

5.5 NOISE

This section describes the existing noise environment of the UID and the surrounding region and evaluates the potential impacts associated with noise due to implementation of the SPA Plan.

It is noted that, as recently confirmed by the California Supreme Court, impacts of the environment on a project (as opposed to impacts of a project on the environment) are beyond the scope of required CEQA review. (California Building Industry Assn. v. Bay Area Air Quality Management Dist. [2015] 62 Cal. 4th 369, 392.) “[T]he purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project.” (Ballona Wetlands Land Trust v. City of Los Angeles (2011) 201 Cal. App. 4th 455, 473.)

The impacts discussion in this section are effects on the Project of preexisting environmental hazards or conditions, and therefore “do not relate to environmental impacts under CEQA and cannot support an argument that the effects of the environment on the project must be analyzed in and EIR.” (Ballona, supra, 201 Cal. App. 4th at p. 475.) Nonetheless, an analysis of these impacts is provided for informational purposes and full disclosure.

This EIR tiers from the Previous Environmental Review Documents, as described in Chapter 2.0, *Introduction*. Section 5.6, *Noise*, of the 2013 SEIR analyzed the existing conditions, potential impacts, and mitigation measures related to the proposed land uses for the GPA/GDPA area. The GPA/GDPA SEIR identified a significant and unavoidable impact related to permanent increases in traffic noise, and determined that mitigation would be required at the project level for this impact. Section 4.7, *Noise*, of the 2001 SEIR similarly identified a significant impact related to permanent increased in traffic noise; however, with implementation of a mitigation for a future noise study to be conducted at the time that specific development plans are proposed, impacts at the Lake Property were concluded to be less than significant. The analysis and discussion of the 2013 SEIR and the 2001 SEIR are incorporated by reference; this report includes updated mitigation measures that are equivalent to or better than measures included in the Previous Environmental Review Documents, based on current noise conditions in the Project vicinity.

Information contained in this section is based on the site-specific Acoustical Analysis Report prepared HELIX in April 2016. The Acoustical Analysis Report is provided as Appendix D to this EIR. This report updates the applicable information in the previously certified SEIRs.

5.5.1 Existing Conditions

A. **Regulatory Framework**

1. *Federal*

a. **Federal Aviation Administration Standards**

Enforced by the FAA, CFR Title 14, Part 150 prescribes the procedures, standards and methodology governing the development, submission, and review of airport noise exposure maps and airport noise compatibility programs, including the process for evaluating and approving or disapproving those programs. Title 14 also identifies those land uses which are normally compatible with various levels of exposure to noise by individuals. The FAA has determined that

interior sound levels up to 45 A-weighted decibels (dBA) Day-Night Sound Level (L_{DN}) or CNEL are acceptable within residential buildings. The FAA also considers residential land uses to be compatible with exterior noise levels at or less than 65 dBA L_{DN} (or CNEL).

b. Federal Transit Administration Standards and Federal Railroad Administration Standards

Although the Federal Transit Administration (FTA) standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA Transit Noise and Vibration Impact Assessment Manual (May 2006) are routinely used for projects proposed by local jurisdictions. The FTA and Federal Railroad Administration (FRA) have published guidelines for assessing the impacts of ground-borne vibration associated with rail projects, which have been applied by other jurisdictions to other types of projects. The FTA measure of the threshold of architectural damage for conventional sensitive structures from ground-borne vibration is 0.2 inches per second (in/sec) peak particle velocity (PPV).

2. State

a. 2013 California Green (CALGreen) Building Standards Code

The following noise control standards from the 2013 CALGreen (California Code of Regulations Title 24, Part 11, subsection 5.507.4, Acoustical Control) Building Standards Code for non-residential buildings are applicable to this project.

5.507.4.1 Exterior noise transmission, prescriptive method. Wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall meet a composite Sound Transmission Class (STC) rating of at least 50 or a composite Outdoor/Indoor Transmission Class (OITC) rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30 in the following locations:

1. Within the 65 CNEL noise contour of an airport.

Exceptions:

- a. L_{DN} or CNEL for military airports shall be determined by the facility Air Installation Compatible Land Use Zone plan.
- b. L_{DN} or CNEL for other airports and heliports for which a land use plan has not been developed shall be determined by the local general plan noise element.

2. Within the 65 CNEL or L_{DN} noise contour of a freeway or expressway, railroad, industrial source, or fixed-guideway source as determined by the Noise Element of the General Plan.

5.507.4.1.1 Noise exposure where noise contours are not readily available. Buildings exposed to a noise level of 65 dB L_{EQ} (1 hour) during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30).

5.507.4.2 Performance method. For buildings located as defined in Section 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (L_{EQ} 1 hour) of 50 dBA in occupied areas during any hour of operation.

5.507.4.3 Interior sound transmission. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.

3. *Local*

a. **City of Chula Vista General Plan**

The exterior land use noise compatibility guidelines from the City's General Plan Noise Element are shown in Table 5.5-1, *City of Chula Vista Exterior Noise Compatibility Guidelines*. These guidelines reflect the levels of noise exposure that are generally considered to be compatible with various types of land uses in the City.

Table 5.5-1 CITY OF CHULA VISTA EXTERIOR NOISE COMPATIBILITY GUIDELINES

Land Use	Annual CNEL					
	50	55	60	65	70	75
Residential						
Schools, Libraries, Daycare Facilities, Convalescent Homes, Outdoor Use Areas, and Other Similar Uses Considered Noise Sensitive						
Neighborhood Parks, Playgrounds						
Community Parks, Athletic Fields						
Offices and Professional						
Places of Worship (excluding outdoor use areas)						
Golf Courses						
Retail and Wholesale Commercial, Restaurants, Movie Theaters						
Industrial, Manufacturing						

Note: Shading represents the maximum noise level considered compatible for each land use category.

b. **City of Chula Vista Noise Control Ordinance**

Noise standards for the City are codified in the City Municipal Code's noise control ordinance. Applicable standards for the Project are listed below:

Section 19.68.030, Exterior Noise Limits, states that no person shall operate, or cause to be operated, any source of sound at any location within the city or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person which causes the noise level to exceed the environmental and/or nuisance interpretation of the applicable limits given in

Table 5.5-2, *City of Chula Vista Exterior Noise Limits*. The noise standards in Table 5.5-2 do not apply to construction activities.

Table 5.5-2 CITY OF CHULA VISTA EXTERIOR NOISE LIMITS

Receiving Land Use Category	Noise Level (dBA)	
	10 p.m. to 7 a.m. (Weekdays)	7 a.m. to 10 p.m. (Weekdays)
	10 p.m. to 8 a.m. (Weekends)	8 a.m. to 10 p.m. (Weekends)
All residential (except multiple dwelling)	45	55
Multiple dwelling residential	50	60
Commercial	60	65
Light industry – I-R and I-L zone	70	70
Heavy industry – I zone	80	80

Source: City noise control ordinance Section 19.68.030

Section 19.68.040, Interior Noise Limits, states that no person shall operate, or cause to be operated, any source of sound within a residential dwelling unit or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person which causes the noise level when measured inside a neighboring receiving dwelling unit to exceed the environmental and/or nuisance interpretation of the applicable limits given in Table 5.5-3, *City of Chula Vista Interior Noise Limits*.

