas Blvd.	41,968	71	56,900	73	58,100	73	1.4	0.1	NO
	Between Encinitas Blvd. and 213 S El Camino Real	33,151	72	39,400	73	39,800	73	0.8	0.0	NO
	Between 213 S El Camino Real and Crest Dr.	33,151	72	33,800	72	33,800	72	0.1	0.0	NO
	Between Crest Dr. and Willowspring Dr.	33,151	72	36,200	72	36,100	72	0.4	0.0	NO
	Between Willowspring Dr. and Santa Fe Dr.	33,151	72	37,500	72	37,600	72	0.6	0.1	NO
	Between Santa Fe Dr. and Sage Canyon Dr.	23,024	74	28,400	74	29,300	75	1.0	0.1	NO

Table 4.10-8
Housing Strategy 2 (BYO) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 2 Buildout ADT	Housing Strategy 2 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 2 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 2 and No Project Condition	Cumulative Impact?
	Between Sage Canyon Dr. and Manchester Ave.	23,024	74	27,700	74	28,600	74	0.9	0.1	NO
Village Park Way	Between Mountain Vista Dr. and Parkdale Dr.	6,341	65	10,900	67	11,000	67	2.4	0.0	NO
	Between Parkdale Dr. and Encinitas Blvd.	6,341	65	14,200	68	14,400	68	3.6	0.1	NO
Rancho Santa Fe Rd.	Between Olivenhain Rd. and Calle Acervo	17,363	70	17,400	70	17,400	70	0.0	0.0	NO
	Between Calle Acervo/Avenida La Posta and Olive Crest Dr.	14,901	68	15,900	69	16,400	69	0.5	0.2	NO
	Between Olive Crest Dr. and 13th St.	14,901	68	15,800	69	16,200	69	0.4	0.1	NO
	Between 13th St. and 11th St.	14,901	68	15,700	69	16,100	69	0.4	0.1	NO
	Between 11th St. and El Camino Del Norte	15,146	68	15,800	69	16,300	69	0.3	0.1	NO
	Between El Camino Del Norte and 9th St.	13,236	68	13,300	68	13,800	68	0.2	0.2	NO
	Between 9th St. and 8th St.	13,236	68	13,500	68	14,000	68	0.3	0.2	NO
	Between 8th St. and 7th St.	13,236	68	13,900	68	14,400	68	0.4	0.2	NO
	Between 7th St. and Encinitas Blvd.	13,236	68	15,200	68	18,300	69	1.4	0.8	NO
Manchester Ave.	Between Manchester Ave. and Mira Costa College	19,595	72	35,400	74	36,700	75	2.7	0.2	NO
	Between Mira Costa College and I-5 NB On-Ramp	19,595	72	35,700	74	36,800	75	2.7	0.1	NO
	Between I-5 NB Ramps and I-5 SB Ramps	26,567	71	40,200	73	40,700	73	1.9	0.1	NO
	Between I-5 SB Ramps and Ocean Cove Dr.	7,598	65	11,900	67	12,000	67	2.0	0.0	NO
	Between Ocean Cove Dr. and Seaside Cardiff-by-the-sea residential area driveway	7,598	65	11,900	67	11,900	67	2.0	0.0	NO
	Between Seaside Cardiff-by-the-sea residential area driveway and San Elijo Water Reclamation Facility Driveway	7,598	65	11,900	67	11,900	67	2.0	0.0	NO
	Between San Elijo Water Reclamation Facility Driveway and Manchester Ave.	7,598	65	11,800	67	11,800	67	1.9	0.0	NO
Manchester Ave.	Between Encinitas Blvd. and El Camino Real	5,989	64	12,300	67	13,500	68	3.5	0.4	NO
La Costa Ave.	Between Highway 101 and Vulcan Ave.	11,888	67	16,400	69	17,100	69	1.5	0.1	NO
	Between Vulcan Ave. and Sheridan Rd.	14,258	68	16,300	69	17,000	69	0.8	0.2	NO
	Between Sheridan Rd. and I-5 SB Ramps	14,258	68	22,000	70	22,600	70	2.0	0.1	NO
	Between I-5 SB Ramps and I-5 NB Ramps	25,817	71	29,300	71	29,700	71	0.6	0.0	NO
	Between I-5 NB Ramps and Piraeus St.	36,550	76	39,500	76	39,700	76	0.4	0.1	NO
	Between Piraeus St. and Saxony Rd.	36,550	76	39,600	76	39,900	76	0.4	0.1	NO
	Between Saxony Rd. and El Camino Real	37,683	76	42,000	76	42,300	76	0.5	0.0	NO

Table 4.10-8
Housing Strategy 2 (BYO) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 2 Buildout ADT	Housing Strategy 2 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 2 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 2 and No Project Condition	Cumulative Impact?
	Between El Camino Real and La Costa Towne Center traffic signal	15,999	69	20,700	70	20,900	70	1.2	0.0	NO
	Between La Costa Towne Center traffic signal and Fairway Lane	15,999	69	20,900	70	21,000	70	1.2	0.0	NO
	Between Fairway Lane and Calle Madero	15,999	69	20,700	70	20,800	70	1.2	0.0	NO
Leucadia Blvd	Between Highway 101 and Vulcan Ave.	12,188	66	14,300	67	15,600	67	1.1	0.4	NO
	Between Vulcan Ave. and Hermes Ave.	14,933	67	16,300	67	17,200	68	0.6	0.2	NO
	Between Hermes Ave. and Hygeia Ave.	14,933	67	15,700	67	16,600	67	0.5	0.3	NO
	Between Hygeia Ave. and Hymettus Ave.	14,933	67	17,400	68	15,000	67	0.0	-0.7	NO
	Between Hymettus Ave. and Orpheus Ave.	14,933	67	19,200	68	20,000	68	1.3	0.2	NO
	Between Orpheus Ave. and I-5 SB Ramps	14,933	68	17,700	69	18,500	69	1.0	0.2	NO
	Between I-5 SB Ramps and I-5 NB Ramps	22,721	68	28,600	69	28,900	69	1.0	0.0	NO
	Between Piraeus St. and Urania Ave.	38,099	72	44,100	73	44,200	73	0.7	0.1	NO
	Between Urania Ave. and Saxony Rd.	38,099	72	44,100	73	44,200	73	0.7	0.1	NO
	Between Saxony Rd. and Sidonia St.	40,117	73	42,400	73	42,000	73	0.2	-0.1	NO
	Between Sidonia St. and Quail Gardens Dr.	40,117	73	42,400	73	42,100	73	0.2	-0.1	NO
	Between Quail Gardens Dr. and Garden View Rd.	43,786	74	47,100	74	47,600	75	0.4	0.1	NO
	Between Garden View Rd. and Town Center Place	31,439	73	34,700	73	32,000	73	0.1	-0.3	NO
	Between Town Center Place and El Camino Real	34,214	73	39,000	74	38,900	74	0.5	0.0	NO
Mountain Vista Dr.	Between El Camino Real and Wandering Rd.	11,478	68	15,000	70	15,000	70	1.2	0.0	NO
	Between Wandering Rd. and Village Park Way	7,093	66	9,300	67	9,300	67	1.2	0.0	NO
Lone Jack Dr.	Between Rancho Santa Fe Rd. and northern terminus	6,745	65	8,400	66	8,200	66	0.8	-0.1	NO
El Camino Del Norte	Between Rancho Santa Fe Rd. and San Dieguito CPA boundary	6,915	65	7,900	66	7,900	66	0.6	0.0	NO
	Between San Dieguito CPA boundary to Via De Fortuna	6,915	65	7,800	65	7,600	65	0.4	-0.1	NO
Encinitas Blvd	Between Highway 101 and Vulcan Ave.	21,095	70	22,300	70	22,700	70	0.4	0.1	NO
	Between Vulcan Ave. and Days Inn traffic signal	20,790	70	34,100	72	33,900	72	2.1	0.0	NO
	Between Days Inn traffic signal and I-5 SB Ramps	20,790	70	34,100	72	33,900	72	2.1	0.0	NO
	Between I-5 SB Ramps and I-5 NB Ramps	32,420	72	38,500	72	39,600	73	0.9	0.1	NO