Table 5.5-3 CITY OF CHULA VISTA INTERIOR NOISE LIMITS

Type of Land Use	Time Interval	Noise Level (dBA) not to be Exceeded		
		Any time	1 min in 1 hr	5 min in 1 hr
Multifamily	10 pm – 7 am	45	40	35
Residential	7 am – 10 pm	55	50	45

Source: City of Chula Vista Municipal Code Section 19.68.040

Section 19.68.050, Prohibited Acts, of the Chula Vista Municipal Code regulates vibration from construction and operational sources. It prohibits operating or permitting the operation of any device that creates a vibration that is above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property or at 150 feet from the source if on a public space or public right-of-way.

Section 19.68.060, Special provision (exemptions), of the Chula Vista Municipal Code provides an exemption from exterior noise standards for construction and rehabilitation activities.

Section 17.24.040 of Chula Vista's code limits construction activities to the hours of 7:00 a.m. to 10:00 p.m. Monday through Friday, and 8:00 a.m. to 10:00 p.m. on weekends, except when the work is necessary for emergency repairs required for health and safety.

c. City of Chula Vista Multiple Species Conservation Program Subarea Plan

The City's MSCP Subarea Plan regulates impacts to sensitive biological resources, including noise impacts. In accordance with Section 7.5.2 of the Chula Vista Subarea Plan, Adjacency Management Issues, uses in or adjacent to the Preserve should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to commercial areas and any other use that may introduce noises that could impact or interfere with wildlife utilization of the Preserve. Excessively noisy areas or activities adjacent to breeding areas, including temporary grading activities, must incorporate noise reduction measures or be curtailed during the breeding season of sensitive bird species, consistent with Table 3-5 of the MSCP Subregional Plan, included as Appendix A to the MSCP Subarea Plan. No clearing, grubbing, and/or grading are permitted within the MSCP Preserve during the breeding season of the sensitive species present.

Some studies, such as that completed by the Bioacoustics Research Team (1997), have concluded that 60 dBA is a single, simple criterion to use as a starting point for passerine impacts until more specific research is done. Associated guidelines produced by the USFWS require that project noise be limited to a level not to exceed 60 dBA L_{EQ} or, if the existing ambient noise level is above 60 dBA, increase the ambient noise level by 3 dBA at the edge of occupied habitat during the avian species breeding season.

B. Noise and Vibration Basics

Noise has been defined as “unwanted sound.” Sound becomes “unwanted” when it interferes with normal activities, causes actual physical harm, or has adverse effects on health.

Sound-level values discussed in this subchapter are expressed in terms of decibels (dB). Sound levels are not measured directly, but are calculated from sound pressure levels typically measured in dBA, which are adjusted to approximate the hearing sensitivity of humans. Time-averaged noise levels are referred to as “equivalent sound level” (L_{EQ}), which represents the average sound level over a given sample period. Unless a different time period is specified, L_{EQ} refers to a period of one hour.

The CNEL is the average of the intensity of a sound, with corrections made for time of day, and then averaged over 24 hours. The corrections are additions made to actual sound levels to account for increased human sensitivity to sound during the evening and night hours, when there is a decrease in the overall amount and loudness of noise generated, as compared to daytime hours. During these hours, sounds seem louder, and are weighted accordingly. The time of day corrections require the addition of 5 dB to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and the addition of 10 dB to sound levels at night from 10:00 p.m. to 7:00 a.m.

Vibration is defined as any oscillatory motion induced in a structure or mechanical device as a direct result of some type of input excitation. Vibration consists of waves transmitted through solid material. There are several types of wave motion in solids, unlike in air, including compressional, shear, torsional, and bending. The solid medium can be excited by forces, moments, or pressure fields. This leads to the terminology of “structure-borne/ground-borne” vibration.

Vibration energy spreads out as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. Soil properties also affect the propagation of

vibration. When ground-borne vibration interacts with a building there is usually a ground-to-foundation coupling loss, but the vibration can also be amplified by the structural resonances of the walls and floors. Vibration in buildings is typically perceived as rattling of windows or items on shelves or the motion of building surfaces. The vibration of building surfaces can also be radiated as sound and heard as a low-frequency rumbling noise, known as ground-borne noise.

The Federal Transit Administration has published standards for vibration impact assessments; Although these standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA Transit Noise and Vibration Impact Assessment Manual (May 2006) are routinely used for projects proposed by local jurisdictions. The FTA measure of the threshold of architectural damage for conventional sensitive structures from ground-borne vibration is 0.2 in/sec PPV and is used in this report to determine vibration impacts.

C. Existing Noise Environment

Existing noise sources, including transportation, operation, and construction that affect the Project site are described below.

1. Site Survey Noise Levels

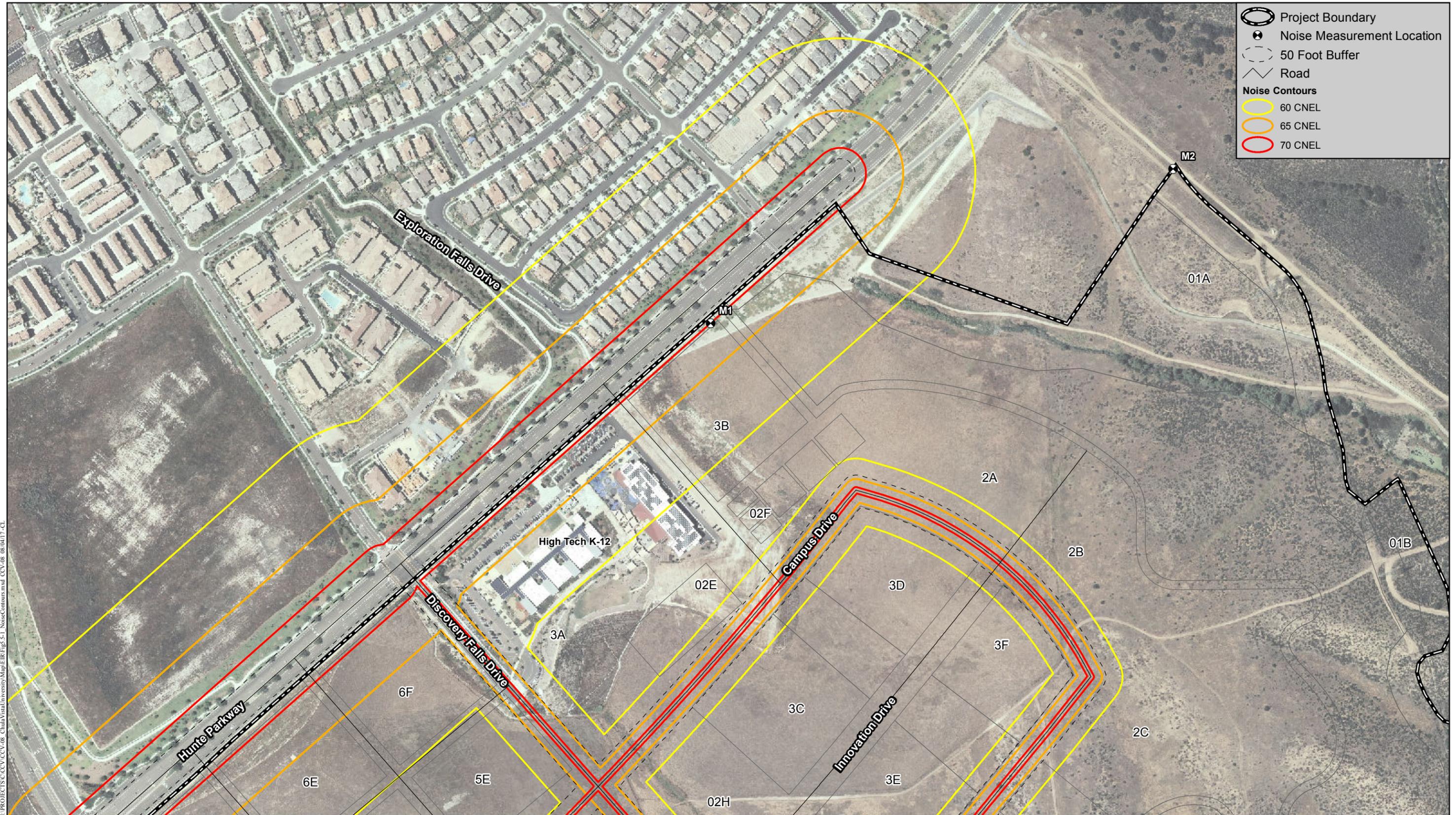
A traffic noise measurement and an ambient noise measurement were conducted during a site survey on March 1, 2016, to quantify the noise environment in the Project area. The traffic noise measurement was taken just west of the Hunte Parkway/Exploration Falls Drive intersection; the ambient measurement was taken south from Hunte Parkway on a utility road. The measurements were taken during the daytime and were 15 minutes in duration. A Larson Davis System LxT Integrating Sound Level Meter, calibrated with a Larson Davis CAL150 calibrator, was used to record the noise measurements. Table 5.5-4, *Noise Measurement Results*, summarizes the measured noise level each measurement location. The on-site measurement locations are shown on Figures 5.5-1a through 5.5-1c, *Buildout (Year 2030) + Project Traffic Noise Contours*.

Table 5.5-4 NOISE MEASUREMENT RESULTS

Site	Location	Conditions	Time	dBA L_{EQ}	Notes
1	On Hunte Parkway, just west of Exploration Falls Drive	69°F, 6 miles per hour (mph) wind, 61 percent humidity	10:23-10:38 a.m.	55.9	Consistent bird noise; sunny
2	Approximately 600 feet south from Hunte Parkway on utility road	70°F, 4 mph wind, 61 percent humidity	10:48-11:03 a.m.	43.5	Cloudy

Note: See Figure 5.5-1 for site measurement locations.

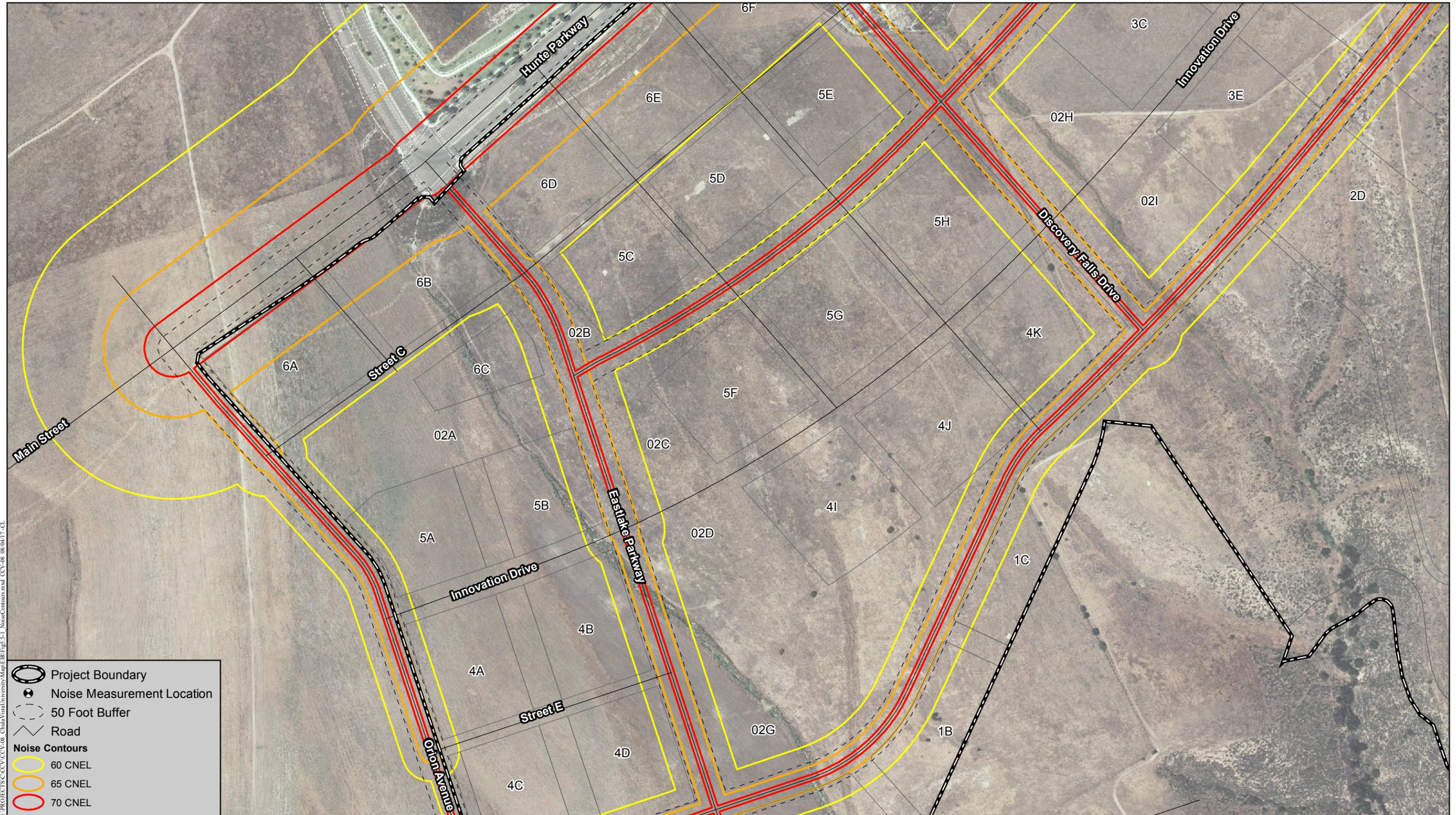
The primary noise sources for both measurements were traffic on Hunte Parkway. The measurements indicated a relatively quiet site location; however, traffic in the area is low compared to future levels, as the area is currently the furthest extent of buildout in the area (i.e., the