Table 4.10-8
Housing Strategy 2 (BYO) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 2 Buildout ADT	Housing Strategy 2 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 2 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 2 and No Project Condition	Cumulative Impact?
	Between I-5 NB Ramps and Saxony Rd.	38,312	72	41,400	73	43,000	73	0.5	0.1	NO
	Between Saxony Rd. and Calle Magdalena	31,737	72	35,400	72	36,400	72	0.6	0.1	NO
	Between Calle Magdalena and Encinitas Town Country traffic signal	31,737	72	40,000	73	41,400	73	1.2	0.2	NO
	Between Encinitas Town Country traffic signal and Quail Gardens Dr.	31,737	72	36,000	72	38,400	72	0.8	0.2	NO
	Between Quails Garden Dr. and Delphinium St.	27,446	72	37,700	74	39,700	74	1.6	0.2	NO
	Between Delphinium St. and Balour Dr.	27,446	72	38,300	74	39,900	74	1.6	0.1	NO
	Between Balour Dr. and Via Cantebria	38,142	74	47,500	75	48,700	75	1.1	0.1	NO
	Between Via Cantebria and El Camino Real	26,806	72	29,400	72	30,400	73	0.5	0.1	NO
	Between El Camino Real and Village Square Dr.	28,841	72	31,000	73	30,900	73	0.3	0.0	NO
	Between Village Square Dr. and Turner Ave.	28,841	72	29,300	72	30,000	73	0.2	0.1	NO
	Between Turner Ave. and Cerro St.	28,841	72	29,300	72	30,000	73	0.2	0.1	NO
	Between Cerro St. and Village Park Way	28,841	72	29,700	72	30,700	73	0.3	0.2	NO
	Between Village Park Way to Willowspring Dr.	22,619	71	27,900	72	29,000	72	1.0	0.1	NO
	Between Willowspring Dr. to Rancho Santa Fe Rd.	22,619	71	22,700	71	23,900	72	0.2	0.2	NO
S Rancho Santa Fe Rd.	Between Manchester Ave. and 770 feet east of Manchester Ave.	18,476	70	18,600	70	19,500	71	0.2	0.2	NO
	Between 770 feet east of Manchester Ave. and San Dieguito CPA boundary	18,476	70	18,600	70	19,500	71	0.2	0.2	NO
F St./Requeza St.	Between Vulcan Ave. and Cornish Dr.	5,631	60	6,200	61	6,400	61	0.5	0.1	NO
	Between Cornish Dr. and San Dieguito Dr.	5,631	60	6,300	61	6,500	61	0.6	0.1	NO
	Between San Dieguito Dr. and Stratford Dr.	5,631	60	6,300	61	6,500	61	0.6	0.1	NO
	Between Stratford Dr. and Regal Rd.	5,631	60	6,800	61	7,000	61	0.9	0.1	NO
	Between Regal Rd. and West Lake Dr.	5,631	60	6,400	61	7,600	61	1.3	0.8	NO
	Between West Lake Dr. and Nardo Dr.	4,516	59	4,800	59	5,200	60	0.6	0.3	NO
Santa Fe Dr.	Between Vulcan Ave. and Cornish Dr.	8,554	65	9,000	65	9,000	65	0.2	0.0	NO
	Between Cornish Dr. and Summit Ave.	8,554	65	9,000	65	9,000	65	0.2	0.0	NO
	Between Summit Ave. and Devonshire	8,554	65	10,100	65	10,300	65	0.8	0.1	NO
	Between Devonshire Dr. and Dr.way	12,974	66	15,200	67	15,600	67	0.8	0.1	NO
	Between Dr.way and I-5 SB Ramps	12,974	66	15,200	67	15,600	67	0.8	0.1	NO
	Between I-5 SB Ramps and I-5 NB Ramps	19,070	68	22,400	69	22,900	69	0.8	0.1	NO
	Between I-5 NB Ramps and Regal Rd.	13,743	67	16,100	67	16,500	67	0.7	0.1	NO

Table 4.10-8
Housing Strategy 2 (BYO) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 2 Buildout ADT	Housing Strategy 2 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 2 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 2 and No Project Condition	Cumulative Impact?
	Between Regal Rd. and Gardena Rd.	13,743	67	16,100	67	16,500	67	0.7	0.1	NO
	Between Gardena Rd. and Nardo Rd.	13,743	67	16,100	67	16,500	67	0.7	0.1	NO
	Between Nardo Rd. and Windsor Rd./Bonita Dr.	15,036	67	17,700	68	18,100	68	0.8	0.0	NO
	Between Windsor Rd./Bonita Dr. and Balour Dr.	15,036	67	17,700	68	18,100	68	0.8	0.0	NO
	Between Balour Dr. and Lake Dr.	15,817	67	18,600	68	19,000	68	0.8	0.1	NO
	Between Lake Dr. and Crest Dr.	15,107	67	17,700	68	18,200	68	0.8	0.1	NO
	Between Crest Dr. and El Camino Real	15,107	67	17,700	68	18,200	68	0.8	0.1	NO
Birmingham Dr.	Between San Elijo Ave. and Newcastle Ave.	14,588	66	15,500	66	15,600	66	0.2	0.0	NO
	Between Newcastle Ave. and Manchester Ave.	14,588	66	15,500	66	15,600	66	0.2	0.0	NO
	Between Manchester Ave. and Montgomery Ave.	14,588	66	15,500	66	15,600	66	0.2	0.0	NO
	Between Montgomery Ave. and Cambridge Ave.	14,588	66	14,600	66	15,600	66	0.2	0.2	NO
	Between Cambridge Ave. and MacKinnon Ave.	14,588	66	15,500	66	15,600	66	0.2	0.0	NO
	Between MacKinnon Ave. and Carol View Dr.	14,588	66	19,500	67	19,700	67	1.3	0.1	NO
	Between Carol View Dr. and I-5 SB Ramps	14,588	66	19,500	67	19,700	67	1.3	0.1	NO
	Between I-5 SB Ramps and I-5 NB Ramps	16,342	69	21,800	70	22,100	70	1.3	0.0	NO
	Between I-5 NB Ramps and Villa Cardiff Dr.	8,248	66	13,200	68	13,500	68	2.1	0.1	NO
	Between Villa Cardiff Dr. and Playa Rivera	8,248	64	11,600	66	11,600	66	1.5	0.0	NO
	Between Playa Rivera and Freda Lane	8,248	64	13,100	66	13,100	66	2.0	0.0	NO
	Between Freda Lane and Lake Dr.	8,248	64	8,700	65	8,700	65	0.3	0.0	NO

Housing Strategy 3 – Modified Mixed Use Places (MMUP)

Table 4.10-9 summarizes the existing traffic volumes and noise levels, the future traffic volumes and noise levels without implementation of the HEU, and the future traffic volumes and noise levels associated with buildout of housing strategy 3 (MMUP). When compared to the existing condition, a noise increase of 3 dB or greater would occur adjacent to Carlsbad Boulevard between Avenida Encinas and La Costa Avenue where the existing noise level is 70 CNEL and the future noise level is projected to be 73 CNEL, Vulcan Avenue between La Costa Avenue and Leucadia Boulevard where the existing noise level is 61 CNEL and the future noise level is projected to be 64 CNEL, Village Park Way between Parkdale Drive and Encinitas Boulevard where the existing noise level is 65 CNEL and the future noise level is projected to be 68 CNEL, and Manchester Avenue between Encinitas Boulevard and El Camino Real where the existing noise level is 64 CNEL and the future noise level is projected to be 68 CNEL. There are existing sensitive land uses located adjacent to these roadway segments. However, this increase would be due to cumulative regional growth. To evaluate the HEU's contribution to the noise increase, future traffic volumes were compared to buildout of the no project condition (development under the adopted general plan). When compared to buildout of the no project condition, the increase in ambient noise attributed to housing strategy 3 (MMUP) would be less than 3 dB adjacent to all roadway segments. Impacts would be less than significant. As with housing strategies 1 (RM) and 2 (BYO), because of the increase in regional growth that would occur with or without implementation of the HEU, there would be an increase in existing ambient noise levels with or without buildout of housing strategy 3 (MMUP).

4.10.5.2 Significance of Impacts

It should be noted that there would be an increase in existing ambient noise levels with or without buildout of the housing strategies. This is due to the increase in regional growth that would occur with or without implementation of the proposed HEU. Impacts were assessed by comparing future noise levels without implementation of the HEU and future noise levels with buildout of the three housing strategies. As shown, when compared to buildout of the no project condition, the increases in ambient noise would be less than 3 dB adjacent to all roadway segments. Impacts would be less than significant.

4.10.5.3 Mitigation Framework

Impacts would be less than significant. No mitigation is required.