Buildout (Year 2030) + Project Traffic Noise Contours

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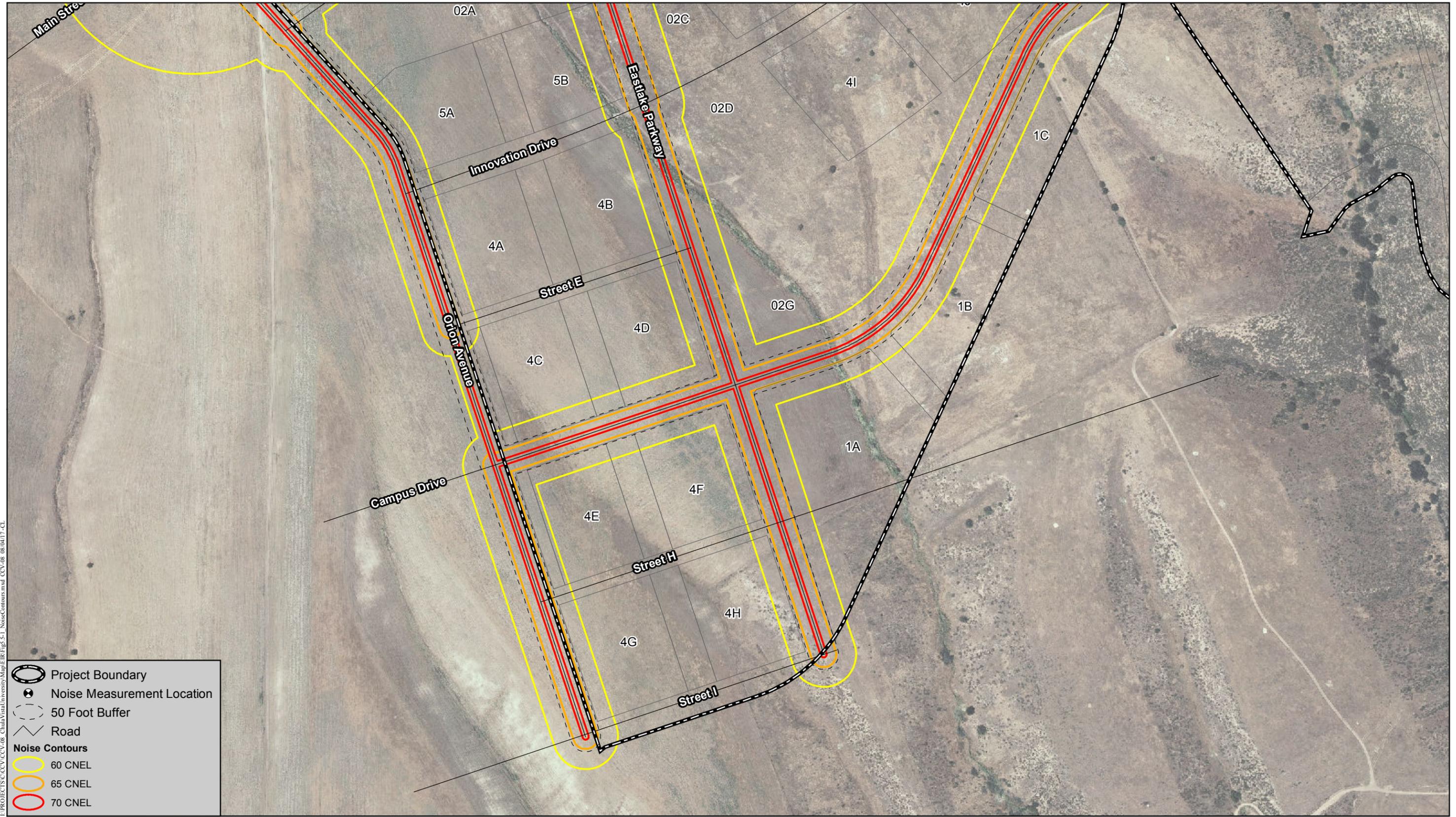
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Buildout (Year 2030) + Project Traffic Noise Contours

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Buildout (Year 2030) + Project Traffic Noise Contours

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area around the project is the current terminal extent of roadways, whereas in the future it will serve as a major thoroughfare).

2. *Transportation Noise Sources*

a. **Aviation**

The Project site is located approximately 2.5 miles northeast of Brown Field Municipal Airport, a public airport (see Figure 5.1-1), and 3.4 miles west of John Nichol's Field, a private airport. The Project site is not located within the 60 CNEL noise contour for the Brown Field Municipal Airport (ALUC 2010). With the distance from John Nichol's Field and the small size of the airport, the Project site would not be expected to be exposed to excessive noise from the airport.

b. **Roadways**

The only paved public road on-site is a small extension of Discovery Falls Drive to allow access to the High Tech K-12 School campus. Various paved and unpaved dirt roads exist on-site to provide for maintenance of infrastructure in the Otay River Valley. Eastlake Parkway and Hunte Parkway currently terminate at the northwest corner of the Project site. Major roadways in the surrounding area include Birch Road, located approximately 0.6 mile north of the Project site, and Olympic Parkway, located approximately one mile north of the Project site. Table 5.5-5, *Existing Traffic Noise Levels*, shows the existing noise levels generated by the roadways surrounding the Project site to the nearest noise-sensitive land use (NSLU). Noise levels along Olympic Parkway, Birch Road, Eastlake Parkway, and Proctor Valley Road currently exceed the City noise compatibility standard of 65 CNEL residential, schools, and parks.

Table 5.5-5 EXISTING TRAFFIC NOISE LEVELS

Roadway	Segment	Nearest NSLU (feet)	Existing Noise Level, measured from Roadway Centerline at nearest NSLU or 100 feet, whichever is less (CNEL)
Olympic Parkway	E. Palomar Street to SR-125	150	70.0
	SR-125 to Eastlake Parkway	N/A	70.0
	Eastlake Parkway to Hunte Parkway	120	66.1
Birch Road	La Media Road to SR-125	120	64.7
	SR-125 to Eastlake Parkway	70	67.7

Table 5.5-5 (cont.) EXISTING TRAFFIC NOISE LEVELS

Roadway	Segment	Nearest NSLU (feet)	Existing Noise Level, measured from Roadway Centerline at nearest NSLU or 100 feet, whichever is less (CNEL)
Hunte Parkway	Otay Lakes Road to Olympic Parkway	70	64.2
	Olympic Parkway to Exploration Falls Drive	120	59.5
	Exploration Falls Drive to Discovery Falls Drive	120	59.3
	Discovery Falls Drive to Eastlake Parkway	150	60.0
Eastlake Parkway	Otay Lakes Road to Olympic Parkway	60	69.7
	Olympic Parkway to Birch Road	120	65.2
	Birch Road to Hunte Parkway	110	57.2
Proctor Valley Road	Mt Miguel Road to Hunte Parkway	100	66.0

Source: HELIX 2016

3. *Operational Noise Sources*

The Project site and surrounding area is mostly undeveloped. In accordance with the Otay Ranch GDP, development is planned to occur to the west (Otay Ranch Village 9), north (Millenia), and south (Otay Ranch Village 11). Village 10 is anticipated to be planned using the traditional Otay Ranch village model. Future land uses planned for the Millenia (currently under construction) include destination retail, commercial, and entertainment development with higher density residential development, schools, and parks. The Village 10 is proposed for commercial, cultural, and entertainment services. However, none of these land uses have been developed and do not contribute to the existing noise environment.

Otay Valley Regional Park and the Otay River Valley form the southern boundary of the Project site and are proposed to remain undeveloped. High Tech K-12 School is within the Project site and the closest existing development to future project development. The closest development apart from the school to the Project site is in Village 11, located north of the Project site across Hunte Parkway. Development includes single- and multi-family residences and Camarena Elementary School.

4. *Noise Sensitive Land Uses*

NSLUs are land uses that may be subject to stress and/or interference from excessive noise. The Chula Vista General Plan defines NSLUs as residences, schools, hospitals, libraries, parks, places of worship, and outdoor use areas, including outdoor dining spaces. The City's MSCP Subarea

Plan defines sensitive wildlife species an NSLU. Industrial and commercial land uses are generally not considered sensitive to noise. NSLUs adjacent or nearby to the Main Campus Property include schools (High Tech K-12 School), single- and multi-family residences to the north across Hunte Parkway, and sensitive habitat to the east and southeast. NSLUs adjacent to the north, south, and west of the Lake Property include sensitive habitat (Lower Otay Lake is adjacent to the east). Future development within Village 9, Village 10, and the Millenia may also include NSLUs such as residences and parks adjacent to the Project.

5. *Vibration Sensitive Land Uses*

Land uses in which ground-borne vibration could potentially interfere with operations or equipment, such as research, manufacturing, hospitals, and university research operations (FTA 2006) are considered “vibration-sensitive.” The degree of sensitivity depends on the specific equipment that would be affected by the ground-borne vibration. In addition, excessive levels of ground-borne vibration of either a regular or an intermittent nature can result in annoyance to residential uses. Existing vibration-sensitive land uses near the Main Campus Property include single and multi-family residences and High Tech K-12 School. No vibration-sensitive land uses are currently located adjacent to the Lake Property. Future vibration-sensitive land uses on both properties may include university research operations and residences.

5.5.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines and related City criteria, impacts related to noise and vibration would be significant if it would:

- **Threshold 1:** Expose new development to noise levels at exterior use areas in excess of the noise compatibility standards established in the City General Plan Noise Element or generate noise levels that exceed the limits in the City noise ordinance. For residential, school, library, and neighborhood park uses, the exterior noise compatibility standard is 65 CNEL and the interior noise compatibility standard is 45 CNEL. For community parks and offices and professional land uses, the exterior noise compatibility standard is 70 CNEL.
- **Threshold 2:** Subject vibration-sensitive land uses to the structural damage threshold from ground-borne vibration of 0.25 in/sec PPV and the strongly perceptible human response threshold from ground-borne vibration of 0.1 in/sec PPV from a continuous/frequent intermittent source, as specified by Caltrans. According to Caltrans, major construction activity within 200 feet and pile driving within 600 feet may be potentially disruptive to sensitive operations (Caltrans 2002).
- **Threshold 3:** Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. A substantial permanent increase would occur if implementation of the proposed project results in an ambient noise level that exceeds the exterior noise limits established in the City General Plan Noise Element, including 65 CNEL for residential, school, and neighborhood park uses; 70 CNEL for community parks, office and professional uses, and athletic fields; and 75 CNEL for commercial uses. For transportation-related noise, a significant impact would occur if the

proposed project results in a 3 CNEL or greater increase in traffic noise on a roadway segment and the resultant noise level would exceed the City General Plan Noise Element exterior noise limits.

- **Threshold 4:** Result in temporary construction noise:

Outside the noise control ordinance-exempted hours of 7:00 a.m. to 10:00 p.m. Monday through Friday, and 8:00 a.m. to 10:00 p.m. on weekends; or

That exceeds 60 dBA L_{EQ} or an exceedance of the average ambient noise level by 3 dBA L_{EQ} , whichever is greater, at the edge of sensitive biological habitat within the MHPA during the breeding season.

- **Threshold 5:** For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public use airport or private airstrip, expose people residing or working in the project area to excessive noise.

5.5.3 Impact Analysis

- A. Threshold 1: Expose new development to noise levels at exterior use areas in excess of the noise compatibility standards established in the City General Plan Noise Element or generate noise levels that exceed the limits in the City noise ordinance. For residential, school, library, and neighborhood park uses, the exterior noise compatibility standard is 65 CNEL and the interior noise compatibility standard is 45 CNEL. For community parks and offices and professional land uses, the exterior noise compatibility standard is 70 CNEL.**

Implementation of the Project would have the potential to expose new development to noise levels at exterior use areas in excess of the noise compatibility standards established in the City General Plan Noise Element or generate noise levels that exceed the limits in the City noise ordinance by constructing new roadways, developing land uses near existing roadways, developing new operational sources of noise, and by increasing human activity throughout the Project site.

1. Operational Noise

Operational noise generated by the Project may affect both off-site and on-site NSLUs. Proposed NSLUs associated within the Project site include schools, libraries, parks, and residential land uses. Potential noise-generating land uses within the Project area include mixed-use commercial and resident-serving commercial and public or quasi-public uses including day care, school-related buildings, or parks. Potential stationary and intermittent operational noise sources from the Project include: HVAC units, loading docks, parking lots, nuisance noise, bells and loudspeaker announcements, recreational facilities, electronic amplification, maintenance activities, and infrastructure improvements.

a. Heating, Ventilation, and Air Conditioning Units

Mechanical HVAC units located on the ground or on rooftops of new commercial or multi-family apartment buildings would have the potential to generate noise levels that run continuously during

the day and night. For modeling, the units were conservatively assumed not to include noise attenuation provided by a parapet wall. Specific planning information is not available for the HVAC units at this time; modeling assumed the use of Carrier 16-ton packaged HVAC units (50PG03-16) with a manufacturer's Sound Power Rating of 91.4 dBA sound power level (S_{WL}). A cluster of eight HVAC units operating at a distance of 50 feet would generate a noise level of 61 dBA.

Depending on where they are located, HVAC units could exceed the City's hourly noise limit for adjacent parks and schools of 55 dBA L_{EQ} during daytime hours (45 dBA L_{EQ} at night for the parks) and the noise limit for adjacent multi-family residences of 60 dBA L_{EQ} during daytime hours (50 dBA L_{EQ} at night). For a single point source such as a piece of mechanical equipment, the sound level normally decreases by about 6 dBA for each doubling of distance from the source. Therefore, it is assumed that HVAC equipment would generate noise levels that exceed 45 dBA within 320 feet of the equipment, 50 dBA within approximately 180 feet of the equipment, 55 dBA within 100 feet of the equipment, and 60 dBA within 57 feet of the equipment. Consequently, residences or other NSLUs such as parks or schools located in close proximity to a building that requires an HVAC system could result in a potentially significant impact (Impact 5.5-1a).

b. Loading Docks

Commercial land uses also have the potential to generate noise from truck deliveries, such as engines idling and beeping from backing warning signals at commercial loading docks. Truck deliveries to the project would involve deliveries of supplies to commercial uses. State law currently prohibits heavy-duty diesel delivery trucks from idling more than five minutes; therefore, noise from idling would be limited to five minutes during truck deliveries (CCR Title 13, Section 2485). Truck trips would be periodic throughout the Project site and would not be concentrated in one location. Given the intermittent and short duration of noise from truck deliveries in a given location, truck deliveries would not be a source of excessive ambient noise. Therefore, impacts related to truck deliveries would be less than significant.

c. Parking Lots

Noise sources from parking lots include car alarms, door slams, radios, and tire squeals. These sources typically range from about 30 to 66 dBA at a distance of 100 feet (Gordon Bricken & Associates 1996) and are generally short-term and intermittent. Parking lots also have the potential to generate noise levels that exceed 65 dBA depending on the location of the source; however, noise sources from the parking lot would be different from each other in kind, duration, and location, so that the overall effects would be separate and, in most cases, would not affect noise-sensitive receptors at the same time. Therefore, noise generated from parking lots would be less than significant.

d. Nuisance Noise

Noise generated from residential uses is generally described as "nuisance noise." Nuisance noise is defined as intermittent or temporary neighborhood noise from sources such as amplified music, barking dogs, and landscape maintenance equipment that may be disturbing to other residents. The City noise control ordinance prohibits nuisance noise from exceeding the City's noise standards at

any time. Compliance with the noise control ordinance would limit exposure to excessive nuisance noise. The Chula Vista Police Department enforces the City's noise control ordinance. In addition, nuisance noises would be different from each other in kind, duration, and location, so that the overall effects would be separate and, in most cases, would not affect the receptors at the same time. Therefore, nuisance noise in residential neighborhoods would result in a less than significant impact.

e. Bells and Loudspeaker Announcements

Education-related buildings may generate noise from amplified noise such as bells and loudspeaker announcements. Bells or other announcement devices are classified as stationary non-emergency signaling devices by the City. The noise control ordinance prohibits schools from sounding these devices for more than 120 seconds continually in an hourly period, or intermittent sounding over a five-minute period in any hour. The future campus would comply with Chula Vista's noise standards and would result in less than significant impacts related to bells and loudspeaker announcements.

f. Recreational Facilities

The proposed trails and pathways throughout the Project site and the off-site trail connections would be used for walking and bicycling and would generally not support activities that would generate noise other than normal conservation levels. Therefore, the proposed trails would not be a source of operational noise. Recreational facilities that would have the potential to generate excessive noise levels include parks, common space areas, school playgrounds, and playing fields. Project-related facilities may be located in the O-2: Common Open Space and O-3: Pedestrian Walk sectors or the T-1 Future Development transect. Adjacent recreational facilities are present at the High Tech K-12 School campus, which has a playground area and a grassy play area. No large, stadium seating recreational facilities are expected for the Project and are not present at the High Tech K-12 School campus.