Table 4.10-9
Housing Strategy 3 (MMUP) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 3 Buildout ADT	Housing Strategy 3 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 3 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 3 and No Project Condition	Cumulative Impact?
Carlsbad Blvd.	Between Avenida Encinas and La Costa Ave.	12,160	70	25,300	73	25,500	73	3.2	0.0	NO
	Between Poinsettia Lane and Avenida Encinas	16,194	71	24,700	73	25,400	73	2.0	0.1	NO
Highway 101	Between La Costa Ave. and 600 feet south of La Costa Ave.	18,070	69	19,900	70	21,800	70	0.8	0.4	NO
	Between 600 feet south of La Costa Ave. and Leucadia Blvd.	17,378	69	18,100	69	20,900	70	0.8	0.6	NO
	Between Leucadia Blvd. and Cadmus St.	19,145	69	19,900	70	21,300	70	0.5	0.3	NO
	Between Cadmus St. and Marcheta St.	19,145	69	19,900	70	21,300	70	0.5	0.3	NO
	Between Marcheta St. and 660 feet south of Marcheta St.	19,145	69	19,900	70	19,300	69	0.1	-0.1	NO
	Between 660 feet south of Marcheta St. and Encinitas Blvd.	19,145	69	19,900	70	19,600	69	0.1	-0.1	NO
	Between Encinitas Blvd. and D St.	18,746	67	19,400	67	19,300	67	0.2	0.0	NO
	Between D St. and E St.	18,746	67	19,400	67	19,300	67	0.2	0.0	NO
	Between E St. and F St.	18,746	67	19,400	67	19,300	67	0.2	0.0	NO
	Between F St. and H St.	18,746	67	19,400	67	19,300	67	0.2	0.0	NO
	Between H St. and J St.	20,337	67	21,100	67	20,900	67	0.1	-0.1	NO
	Between J St. and Swamis Ped Crossing	20,337	71	21,100	71	20,900	71	0.1	-0.1	NO
	Between Swami's Ped Crossing and San Elijo State Beach	20,550	71	21,300	71	21,100	71	0.2	0.0	NO
	Between San Elijo State Beach and Chesterfield	20,682	71	21,300	71	21,400	71	0.1	0.0	NO
	Between Chesterfield and Cardiff State Beach	20,682	71	23,200	71	23,200	71	0.5	0.0	NO
	Between Cardiff Beach State and Chart House	20,682	71	23,200	71	23,200	71	0.5	0.0	NO
	Between Chart House and Las Olas Mexican Restaurant	20,682	71	23,200	71	23,200	71	0.5	0.0	NO
	Between Las Olas Mexican Restaurant and City of Solana Beach ~~Cardiff by the sea~~ limits	20,682	71	23,200	71	23,200	71	0.5	0.0	NO
	Between City of Solana Beach ~~Cardiff by the sea~~ limits and West Cliff St.	18,611	70	22,500	71	22,600	71	0.9	0.1	NO
	Between West Cliff and Lomas Santa Fe	18,611	70	25,000	72	25,000	72	1.3	0.0	NO
	Between Lomas Santa Fe Dr. and Via de la Valle	17,056	70	23,600	71	23,600	71	1.4	0.0	NO
Vulcan Ave.	Between La Costa Ave. and Leucadia Blvd.	3,621	~~61~~62	7,000	~~64~~65	7,300	~~64~~65	3.0	0.2	NO
	Between Leucadia Blvd. and Encinitas Blvd.	6,221	~~63~~64	7,500	~~64~~65	7,600	~~64~~65	0.9	0.1	NO
	Between Encinitas Blvd. and D St.	10,368	67	12,900	68	13,300	68	1.0	0.1	NO

Table 4.10-9 Housing Strategy 3 (MMUP) Increases in Ambient Noise										
Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 3 Buildout ADT	Housing Strategy 3 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 3 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 3 and No Project Condition	Cumulative Impact?
	Between D St. and E St.	10,368	67	12,900	68	13,700	68	1.2	0.3	NO
	Between E St. and Santa Fe Dr.	10,486	67	13,100	68	14,200	68	1.3	0.3	NO
San Elijo	Between Santa Fe Dr. and Birmingham Dr.	9,332	65	10,100	65	10,200	65	0.4	0.1	NO
	Between Birmingham Dr. and Chesterfield Dr.	9,332	65	12,500	66	12,700	66	1.3	0.1	NO
	Between Chesterfield Dr. and Manchester Ave.	9,332	62	9,500	62	9,600	62	0.1	0.1	NO
Saxony Rd.	Between La Costa Ave. and Quail Hollow ~~Gardens~~ Dr.	3,137	63	4,600	64	4,600	64	1.6	0.0	NO
	Between Quail Hollow ~~Gardens~~ Dr. and Normandy Rd.	2,858	60	3,400	61	3,400	61	0.8	0.0	NO
	Between Normandy Rd. and Brittany Ave.	2,858	60	3,900	61	3,800	61	1.3	-0.1	NO
	Between Brittany Ave. and Leucadia Blvd.	2,858	60	3,500	61	3,400	61	0.8	-0.1	NO
	Between Leucadia Blvd. and Silver Berry Place	8,973	66	11,800	67	11,900	67	1.3	0.1	NO
	Between Silver Berry Place and Encinitas Blvd.	8,973	66	13,800	68	14,000	68	2.0	0.1	NO
Quail Hollow Dr.	Between Swallow Tail Rd. and Saxony Rd.	3,235	~~58~~60	5,000	~~60~~62	5,000	~~60~~62	1.9	0.0	NO
Quail Gardens Dr.	Between Swallow Tail Rd. and Lauren Court	3,235	62	4,900	63	4,900	63	1.8	0.0	NO
	Between Lauren Court and Leucadia Blvd.	3,235	62	5,300	64	5,300	64	2.1	0.0	NO
	Between Leucadia Blvd. and Paseo D~~d~~e L~~l~~as Flores	7,897	66	9,100	66	9,200	66	0.6	0.0	NO
	Between Paseo de las Flores and Paseo D~~d~~e L~~l~~as Verdes	7,897	66	8,900	66	9,200	66	0.6	0.1	NO
	Between Paseo D~~d~~e L~~l~~as Verdes and Encinitas Blvd.	7,897	66	8,200	66	8,400	66	0.2	0.1	NO
Westlake St.	Between Encinitas Blvd. and Requeza St.	9,688	64	11,800	65	11,800	65	0.8	0.0	NO
Nardo Dr.	Between Requeza St. and Melba Rd.	4,871	59	5,100	60	5,200	60	0.3	0.1	NO
	Between Melba Rd. and Santa Fe Dr.	4,871	59	5,100	60	5,200	60	0.3	0.1	NO
MacKinnon Ave.	Between Santa Fe Dr. and Villa Cardiff Dr.	5,413	63	6,200	63	6,300	63	0.7	0.1	NO
Villa Cardiff Drive	Between MacKinnon Ave. and Windsor Rd.	5,413	63	6,500	63	6,600	63	0.9	0.1	NO
	Between Windsor Rd. and Birmingham Dr.	5,413	63	5,700	63	5,800	63	0.3	0.1	NO
Garden View Rd.	Between Leucadia Blvd. and Via Cantebria	10,722	67	11,500	67	11,500	67	0.3	0.0	NO
	Between Via Cantebria and El Camino Real	9,663	66	12,900	68	12,800	68	1.2	0.0	NO
Town Center	Between Leucadia Blvd. and Town Center Place	14,817	64	20,000	66	20,500	66	1.4	0.1	NO