Visitors and recreational activity participants are expected to generate a range of noise levels. Activities would generate incidental recreational noise such as cheering for sports activities or children at play. Passive recreational activities such as open turf areas and group picnic area activities will typically generate lower noise levels as compared to active sports play. Noise from recreational facilities would be a periodic source of noise because it is generally limited to specific activity times that would not be expected to be consistent throughout an entire day.

The Project's Acoustical Analysis Report estimated that Project recreational facilities would be expected to generate a noise level of 45 dBA within 330 feet, 50 dBA within 190 feet, 55 dBA within 105 feet, and 60 dBA within 60 feet (Appendix D in this EIR). Noise generated from proposed recreational facilities in the O-2: Common Open Space and O-3: Pedestrian Walk sectors or the T-1 Future Development transect and High Tech K-12's playground and grassy play area would be subject to the City's daytime noise standards of 55 dBA for residential (including schools but excluding multi-family), 60 dBA for multi-family residential and 65 dBA for commercial land uses (lower noise limits would apply if a recreational facility remains open during evening or nighttime hours). Therefore, depending on the type of activity and number of users and the siting of proposed land uses, recreational facilities would have the potential to exceed City noise

ordinance limits. Consequently, residences or other NSLUs such as parks or schools located in close proximity to a proposed Project recreational facility (located in the O-2: Common Open Space and O-3: Pedestrian Walk sectors or the T-1 Future Development transect) could result in a potentially significant impact (Impact 5.5-1b). In addition, Project residences and/or other project NSLUs could be exposed to a potentially significant impact from High Tech K-12's playground and grassy play area (Impact 5.5-1c).

Recreational facilities may be located adjacent to the Preserve as part of the T-1 Future Development transect, which borders the Preserve. The amenities, facilities, and uses of the recreational facilities that occur within the Preserve Edge, a 100-foot buffer zone adjacent to the Preserve, would be restricted to the types that are least likely to impact adjacent biological resources. These uses are described in the Preserve Edge Plan and include trails and open green space. Playgrounds and sports courts are a potential use in recreational facilities, but would only be allowed outside of the Preserve Edge. As discussed above, these types of recreational facilities would be expected to generate noise levels of 60 dBA L_{EQ} up to 60 feet from the source; therefore, given the 100-foot buffer zone, these noise levels would not be expected to be significant in the MSCP Preserve (see the discussion on Adjacency Management in Section 5.6, *Biological Resources*). The Preserve Edge Plan was prepared in coordination with qualified biologists, including the determination of an adequate buffer zone and restricting uses to prevent indirect impacts to the Preserve, including noise impacts. The Biological Technical Report (HELIX 2016) determined that implementation of the Preserve Edge Plan would reduce indirect operational noise impacts from project development to a less than significant level by restricting allowable activities adjacent to the Preserve. Active uses such as low-activity play elements and exercise stations may be permitted within the buffer zone; however, such uses would be required to demonstrate consistency with MSCP Preserve Adjacency Guidelines. Provided that the proposed uses would not exceed 60 dBA L_{EQ} at the Preserve, it would be allowed. Therefore, impacts would be less than significant.

g. Electronic Amplification

Electronic amplification equipment would not be permanently installed at any of the proposed recreational facilities, but temporary systems may be used in conjunction with active sport events. Activities or events at the public parks that would include amplified noise or other temporary noise generating equipment would be required to obtain a permit from the City of Chula Vista Director of Library and Recreation. If a permit is not obtained, Section 2.66.185 of the City Municipal Code prohibits any park or recreation center user to operate a radio, television, stereo, or any similar electronic or mechanical device capable of producing or emitting sound at a volume where the sound is audible at a distance greater than 100 feet from the point of emission. Activities that require permitted amplified noise would be limited to normal park operation hours. In addition, amplified noise would not be a consistent source of noise. Activities would occur on various dates and times, and at varied locations. Permitted uses would still be subject to the City's hourly exterior noise level limits established in the City Municipal Code, which is enforced by the Chula Vista Police Department. Therefore, nuisance noise and permitted amplified noise from events at the Project recreational facilities would result in a less than significant impact.

h. Maintenance Activities

Scheduled maintenance by crews could occur on a daily basis at the Project parks. Maintenance activities would include the use of gasoline-powered mowers, trimmers, blowers, and edgers resulting in intermittent short-term temporary noise increases. Maintenance activities would generally occur during the day would be subject to the daytime noise control ordinance of 60 dBA at multi-family land uses and 65 dBA at commercial land uses. Although unlikely, if maintenance would be required during evening, night, or early morning hours, the City's nighttime noise control ordinance standards would apply. Landscape maintenance equipment, can result in intermittent noise levels that range from approximately 80 to 120 dBA at 3 feet (City of Anderson 2008).

Landscape maintenance would have the potential to exceed the daytime hourly average limit of 60 dBA up to approximately 0.6 mile from the recreational facility, and to exceed the hourly 65 dBA noise level limit up to approximately 0.33 mile away if all equipment operates continuously for at least an hour. As discussed above under recreational activity impacts, residences may be located adjacent to parks. However, maintenance equipment would not be operating at any one location for more than several minutes, and all equipment would not be operating simultaneously. Therefore, the hourly average noise level at a specific noise receptor would likely be less than the maximum noise level. Landscape maintenance would be subject to the exterior noise level limits established in the City's noise control ordinance. Due to the limited amount of time equipment would be operating in one location, operation of landscape equipment would generally not exceed the hourly noise level limit at a particular receptor. Therefore, landscape maintenance would result in a less than significant impact.

Occasional maintenance activities would be required along the edge of development within the T-1: Future Development and SD: Lake Blocks transects, such as vegetation and sediment removal; however, these activities would not require heavy construction equipment that would generate excessive noise. As described in the Preserve Edge Plan, a manual weeding program would be prepared for the preserve edge. Additionally, the Biological Technical Report determined that implementation of the Preserve Edge Plan would reduce indirect operational impacts from project development to a less than significant level, including noise. Similar to on-site infrastructure, occasional maintenance of the off-site utilities may require heavy equipment; however, such activities would be infrequent and temporary. The City's MSCP Plan states that infrastructure repairs and maintenance are allowable as needed in the MSCP Preserve (City 2003). Maintenance would be subject to the MSCP requirement that, to the extent practicable, access for non-emergency routine maintenance will be limited during bird breeding seasons in areas where breeding and/or nesting activity may occur. Therefore, impacts would be less than significant.

i. Infrastructure Improvements

The infrastructure improvements associated with the project include pipelines and electrical lines, which are passive systems and would not generate operational noise. Inspection of these facilities would not require intensive activities that would result in excessive noise levels. Occasional maintenance (2 to 4 times per year) may be required that necessitates the use of large equipment; however, such activities would be infrequent, temporary, and limited to the area close to the maintenance site. Maintenance equipment would be subject to the limits on operation hours in the

City's noise control ordinance for construction and building work in residential zones. Therefore, impacts that occur from operation of these facilities would be less than significant.

2. Transportation Noise

The greatest noise exposure to proposed project land uses would be from on-site vehicular traffic noise. Noise levels for on-site roadway segments were calculated with Buildout (Year 2030) traffic levels using the U.S. Department of Transportation's (USDOT's) Traffic Noise Model (TNM) version 2.5. Noise levels were modeled at a distance of 50 feet from the roadway centerline; this is a conservative estimate for the closest distance the Project land uses would be from the roadway centerline. Noise levels were modeled for one ground level and one upper story receptor at each location. A floor height of 26 feet was used to provide an estimated height for upper story receivers, and a distance of 5 feet was added to the floor height to represent receiver ear height. On-site roadway traffic volumes at buildout of the Project are based upon values presented in the project's TIA (LLG 2017).

The modeled noise level for each roadway segment is shown in Table 5.5-6, *Buildout (Year 2030) On-Site Traffic Noise Levels*. In addition, ground-level noise contours for 70 CNEL, 65 CNEL, and 60 CNEL were calculated for each roadway. These contours are shown in Figures 5.5-1a through 5.5-1c, and assume flat topography but do not take into account any shielding provided by the proposed buildings and represent unmitigated conditions. Detailed traffic noise modeling data is provided in the Project's Acoustical Analysis Report (Appendix D of this EIR).

**Table 5.5-6 BUILDOUT (YEAR 2030)
ON-SITE TRAFFIC NOISE LEVELS**

Roadway	Segment	Ground Level Traffic Noise Level (CNEL) ¹	Upper Story Traffic Noise Level (CNEL) ²	Exterior Noise Significant Impact? ³
Hunte Parkway	Exploration Falls Drive to Discovery Falls Drive	73	72	Yes
	Discovery Falls Drive to Eastlake Parkway	74	73	Yes
Main Street	Eastlake Parkway to Orion Avenue	74	73	Yes
Eastlake Parkway	Hunte Parkway to Street C	64	63	No
	Street C to Campus Drive	65	64	No
	Campus Drive to Otay Valley Road	64	63	No
Orion Avenue	Hunte Parkway to Street C	65	64	No
	Street C to Street E	63	63	No
	Street E to Campus Drive	57	57	No
	Campus Drive to Otay Valley Road	64	63	No

**Table 5.5-6 (cont.) BUILDOUT (YEAR 2030)
ON-SITE TRAFFIC NOISE LEVELS**

Roadway	Segment	Ground Level Traffic Noise Level (CNEL) ¹	Upper Story Traffic Noise Level (CNEL) ²	Exterior Noise Significant Impact? ³
Discovery Falls Drive	Hunte Parkway to Campus Drive	65	64	No
Campus Drive	Campus Drive to Eastlake Parkway	60	60	No
	Eastlake Parkway to Orion Avenue	64	63	No

¹ Noise levels were taken 50 feet from the roadway centerline, which is a conservative estimate of the distance to proposed project NSLUs.

² Upper story receives are assumed at a floor height of 26 feet

³ 65 CNEL is the most conservative noise level that is acceptable for the possible land uses (multi-family residential, schools, and neighborhood parks). Some land uses have an acceptable noise level higher than 65 CNEL (e.g., 70 CNEL for offices; 75 CNEL for retail and commercial).

Note: Noise levels are based on the traffic numbers provided in the project TIA (LLG 2016). Bold text indicates a significant exterior impact.

Project land uses located 50 feet from the roadway centerline of Hunte Parkway and Main Street would potentially be exposed to exterior noise levels of between 72 to 74 CNEL from traffic noise. For these roadway segments, noise levels would exceed 65 CNEL at the following distances: 210 feet on Hunte Parkway from Exploration Falls Drive to Discovery Falls Drive; 255 feet on Hunte Parkway from Discovery Falls Drive to Eastlake Parkway; and 230 feet on Main Street from Eastlake Parkway to Orion Avenue. Noise levels would exceed 70 CNEL at the following distances: 86 feet on Hunte Parkway from Exploration Falls Drive to Discovery Falls Drive; 106 feet on Hunte Parkway from Discovery Falls Drive to Eastlake Parkway; and 95 feet on Main Street from Eastlake Parkway to Orion Avenue.

These distances would include uses within the proposed T-3: Campus Commons, T-6: Gateway District, and SD: Flex Overlay transects. If residential, school, library, and neighborhood park uses are placed in these areas, noise levels would potentially exceed the exterior noise compatibility standard of 65 CNEL; if community parks and offices and professional land uses are placed in these areas, they would exceed the exterior noise compatibility standard of 70 CNEL. Therefore, impacts to exterior noise levels from the Project would be potentially significant. Commercial uses would be within the acceptable compatibility standard of 75 CNEL. In addition, all other internal roadways were modeled at 65 CNEL or less, and proposed land uses for the Project on these roadways would not be subjected to excessive exterior noise levels.

Regarding interior noise levels, traditional architectural materials are normally able to reduce exterior to interior noise by up to 15 dBA. Because building façade noise levels may exceed 60 CNEL at 11 of 13 studied Project roadway segments, traditional architectural materials would not be expected to attenuate interior noise to 45 CNEL and interior noise impacts on these roadways would be potentially significant. These include uses within the proposed transects T-1: Future Development, T-3: Campus Commons, T-4: Town Center, T-5: Urban Core, T-6: Gateway District and SD: Flex Overlay.

- B. Threshold 2: Subject vibration-sensitive land uses to the structural damage threshold from ground-borne vibration of 0.25 in/sec PPV and the strongly perceptible human response threshold from ground-borne vibration of 0.1 in/sec PPV from a continuous/frequent intermittent source, as specified by Caltrans. According to Caltrans, major construction activity within 200 feet and pile driving within 600 feet may be potentially disruptive to sensitive operations (Caltrans 2002).**

1. Off-site Impacts

The greatest potential source of vibration during construction activities would be a vibratory roller, which would be expected to be used within 100 feet of the nearest existing vibration-sensitive land use, the High Tech K-12 School campus. A vibratory roller would create approximately 0.210 in/sec PPV at a distance of 25 feet (Caltrans 2013). This would equal 0.046 in/sec PPV at a distance of 100 feet. This would be lower than the Caltrans measure of the structural damage threshold from ground-borne vibration of 0.25 in/sec PPV and lower than the strongly perceptible human response threshold from ground-borne vibration of 0.1 in/sec PPV from a continuous/frequent intermittent source. Therefore, although a vibratory roller may be perceptible to nearby off-site vibration-sensitive land uses, temporary impacts associated with the roller (and other potential construction equipment) would be less than significant.

2. On-site Impacts

Campus vibration-sensitive instruments and operations may require special consideration during construction. Vibration criteria for sensitive equipment are not defined and are often case-specific. In general, the criteria must be determined based on manufacturer specifications and recommendations by the equipment user. Although the proposed project includes areas within the main campus property that allow laboratory uses with vibration-sensitive equipment, major construction activity, including grading and paving of roadways, is likely to be complete within the campus property area prior to these facilities becoming fully operational. However, the potential for construction vibration to disturb vibration-sensitive instruments and operations may still occur, and impacts are assessed as potentially significant (Impact 5.5-2).