Table 4.10-9
Housing Strategy 3 (MMUP) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 3 Buildout ADT	Housing Strategy 3 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 3 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 3 and No Project Condition	Cumulative Impact?
Place	Between Town Center Place and Town Center Dr.	14,817	64	17,800	65	17,200	65	0.6	-0.2	NO
Via Cantebria	Between Town Center Dr. and Garden View Rd.	8,524	62	15,800	65	15,700	65	2.6	-0.1	NO
	Between Garden View Rd. and Forrest Bluff	13,715	68	14,900	68	15,100	68	0.4	0.1	NO
	Between Forrest Bluff and Via Montoro	13,715	68	15,200	68	15,400	68	0.5	0.1	NO
	Between Via Montoro and Via Molena	16,842	69	17,900	69	17,300	69	0.1	-0.1	NO
	Between Via Molena and Encinitas Blvd.	16,842	69	17,500	69	18,200	69	0.3	0.2	NO
Balour Dr.	Between Encinitas Blvd. and Melba Rd.	7,988	64	11,200	66	11,300	66	1.5	0.0	NO
	Between Melba Rd. and Santa Fe Dr.	7,988	62	10,700	63	11,100	63	1.4	0.1	NO
Lake Dr.	Between Santa Fe Dr. and Woodlake Dr.	6,565	63	6,600	63	6,600	63	0.1	0.0	NO
	Between Woodlake Dr. and Birmingham Dr.	6,565	63	6,600	63	6,600	63	0.1	0.0	NO
El Camino Real	Between Aviara Parkway and La Costa Ave.	43,934	76	54,300	77	54,400	77	0.9	0.0	NO
	Between La Costa Ave. and Calle Barcelona	34,929	75	38,400	76	38,700	76	0.4	0.0	NO
	Between Calle Barcelona and City of Carlsbad boundary	34,929	75	36,500	76	36,400	76	0.2	0.0	NO
	Between City of Carlsbad boundary and Leucadia Blvd.	43,939	76	46,700	77	46,500	77	0.2	-0.1	NO
	Between Leucadia Blvd. and Town Center Dr.	43,939	74	58,600	75	59,200	75	1.3	0.0	NO
	Between Town Center Dr. and Garden View Rd.	43,939	74	54,200	75	54,500	75	1.0	0.0	NO
	Between Garden View Rd. and 331-339 El Camino Real	39,969	71	42,900	72	43,100	72	0.3	0.0	NO
	Between 331-339 El Camino Real and Via Montoro	39,969	71	48,900	72	49,300	72	0.9	0.0	NO
	Between Via Montoro and Mountain Vista	39,969	71	44,300	72	44,900	72	0.5	0.1	NO
	Between Mountain Vista and Via Molena	41,968	71	47,000	72	47,400	72	0.5	0.0	NO
	Between Via Molena and Encinitas Blvd.	41,968	71	56,900	73	58,800	73	1.5	0.2	NO
	Between Encinitas Blvd. and 213 S El Camino Real	33,151	72	39,400	73	40,100	73	0.8	0.0	NO
	Between 213 S El Camino Real and Crest Dr.	33,151	72	33,800	72	33,800	72	0.1	0.0	NO
	Between Crest Dr. and Willowspring Dr.	33,151	72	36,200	72	36,400	72	0.4	0.0	NO
	Between Willowspring Dr. and Santa Fe Dr.	33,151	72	37,500	72	37,800	72	0.6	0.1	NO
	Between Santa Fe Dr. and Sage Canyon Dr.	23,024	74	28,400	74	29,500	75	1.1	0.2	NO
	Between Sage Canyon Dr. and Manchester Ave.	23,024	74	27,700	74	29,000	75	1.0	0.2	NO
Village Park Way	Between Mountain Vista Dr. and Parkdale Dr.	6,341	65	10,900	67	11,400	67	2.6	0.2	NO
	Between Parkdale Dr. and Encinitas Blvd.	6,341	65	14,200	68	14,700	68	3.7	0.2	NO
Rancho Santa	Between Olivenhain Rd. and Calle Acervo	17,363	70	17,400	70	17,400	70	0.0	0.0	NO

Table 4.10-9
Housing Strategy 3 (MMUP) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 3 Buildout ADT	Housing Strategy 3 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 3 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 3 and No Project Condition	Cumulative Impact?
Fe Rd.	Between Calle Acervo/Avenida La Posta and Olive Crest Dr.	14,901	68	15,900	69	16,500	69	0.5	0.2	NO
	Between Olive Crest Dr. and 13th St.	14,901	68	15,800	69	16,300	69	0.4	0.1	NO
	Between 13th St. and 11th St.	14,901	68	15,700	69	16,300	69	0.4	0.1	NO
	Between 11th St. and El Camino Del Norte	15,146	68	15,800	69	16,400	69	0.4	0.2	NO
	Between El Camino Del Norte and 9th St.	13,236	68	13,300	68	13,700	68	0.2	0.2	NO
	Between 9th St. and 8th St.	13,236	68	13,500	68	13,800	68	0.2	0.1	NO
	Between 8th St. and 7th St.	13,236	68	13,900	68	14,300	68	0.4	0.2	NO
	Between 7th St. and Encinitas Blvd.	13,236	68	15,200	68	18,800	69	1.5	0.9	NO
Manchester Ave.	Between Manchester Ave. and Mira Costa College	19,595	72	35,400	74	37,100	75	2.7	0.2	NO
	Between Mira Costa College and I-5 NB On-Ramp	19,595	72	35,700	74	37,400	75	2.8	0.2	NO
	Between I-5 NB Ramps and I-5 SB Ramps	26,567	71	40,200	73	40,800	73	1.9	0.1	NO
	Between I-5 SB Ramps and Ocean Cove Dr.	7,598	65	11,900	67	12,200	67	2.1	0.1	NO
	Between Ocean Cove Dr. and Seaside Cardiff-by-the-sea residential area driveway	7,598	65	11,900	67	12,100	67	2.0	0.0	NO
	Between Seaside Cardiff-by-the-sea residential area driveway and San Elijo Water Reclamation Facility Driveway	7,598	65	11,900	67	12,100	67	2.0	0.0	NO
	Between San Elijo Water Reclamation Facility Driveway and Manchester Ave.	7,598	65	11,800	67	12,000	67	2.0	0.1	NO
Manchester Ave.	Between Encinitas Blvd. and El Camino Real	5,989	64	12,300	67	14,000	68	3.7	0.6	NO
La Costa Ave.	Between Highway 101 and Vulcan Ave.	11,888	67	16,400	69	17,700	69	1.7	0.3	NO
	Between Vulcan Ave. and Sheridan Rd.	14,258	68	16,300	69	17,300	69	0.9	0.3	NO
	Between Sheridan Rd. and I-5 SB Ramps	14,258	68	22,000	70	22,900	70	2.1	0.2	NO
	Between I-5 SB Ramps and I-5 NB Ramps	25,817	71	29,300	71	30,000	71	0.7	0.1	NO
	Between I-5 NB Ramps and Piraeus St.	36,550	76	39,500	76	39,700	76	0.4	0.1	NO
	Between Piraeus St. and Saxony Rd.	36,550	76	39,600	76	39,800	76	0.4	0.1	NO
	Between Saxony Rd. and El Camino Real	37,683	76	42,000	76	42,100	76	0.5	0.0	NO
	Between El Camino Real and La Costa Towne Center traffic signal	15,999	69	20,700	70	21,000	70	1.2	0.0	NO
	Between La Costa Towne Center traffic signal and Fairway Lane	15,999	69	20,900	70	21,200	70	1.3	0.1	NO
	Between Fairway Lane and Calle Madero	15,999	69	20,700	70	20,800	70	1.2	0.0	NO

Table 4.10-9
Housing Strategy 3 (MMUP) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 3 Buildout ADT	Housing Strategy 3 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 3 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 3 and No Project Condition	Cumulative Impact?
Leucadia Blvd.	Between Highway 101 and Vulcan Ave.	12,188	66	14,300	67	16,100	67	1.2	0.5	NO
	Between Vulcan Ave. and Hermes Ave.	14,933	67	16,300	67	17,700	68	0.8	0.4	NO
	Between Hermes Ave. and Hygeia Ave.	14,933	67	15,700	67	17,000	68	0.6	0.4	NO
	Between Hygeia Ave. and Hymettus Ave.	14,933	67	17,400	68	15,000	67	0.0	-0.7	NO
	Between Hymettus Ave. and Orpheus Ave.	14,933	67	19,200	68	20,200	68	1.3	0.2	NO
	Between Orpheus Ave. and I-5 SB Ramps	14,933	68	17,700	69	15,200	68	0.1	-0.7	NO
	Between I-5 SB Ramps and I-5 NB Ramps	22,721	68	28,600	69	28,600	69	1.0	0.0	NO
	Between Piraeus St. and Urania Ave.	38,099	72	44,100	73	43,900	73	0.6	0.0	NO
	Between Urania Ave. and Saxony Rd.	38,099	72	44,100	73	43,900	73	0.6	0.0	NO
	Between Saxony Rd. and Sidonia St.	40,117	73	42,400	73	42,100	73	0.2	-0.1	NO
	Between Sidonia St. and Quail Gardens Dr.	40,117	73	42,400	73	42,100	73	0.2	-0.1	NO
	Between Quail Gardens Dr. and Garden View Rd.	43,786	74	47,100	74	47,000	74	0.3	0.0	NO
	Between Garden View Rd. and Town Center Place	31,439	73	34,700	73	31,700	73	0.0	-0.4	NO
	Between Town Center Place and El Camino Real	34,214	73	39,000	74	38,700	74	0.5	0.0	NO
Mountain Vista Dr.	Between El Camino Real and Wandering Rd.	11,478	68	15,000	70	15,100	70	1.2	0.0	NO
	Between Wandering Rd. and Village Park Way	7,093	66	9,300	67	9,300	67	1.2	0.0	NO
Lone Jack Dr.	Between Rancho Santa Fe Rd. and northern terminus	6,745	65	8,400	66	8,200	66	0.8	-0.1	NO
El Camino Del Norte	Between Rancho Santa Fe Rd. and San Dieguito CPA boundary	6,915	65	7,900	66	7,700	65	0.5	-0.1	NO
	Between San Dieguito CPA boundary to Via De Fortuna	6,915	65	7,800	65	7,400	65	0.3	-0.2	NO
Encinitas Blvd.	Between Highway 101 and Vulcan Ave.	21,095	70	22,300	70	24,300	70	0.7	0.4	NO
	Between Vulcan Ave. and Days Inn traffic signal	20,790	70	34,100	72	35,800	72	2.3	0.2	NO
	Between Days Inn traffic signal and I-5 SB Ramps	20,790	70	34,100	72	35,800	72	2.3	0.2	NO
	Between I-5 SB Ramps and I-5 NB Ramps	32,420	72	38,500	72	40,500	73	1.0	0.2	NO
	Between I-5 NB Ramps and Saxony Rd.	38,312	72	41,400	73	43,100	73	0.5	0.1	NO
	Between Saxony Rd. and Calle Magdalena	31,737	72	35,400	72	36,800	72	0.7	0.2	NO
	Between Calle Magdalena and Encinitas Town Country traffic signal	31,737	72	40,000	73	41,600	73	1.2	0.2	NO
	Between Encinitas Town Country traffic signal and Quail Gardens Dr.	31,737	72	36,000	72	38,000	72	0.8	0.2	NO
	Between Quails Garden Dr. and Delphinium St.	27,446	72	37,700	74	39,600	74	1.6	0.2	NO
	Between Delphinium St. and Balour Dr.	27,446	72	38,300	74	40,000	74	1.6	0.1	NO

Table 4.10-9
Housing Strategy 3 (MMUP) Increases in Ambient Noise

Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 3 Buildout ADT	Housing Strategy 3 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 3 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 3 and No Project Condition	Cumulative Impact?
	Between Balour Dr. and Via Cantebria	38,142	74	47,500	75	48,800	75	1.1	0.1	NO
	Between Via Cantebria and El Camino Real	26,806	72	29,400	72	30,500	73	0.6	0.2	NO
	Between El Camino Real and Village Square Dr.	28,841	72	31,000	73	30,000	73	0.2	-0.1	NO
	Between Village Square Dr. and Turner Ave.	28,841	72	29,300	72	30,400	73	0.2	0.1	NO
	Between Turner Ave. and Cerro St.	28,841	72	29,300	72	30,400	73	0.2	0.1	NO
	Between Cerro St. and Village Park Way	28,841	72	29,700	72	31,200	73	0.4	0.3	NO
	Between Village Park Way to Willowspring Dr.	22,619	71	27,900	72	29,400	72	1.1	0.2	NO
	Between Willowspring Dr. to Rancho Santa Fe Rd.	22,619	71	22,700	71	24,400	72	0.3	0.3	NO
S Rancho Santa Fe Rd.	Between Manchester Ave. and 770 feet east of Manchester Ave.	18,476	70	18,600	70	19,900	71	0.3	0.3	NO
	Between 770 feet east of Manchester Ave. and San Dieguito CPA boundary	18,476	70	18,600	70	19,900	71	0.3	0.3	NO
F St./Requeza St.	Between Vulcan Ave. and Cornish Dr.	5,631	60	6,200	61	6,400	61	0.5	0.1	NO
	Between Cornish Dr. and San Dieguito Dr.	5,631	60	6,300	61	6,700	61	0.7	0.2	NO
	Between San Dieguito Dr. and Stratford Dr.	5,631	60	6,300	61	6,700	61	0.7	0.2	NO
	Between Stratford Dr. and Regal Rd.	5,631	60	6,800	61	7,000	61	0.9	0.1	NO
	Between Regal Rd. and West Lake Dr.	5,631	60	6,400	61	6,400	61	0.5	0.0	NO
	Between West Lake Dr. and Nardo Dr.	4,516	59	4,800	59	4,900	60	0.4	0.1	NO
Santa Fe Dr.	Between Vulcan Ave. and Cornish Dr.	8,554	65	9,000	65	8,900	65	0.2	0.0	NO
	Between Cornish Dr. and Summit Ave.	8,554	65	9,000	65	9,700	65	0.5	0.3	NO
	Between Summit Ave. and Devonshire	8,554	65	10,100	65	10,300	65	0.8	0.1	NO
	Between Devonshire Dr. and Dr.way	12,974	66	15,200	67	15,700	67	0.8	0.1	NO
	Between Dr.way and I-5 SB Ramps	12,974	66	15,200	67	15,700	67	0.8	0.1	NO
	Between I-5 SB Ramps and I-5 NB Ramps	19,070	68	22,400	69	23,000	69	0.8	0.1	NO
	Between I-5 NB Ramps and Regal Rd.	13,743	67	16,100	67	16,600	67	0.8	0.2	NO
	Between Regal Rd. and Gardena Rd.	13,743	67	16,100	67	16,600	67	0.8	0.2	NO
	Between Gardena Rd. and Nardo Rd.	13,743	67	16,100	67	16,600	67	0.8	0.2	NO
	Between Nardo Rd. and Windsor Rd./Bonita Dr.	15,036	67	17,700	68	18,200	68	0.9	0.1	NO
	Between Windsor Rd./Bonita Dr. and Balour Dr.	15,036	67	17,700	68	18,200	68	0.9	0.1	NO
	Between Balour Dr. and Lake Dr.	15,817	67	18,600	68	19,100	68	0.8	0.1	NO
	Between Lake Dr. and Crest Dr.	15,107	67	17,700	68	18,200	68	0.8	0.1	NO
	Between Crest Dr. and El Camino Real	15,107	67	17,700	68	18,200	68	0.8	0.1	NO
Birmingham	Between San Elijo Ave. and Newcastle Ave.	14,588	66	15,500	66	15,800	66	0.3	0.1	NO

Table 4.10-9 Housing Strategy 3 (MMUP) Increases in Ambient Noise										
Roadway	Segment	Existing ADT	Existing Noise Level at 50 Feet (L_{dn})	No Project Buildout ADT	No Project Noise Level at 50 Feet (L_{dn})	Housing Strategy 3 Buildout ADT	Housing Strategy 3 Noise Level at 50 Feet (L_{dn})	Change in Noise Levels (dB) between Buildout of Housing Strategy 3 and Existing Condition	Change in Noise Levels (dB) between Buildout of Housing Strategy 3 and No Project Condition	Cumulative Impact?
Dr.	Between Newcastle Ave. and Manchester Ave.	14,588	66	15,500	66	15,800	66	0.3	0.1	NO
	Between Manchester Ave. and Montgomery Ave.	14,588	66	15,500	66	15,800	66	0.3	0.1	NO
	Between Montgomery Ave. and Cambridge Ave.	14,588	66	14,600	66	15,800	66	0.3	0.3	NO
	Between Cambridge Ave. and MacKinnon Ave.	14,588	66	15,500	66	15,800	66	0.3	0.1	NO
	Between MacKinnon Ave. and Carol View Dr.	14,588	66	19,500	67	14,700	66	0.0	-1.2	NO
	Between Carol View Dr. and I-5 SB Ramps	14,588	66	19,500	67	14,700	66	0.0	-1.2	NO
	Between I-5 SB Ramps and I-5 NB Ramps	16,342	69	21,800	70	21,400	70	1.2	-0.1	NO
	Between I-5 NB Ramps and Villa Cardiff Dr.	8,248	66	13,200	68	13,400	68	2.1	0.1	NO
	Between Villa Cardiff Dr. and Playa Rivera	8,248	64	11,600	66	11,700	66	1.6	0.1	NO
	Between Playa Rivera and Freda Lane	8,248	64	13,100	66	13,200	66	2.1	0.1	NO
	Between Freda Lane and Lake Dr.	8,248	64	8,700	65	8,800	65	0.3	0.0	NO

4.10.6 Issue 2: On-Site Generated Noise

Would the project result in exposure of persons to or generation of noise levels in excess of limits established in the noise ordinance?

4.10.6.1 Impacts

a. Housing Sites

A significant impact would occur if future development associated with the ~~HEU Floating Zone Program~~new zone program would generate noise levels that would exceed the property line noise level limits established in the City's Noise Abatement and Control Ordinance. The applicable property line noise level limits for each housing site are summarized in Table 4.10-10. These limits apply to existing uses, but will also apply to future uses and are used for evaluating potential impacts of future on-site generated noise levels.

As discussed previously, stationary sources of noise include activities associated with a given land use. The noise sources associated with future development proposed under the HEU would be those typical of any residential development (vehicles arriving and leaving, children at play and landscape maintenance machinery). None of these noise sources are anticipated to violate the City's Municipal Code or result in a substantial permanent increase in existing noise levels. However, HVAC equipment with exterior fans or condensers mounted on the ground or roofs have the potential to produce noise in excess of the City's limits. Commercial and retail components of mixed-use developments would also generate noise from commercial-related mechanical equipment, loading docks, deliveries, trash-hauling activities and customer and employee use of commercial facilities.

It is not known at this time which manufacturer, brand, or model of unit or units would be selected for use at a housing site associated with the HEU. A typical HVAC unit can generate a noise level of 65 dB(A) L_{eq} at 3 feet. As shown in Table 4.10-4, the most restrictive property line noise level limit is 45 dB(A) L_{eq}. If this representative HVAC unit was located closer than 30 feet from a residential property line, noise levels could exceed the property line noise level limit of 45 dB(A) L_{eq}.

City policies in the General Plan and regulations in the Noise Abatement and Control Ordinance are in place to control noise and reduce on-site generated noise impacts between various land uses. However, without detailed operational data, it cannot be verified that future projects implemented in accordance with the HEU would be capable of reducing noise levels to comply with the City's Noise Ordinance property line standards. Impacts would be potentially significant (Impact NOS-1). Verification that City standards have been met would be required at the project-level

Table 4.10-10 Property Line Noise Level Limits				
Housing Site	Existing Site Zoning	Existing Zoning of Adjacent Properties	Daytime Noise Ordinance Limit [dB(A) Leq]	Nighttime Noise Ordinance Limit [dB(A) Leq]
ALT-2	Mixed Use (NCRM-1 and NCM-1)	Residential-11 (R-11)	50	45
		Limited Visitor Serving Commercial (LVSC)	60	55
		General Commercial (GC)	60	55
ALT-3	General Commercial (GC)	Residential-5 (R-5)	50	45
		Residential-8 (R-8)	50	45
		General Commercial (GC)	60	55
ALT-4	Rural Residential-2 (RR-2)	Rural Residential-2 (RR-2)	50	45
		Local Commercial (LC)	60	55
ALT-5	Residential-3 (R-3) Residential-5 (R-5)	Residential-3 (R-3)	50	45
		Residential-5 (R-5)	50	45
		Residential-11 (R-11)	55	50
		Office Professional (OP)	60	55
		Ecological Resource/Open Space/Park (ER/OS/PK)	ER/OS/PK will be governed by the limits applicable to the source of the complaint	
ALT-6	Transportation Corridor (TC)	Residential-15 (R-15)	55	50
		Civic Center (CC)	N/A	N/A
		Office Professional (OP)	60	55
		Commercial Mixed Use (CM-1)	60	55
		Public/Semi-public (P/SP)	N/A	N/A
ALT-7	General Commercial Mixed Use (D-CM1)	Commercial Mixed Use (CM-1)	60	55
		Commercial Mixed Use (CM-2)	60	55
		Public/Semi-public (P/SP)	N/A	N/A
		Visitor Commercial Mixed Use (VCM)	60	55
		Moonlight Beach Park (MBP)	N/A	N/A
C-1	General Commercial (GC)	Residential-3 (R-3)	50	45
		Office Professional (OP)	60	55
		Public/Semi-public (P/SP)	N/A	N/A
C-2	Residential-8 (R-8)	Residential-8 (R-8)	50	45
		Public/Semi-public (P/SP)	N/A	N/A

Table 4.10-10 Property Line Noise Level Limits				
Housing Site	Existing Site Zoning	Existing Zoning of Adjacent Properties	Daytime Noise Ordinance Limit [dB(A) Leq]	Nighttime Noise Ordinance Limit [dB(A) Leq]
C-3	General Commercial (GC)	General Commercial (C-GC1)	60	55
		General Commercial (C-GC2)	60	55
		Commercial-Office Professional (C-OP)	60	55
C-6	Rural Residential-1 (RR-1)	Rural Residential (RR)	50	45
		Rural Residential-1 (RR-1)	50	45
		Public/Semi-public (P/SP)	N/A	N/A
C-7	General Commercial (GC)	General Commercial (C-GC1)	60	55
		General Commercial (C-GC2)	60	55
		Residential-11 (C-R11)	50	45
		Ecological Resource/Open Space/Park (ER/OS/PK)	ER/OS/PK will be governed by the limits applicable to the source of the complaint	
CBHMG-1	Public/Semi-public (P/SP)	Residential-8 (R-8)	50	45
		Residential-11 (R-11)	50	45
		Office Professional (OP)	60	55
		General Commercial (GC)	60	55
L-1	Mixed Use (NCRM-1)	Residential-11 (R-11)	50	45
		Commercial-Residential Mixed Use (CRM-1)	60	55
L-2	Mixed Use (NCRM-1)	Residential-11 (R-11)	50	45
		General Commercial (GC)	60	55
		Commercial-Residential Mixed Use (CRM-1)	60	55
		Commercial Mixed Use (CM-1)	60	55
L-4	Residential-3 (R-3)	Residential-3 (R-3)	50	45
		Visitor Serving Commercial (VSC)	60	55
		Public/Semi-public (P/SP)	N/A	N/A
L-5	Residential-3 (R-3)	Residential-3 (R-3)	50	45
L-6	Residential-3 (R-3)	Rural Residential-2 (RR-2)	50	45
		Residential-3 (R-3)	50	45
L-7	Rural Residential-1 (RR-1)	Rural Residential-1 (RR-1)	50	45
NE-1	General Commercial (GC-Encinitas Ranch)	Commercial (C)	60	55
		Open Space (OS)	N/A	N/A

Table 4.10-10 Property Line Noise Level Limits				
Housing Site	Existing Site Zoning	Existing Zoning of Adjacent Properties	Daytime Noise Ordinance Limit [dB(A) Leq]	Nighttime Noise Ordinance Limit [dB(A) Leq]
NE-3	Public/Semi-public (P/SP)	Residential-8 (R-8)	50	45
		Residential-15 (R-15)	55	50
		General Commercial (GC)	60	55
		Public/Semi-public (P/SP)	N/A	N/A
NE-4	General Commercial (GC)	Residential-8 (R-8)	50	45
		General Commercial (GC)	60	55
		Public/Semi-public (P/SP)	N/A	N/A
NE-7	General Commercial (GC)	Residential-5 (R-5)	50	45
		General Commercial (GC)	60	55
O-2	Rural Residential-2 (RR-2)	Rural Residential-2 (RR-2)	50	45
		Office Professional (OP)	60	55
		Local Commercial (LC)	60	55
O-3	Limited Commercial (LC) Office Professional (OP)	Rural Residential-2 (RR-2)	50	45
		Office Professional (OP)	60	55
		Local Commercial (LC)	60	55
O-4	Rural Residential (RR)	Rural Residential (RR)	50	45
		Rural Residential-1 (RR-1)	50	45
		Rural Residential-3 (RR-3)	50	45
O-5	Rural Residential-3 (RR-3)	Rural Residential (RR)	50	45
		Rural Residential-1 (RR-1)	50	45
		Rural Residential-3 (RR-3)	50	45
O-6	Rural Residential-2 (RR-2)	Rural Residential-2 (RR-2)	50	45
		Local Commercial (LC)	60	55
OE-1	Visitor Serving Commercial (D-VSC)	Residential-15 (R-15)	55	50
		Commercial Mixed Use (CM-1)	60	55
		Commercial Mixed Use (CM-2)	60	55
		Public/Semi-public (P/SP)	N/A	N/A
		Moonlight Beach Park (MBP)	N/A	N/A
OE-2	General Commercial (GC)	Residential-3 (R-3)	50	45
		Public/Semi-public (P/SP)	N/A	N/A
		Visitor Serving Commercial (VSC)	60	55

Table 4.10-10 Property Line Noise Level Limits				
Housing Site	Existing Site Zoning	Existing Zoning of Adjacent Properties	Daytime Noise Ordinance Limit [dB(A) Leq]	Nighttime Noise Ordinance Limit [dB(A) Leq]
OE-4	Civic Center	Residential-5 (R-5)	50	45
		Residential-11 (R-11)	50	45
		Residential-15 (R-15)	55	50
		Ecological Resource/Open Space/Park (ER/OS/PK)	ER/OS/PK will be governed by the limits applicable to the source of the complaint	
		Office Professional (OP)	60	55
		Civic Center (CC)	N/A	N/A
OE-5	General Commercial Mixed Use (D-CM1)	Commercial Mixed Use (CM-1)	60	55
		Commercial Mixed Use (CM-2)	60	55
		Public/Semi-public (P/SP)	N/A	N/A
OE-7	Office Professional (OP)	Residential-5 (R-5)	50	45
		Residential-20 (R-20)	55	50
		General Commercial (GC)	60	55
		Office Professional (OP)	60	55
		Business Park (BP)	60	55
OE-8	Business Park (BP)	Residential-3 (R-3)	50	45
		Residential-8 (R-8)	50	45
		Residential-11 (R-11)	50	45
		General Commercial (GC)	60	55
		Light Industrial (L-I)	60	55
		Business Park (BP)	60	55

b. Housing Strategy Summaries

Development of the housing sites in all three housing strategies has the potential to result in impacts associated with on-site generated noise (Impact NOS-1). Overall, there would be no inherent differences in impacts among the housing strategies. Impacts resulting from all three housing strategies would be potentially significant.

4.10.6.2 Significance of Impacts

Stationary sources of noise include activities associated with a given land use. Future on-site generated noise sources have the potential to exceed to property line noise levels limits established in the City's Noise Ordinance. Without detailed operational data, it cannot be verified that future projects implemented in accordance with the HEU would be capable of reducing noise levels to comply with the City's Noise Ordinance property line standards. Impacts may be significant (Impact NOS-1).

4.10.6.3 Mitigation Framework

NOS-1: Prior to the issuance of any permit for future development consistent with the ~~HEU Floating Zone Program~~new zone program, where~~i~~on residential development would be located adjacent to commercial uses, the City shall require a site-specific noise study. ~~ies~~ The study shall ~~to~~ determine if on-site generated noise levels exceed the property line noise level limits in the Noise Ordinance and to present appropriate mitigation measures, which may include, but are not limited to the following:

- Require the placement of loading and unloading areas so that commercial buildings shield nearby residential land uses from noise generated by loading dock and delivery activities. If necessary, additional sound barriers shall be constructed on the commercial sites to protect nearby noise sensitive uses and hours of delivery can be limited if determined as needed through the study.
- Require the placement of all commercial HVAC machinery to be placed within mechanical equipment rooms wherever possible.
- Require the provision of localized noise barriers or rooftop parapets around HVAC, cooling towers, and mechanical equipment so that line-of-sight to the noise source from the property line of the noise sensitive receptors is blocked.

4.10.6.4 Significance After Mitigation

Significant impacts associated with on-site generated noise from future development associated with housing strategies 1 (RM), 2 (BYO), and 3 (MMUP) (Impact NOS-1) would be avoided through the application of measure NOS-1.

4.10.7 Issue 3: Temporary Noise

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?

4.10.7.1 Impacts

a. Housing Sites

The HEU does not propose the construction of new housing or other development; rather it provides capacity for future development consistent with State Housing Element Law. Future buildout of the housing sites could potentially result in temporary ambient noise increase due to construction activities. Due to the developed nature of the housing sites area, construction activities would take place adjacent to existing structures. Construction activities may include demolition of existing structures, site preparation work, excavation of parking and subfloors, foundation work, and building construction.

Construction noise typically occurs intermittently and varies depending upon the nature or phase of construction (e.g., demolition/land clearing, grading and excavation, erection). Construction noise in any one particular area would be short-term and would include noise from activities such as site preparation, truck hauling of material, pouring of concrete, and use of power tools. Noise would also be generated by construction equipment, including earthmovers, material handlers, and portable generators, and could reach high levels for brief periods.

The City regulates noise associated with construction equipment and activities through its Municipal Code. Noise levels due to construction activities shall not exceed an 8-hour equivalent noise level of 75 dB(A) $L_{eq(8)}$ at a residential property line.

As noted above, construction equipment could generate maximum noise levels between 85 and 90 dB(A) at 50 feet from the source when in operation. Hourly average noise levels would be 82 dB(A) at 50 feet from the center of construction activity when assessing the loudest pieces of equipment working simultaneously. Noise levels would vary depending on the nature of the construction including the duration of specific activities, nature of the equipment involved, location of the particular receiver, and nature of intervening barriers. Construction noise levels of 82 dB(A) $L_{eq(8)}$ at 50 feet would attenuate to 75 dB(A) $L_{eq(8)}$ at 110 feet. Therefore, significant impacts would occur if residential land uses are located closer than 110 feet of construction activities. Potential construction noise impacts associated with each of the housing sites are discussed below and summarized in Table 4.10-11.

Based on the existing conditions, the existing residential land uses located adjacent to the following housing sites are located more than 110 feet from the acoustic center of construction activities: ALT-3, ALT-4, ALT-5, ALT-6, C-1, C-2, C-3, C-6, L-1, L-4, L-5, L-7, NE-1, NE-3, NE-4, NE-7, O-2, O-3, O-4, O-5, O-6, OE-1, OE-2, OE-4, OE-7 and OE-8. Thus, construction noise levels at the residential properties located adjacent to these housing sites

would not exceed 75 dB(A) $L_{eq(8)}$. Additionally, should new residential uses develop adjacent to the housing sites, construction noise levels at redeveloped site may also exceed 75 dB(A) $L_{eq(8)}$ depending on proximity to construction activity.

Although the existing adjacent residences near these housing sites would be exposed to construction noise levels that could be heard above ambient conditions, the exposure would be temporary and would cease at the end of construction. Additionally, construction activities would occur during the hours specified in the City's Municipal Code. Because construction activities associated with these housing sites would comply with the applicable regulation for construction, temporary increases in noise levels from construction activities would be less than significant.

The residential land uses located adjacent to the following housing sites are located less than 110 feet from the acoustic center of construction activities as described below and construction noise would result in a potentially significant impact (Impact NOS-2). It should be noted that this is a conceptual construction noise analysis based on standard construction practices and maximum intensity permitted under the ~~floating~~ new zone. Actual construction noise levels may vary, and a mechanism to demonstrate compliance with the Municipal Code is outlined in the mitigation framework below.

Table 4.10-11
Potential Construction Noise Impacts

Housing Site	Distance to Nearest Adjacent Residential Property Line (feet)*	Construction Noise Level at Nearest Adjacent Residential Property Line [dB(A) $L_{eq(8)}$]	Potential Construction Noise Impact?
ALT-2	50	82.0	Yes
ALT-3	267	67.4	No
ALT-4	165	71.6	No
ALT-5	130	73.7	No
ALT-6	128	73.8	No
ALT-7	45	82.9	Yes
C-1	358	64.9	No
C-2	134	73.4	No
C-3	142	72.9	No
C-6	163	71.7	No
C-7	53	81.5	Yes
CBHMG-1	65	79.7	Yes
L-1	125	74.0	No
L-2	45	82.9	Yes
L-4	220	69.1	No
L-5	128	73.8	No
L-6	38	84.4	Yes
L-7	153	72.3	No
NE-1	1,245	54.1	No
NE-3	323	65.8	No
NE-4	602	60.4	No
NE-7	321	65.8	No
O-2	169	71.4	No

Table 4.10-11 Potential Construction Noise Impacts			
Housing Site	Distance to Nearest Adjacent Residential Property Line (feet)*	Construction Noise Level at Nearest Adjacent Residential Property Line [dB(A) $L_{eq(8)}$]	Potential Construction Noise Impact?
O-3	170	71.4	No
O-4	310	66.2	No
O-5	191	70.4	No
O-6	122	74.3	No
OE-1	163	71.7	No
OE-2	334	65.5	No
OE-4	252	68.0	No
OE-5	45	82.9	Yes
OE-7	141	73.0	No
OE-8	393	64.1	No
*As measured from the approximate center of construction activity at each housing site.			

Site ALT-2

There are residential uses located adjacent to housing site ALT-2. Residential uses are as close as 50 feet from the center of construction activity. Average construction noise levels at this distance would be 82 dB(A) $L_{eq(8)}$, and would exceed the limit of 75 dB(A) $L_{eq(8)}$ established in the City's Municipal Code. Temporary noise impacts due to construction activities at site ALT-2 would be potentially significant.

Site ALT-7

There are residential uses located adjacent to housing site ALT-7. Residential uses are as close as 45 feet from the center of construction activity. Average construction noise levels at this distance would be 83 dB(A) $L_{eq(8)}$, and would exceed the limit of 75 dB(A) $L_{eq(8)}$ established in the City's Municipal Code. Temporary noise impacts due to construction activities at site ALT-7 would be potentially significant.

Site C-7

There are residential uses located adjacent to housing site C-7. Residential uses are as close as 53 feet from the center of construction activity. Average construction noise levels at this distance would be 82 dB(A) $L_{eq(8)}$, and would exceed the limit of 75 dB(A) $L_{eq(8)}$ established in the City's Municipal Code. Temporary noise impacts due to construction activities at site C-7 would be potentially significant.

Site CBHMG-1

There are residential uses located adjacent to housing site CBHMG-1. Residential uses are as close as 65 feet from the center of construction activity. Average construction noise levels at this distance would be 80 dB(A) $L_{eq(8)}$, and would exceed the limit of 75 dB(A) $L_{eq(8)}$

established in the City's Municipal Code. Temporary noise impacts due to construction activities at site CBHMG-1 would be potentially significant.

Site L-2

There are residential uses located adjacent to housing site L-2. Residential uses are as close as 45 feet from the center of construction activity. Average construction noise levels at this distance would be 83 dB(A) $L_{eq(8)}$, and would exceed the limit of 75 dB(A) $L_{eq(8)}$ established in the City's Municipal Code. Temporary noise impacts due to construction activities at site L-2 would be potentially significant.

Site L-6

There are residential uses located adjacent to housing site L-6. Residential uses are as close as 38 feet from the center of construction activity. Average construction noise levels at this distance would be 84 dB(A) $L_{eq(8)}$, and would exceed the limit of 75 dB(A) $L_{eq(8)}$ established in the City's Municipal Code. Temporary noise impacts due to construction activities at site L-6 would be potentially significant.

Site OE-5

There are residential uses located adjacent to housing site OE-5. Residential uses are as close as 45 feet from the center of construction activity. Average construction noise levels at this distance would be 83 dB(A) $L_{eq(8)}$, and would exceed the limit of 75 dB(A) $L_{eq(8)}$ established in the City's Municipal Code. Temporary noise impacts due to construction activities at site OE-5 would be potentially significant.

b. Housing Strategy Summaries

Housing Strategy 1 – Ready Made (RM)

Housing strategy 1 (RM) has potential to result in significant temporary noise impacts due to construction activities at the following housing sites: C-7, L-2, L-6, and OE-5 (Impact NOS-2).

Housing Strategy 2 – Build Your Own (BYO)

The residential land uses located adjacent to the housing sites associated with housing strategy 2 (BYO) are located more than 110 feet from the acoustic center of construction activities. Thus, construction noise levels at the residential properties located adjacent to these housing sites would not exceed 75 dB(A) $L_{eq(8)}$ (Impact NOS-2).

Housing Strategy 3 – Modified Mixed Use Places (MMUP)

Housing strategy 3 (MMUP) has potential to result in significant temporary noise impacts due to construction activities at the following housing sites: ALT-2, ALT-7, and CBHMG-1 (Impact NOS-2).

4.10.7.2 Significance of Impacts

Housing strategy 1 (RM) has the potential to result in significant temporary noise impacts due to construction activities at four housing sites (C-7, L-2, L-6, and OE-5) and housing strategy 3 (MMUP) has potential to result in significant temporary noise impacts due to construction activities at three housing sites (ALT-2, ALT-7, and CBHMG-1). Average construction noise levels at these housing sites would exceed the limit of 75 dB(A) $L_{eq(8)}$ established in the City's Municipal Code. Temporary noise impacts due to construction activities would be potentially significant (Impact NOS-2).

The residential land uses located adjacent to the housing sites associated with housing strategy 2 are located more than 110 feet from the acoustic center of construction activities. Thus, construction noise levels at the residential properties located adjacent to these housing sites would not exceed 75 dB(A) $L_{eq(8)}$.

4.10.7.3 Mitigation Framework

NOS-2: Prior to the issuance of future construction permits at the housing sites, a Construction Noise Control Plan shall be submitted to the City's Planning and Building Department for review and approval. The plan shall demonstrate that all construction activity shall be in compliance with noise standards provided in Section 9.32 of the City's Municipal Code. The construction noise control plan can include, but is not limited to, the following:

- Ensure that construction equipment is properly muffled according to industry standards and is in good working condition.
- Place noise-generating construction equipment and locate construction staging areas away from sensitive uses, where feasible.
- Implement noise attenuation measures to the extent feasible, which may include, but are not limited to, temporary noise barriers or noise blankets around stationary construction noise sources.
- Use electric air compressors and similar power tools rather than diesel equipment, where feasible
- Construction-related equipment, including heavy-duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 5 minutes.
- Construction shall be limited to the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday. No construction is permitted on Sundays or legal holidays.
- Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow for surrounding owners and residents to contact the job superintendent. If the City ~~County~~ or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party.

- Project developers shall require by contract specifications that heavily loaded trucks used during construction would be routed away from residential streets to the extent feasible. Contract specifications shall be included in construction documents, which shall be reviewed by the City prior to issuance of a grading permit.

4.10.7.4 Significance After Mitigation

Implementation of the controls outlined in the above measures would reduce construction noise levels emanating from the site, limit construction hours, and minimize disruption and annoyance. With the implementation of these controls, and the limited duration of the noise-generating construction period, the substantial temporary increase in ambient noise levels associated with housing sites C-7, L-2, L-6, and OE-5 under housing strategy 1 (RM) and housing sites ALT-2, ALT-7, and CBHMG-1 under housing strategy 3 (MMUP) would be less than significant.

4.10.8 Issue 4: Groundborne Noise and Vibration

Would the project result in the generation of excessive groundborne vibration or groundborne noise levels in the project vicinity above levels existing without the project?

4.10.8.1 Impacts

a. Housing Sites

The HEU does not propose the construction of new housing or other development; rather, it provides capacity for future development consistent with State Housing Element Law. Future development on housing sites would likely be located adjacent to existing structures. No operational components of the HEU include significant groundborne noise or vibration sources and no significant vibrations sources currently exist, or are planned, in the City. Thus, no significant groundborne noise or vibration impacts would occur with the operation of future projects implemented under the HEU.

Construction activities may include demolition of existing structures, site preparation work, excavation of parking and subfloors, foundation work, and building construction. Demolition for an individual site may last several weeks to months.

Ground vibrations in an outdoor environment are generally not perceptible (FTA 2006). The construction activities that generate excessive vibrations are blasting and impact pile driving. Projects implemented under the HEU would be constructed using typical construction techniques; no blasting is contemplated. Heavy construction equipment (e.g., bulldozer and excavator) would generate a limited amount of groundborne vibration during construction activities at short distances away from the source, and would not be a significant source of excessive vibration. The use of equipment would most likely be limited to a few hours spread over several days during demolition/grading activities. Non-pile driving or foundation work construction phases that have the highest potential of producing

vibration (such as jackhammering and other high power tools) would be intermittent and would only occur for short periods of time for any individual project site. Therefore, the project would not expose persons to excessive groundborne vibration, and as such, impacts would be less than significant.

b. Housing Strategy Summaries

As with the individual housing sites, no operational components of the housing strategies would include significant groundborne noise or vibration sources, and operational vibration impacts would be less than significant. Projects would be constructed using typical construction techniques. Heavy construction equipment (e.g., bulldozer and excavator) would generate a limited amount of groundborne vibration during construction activities at short distances away from the source, and would not be a significant source of excessive vibration. The project would not expose persons to excessive groundborne vibration, and as such, impacts would be less than significant. There would be no inherent difference in impacts among the housing strategies.

4.10.8.2 Significance of Impacts

No operational components of future development consistent with the ~~HEU floating~~new zone would include significant groundborne noise or vibration sources. Operational vibration impacts would be less than significant.

The construction activities that generate excessive vibrations are blasting and impact pile driving. Projects implemented under the HEU would be constructed using typical construction techniques; no blasting is contemplated. Heavy construction equipment (e.g., bulldozer and excavator) would generate a limited amount of groundborne vibration during construction activities at short distances away from the source, and would not be a significant source of excessive vibration. Non-pile driving or foundation work construction phases that have the highest potential of producing vibration (such as jackhammering and other high power tools) would be intermittent and would only occur for short periods of time for any individual project site. Therefore, the project would not expose persons to excessive ground-borne vibration, and as such, impacts would be less than significant.

4.10.8.3 Mitigation Framework

Impacts would be less than significant. No mitigation is required.