Construction may occur in areas other than the campus property subsequent to the campus facilities being occupied. Similar to off-site impacts, the greatest source of vibration during construction would be a vibratory roller, which is conservatively assumed to be within 50 feet of a university facility housing laboratory equipment. This would equal 0.098 in/sec PPV at a distance of 50 feet. This would be lower than the Caltrans measure of the structural damage threshold from groundborne vibration of 0.25 in/sec PPV and lower than the strongly perceptible human response threshold from ground-borne vibration of 0.1 in/sec PPV from a continuous/frequent intermittent source. Therefore, impacts to Project uses other than campus vibration-sensitive instruments and operations would be less than significant.

- C. Threshold 3: Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. A substantial permanent increase would occur if implementation of the proposed project results in an ambient noise level that exceeds the exterior noise limits established in the City General Plan Noise Element, including 65 CNEL for residential, school, and neighborhood park**

uses; 70 CNEL for community parks, office and professional uses, and athletic fields; and 75 CNEL for commercial uses. For transportation-related noise, a significant impact would occur if the proposed project results in a 3 CNEL or greater increase in traffic noise on a roadway segment and the resultant noise level would exceed the City General Plan Noise Element exterior noise limits.

This section addresses the potential for implementation of the Project to result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project. Project-related noise increases from stationary sources would be regulated by the City noise ordinance, and are therefore addressed under Threshold 1. Ambient noise increases related to project-generated traffic noise are not regulated by specific City ordinances and are therefore addressed within this issue topic.

1. Exterior

The following analysis is based on the Project-specific TIA prepared for the Project (LLG 2017). The potential for the Project to permanently increase traffic noise is addressed under the following scenarios: Existing + Project and Buildout (Year 2030) + Project.

a. Existing + Project

Noise levels for the Existing and Existing + Project scenarios are displayed in Table 5.5-7, *Existing + Project Traffic Noise Levels*. Seven of the 13 segments have existing noise levels above 65 CNEL at the nearest NSLU; with project traffic, 12 of the 13 segments would have noise levels above 65 CNEL at the nearest NSLU. Of these 12 segments, 4 of them would have a 3 CNEL or greater increase in noise from the project, and therefore these 4 segments would have a temporary, potentially significant impact under the Existing + Project scenario; however, no permanent impact would occur. Therefore, the Project would not result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project; permanent noise impacts would be less than significant.

The large increases in noise levels along these segments are mostly due to the lack of thoroughfares under existing conditions. In this scenario, a large amount of Project traffic travels east on Hunte Parkway or west on Birch Road, whereas in the buildout scenario additional thoroughfare roadways would be constructed to distribute traffic over a wider area (e.g., Main Street and Otay Valley Road).

Table 5.5-7 EXISTING + PROJECT TRAFFIC NOISE LEVELS

Roadway	Segment	Nearest NSLU (feet)	Noise Level from Roadway Centerline at nearest NSLU or 100 feet, whichever is less (CNEL)		Exceed 65 CNEL?	Increase in Noise Level	Significant Impact?
			Existing	Existing + Project			
Olympic Parkway	E. Palomar Street to SR-125	150	70.0	70.7	Yes	0.7	No
	SR-125 to Eastlake Parkway	N/A	70.0	70.9	Yes	0.9	No
	Eastlake Parkway to Hunte Parkway	120	66.1	67.5	Yes	1.4	No
Birch Road	La Media Road to SR-125	120	64.7	70.1	Yes	5.4	Yes
	SR-125 to Eastlake Parkway	70	67.7	70.4	Yes	2.8	No
Hunte Parkway	Otay Lakes Road to Olympic Parkway	70	64.2	66.4	Yes	2.2	No
	Olympic Parkway to Exploration Falls Drive	120	59.5	65.8	Yes	6.3	Yes
	Exploration Falls Drive to Discovery Falls Drive	120	59.3	63.8	No	4.5	Yes
	Discovery Falls Drive to Eastlake Parkway	150	60.0	64.7	Yes	4.7	Yes
Eastlake Parkway	Otay Lakes Road to Olympic Parkway	60	69.7	70.4	Yes	0.7	No
	Olympic Parkway to Birch Road	120	65.2	66.7	Yes	1.6	No
	Birch Road to Hunte Parkway	110	57.2	69.9	Yes	12.7	Yes
Proctor Valley Road	Mt Miguel Road to Hunte Parkway	100	66.0	66.5	Yes	0.5	No

Source: HELIX 2016d

Note: Bold text indicates a significant exterior impact.

b. Buildout (Year 2030) + Project

Noise levels for the Buildout (Year 2030) and Buildout (Year 2030) + Project scenarios are displayed in Table 5.5-8, *Buildout (Year 2030) + Project Traffic Noise Levels*. The Buildout (Year 2030) scenario compares traffic volumes with and without the Project, and without implementation of the mitigation measures identified in the TIA. This scenario assumes full buildout of the Project and circulation network, as well as cumulative development through Year 2030. Under this scenario, all roadway segments would exceed 65 CNEL; however, none of them would have a

3 CNEL or greater increase in noise from the Project and less than significant impacts to off-site NSLUs would occur.

Table 5.5-8 BUILDOUT (YEAR 2030) + PROJECT TRAFFIC NOISE LEVELS

Roadway	Segment	Nearest NSLU (feet)	Noise Level from Roadway Centerline at nearest NSLU or 100 feet, whichever is less (CNEL)		Exceed 65 CNEL?	Increase in Noise Level	Significant Impact?
			Buildout (Year 2030)	Buildout (Year 2030) + Project			
Olympic Parkway	E. Palomar Street to SR-125	150	70.8	71.2	Yes	0.4	No
	SR-125 to Eastlake Parkway	N/A	70.9	71.4	Yes	0.5	No
	Eastlake Parkway to Hunte Parkway	120	68.8	69.6	Yes	0.8	No
Birch Road	La Media Road to SR-125	120	69.3	69.5	Yes	0.2	No
	SR-125 to Eastlake Parkway	70	69.1	69.4	Yes	0.3	No
Hunte Parkway	Otay Lakes Road to Olympic Parkway	70	67.2	68.7	Yes	1.5	No
	Olympic Parkway to Exploration Falls Drive	120	74.2	75.7	Yes	1.5	No
	Exploration Falls Drive to Discovery Falls Drive	120	67.4	67.6	Yes	0.2	No
	Discovery Falls Drive to Eastlake Parkway	150	73.2	74.6	Yes	1.4	No

Table 5.5-8 (cont.) BUILDOUT (YEAR 2030) + PROJECT TRAFFIC NOISE LEVELS

Roadway	Segment	Nearest NSLU (feet)	Noise Level from Roadway Centerline at nearest NSLU or 100 feet, whichever is less (CNEL)		Exceed 65 CNEL?	Increase in Noise Level	Significant Impact?
			Buildout (Year 2030)	Buildout (Year 2030) + Project			
Eastlake Parkway	Otay Lakes Road to Olympic Parkway	60	73.8	73.9	Yes	0.1	No
	Olympic Parkway to Birch Road	120	68.8	68.9	Yes	0.2	No
	Birch Road to Hunte Parkway	110	66.5	68.3	Yes	1.8	No
Proctor Valley Road	Mt Miguel Road to Hunte Parkway	100	76.8	77.9	Yes	1.1	No

Source: HELIX 2016d

Note: Bold text indicates a significant exterior impact.

2. Interior

For both single and multi-family residential land uses, the threshold would be 45 CNEL for interior spaces. As typical architectural materials are expected to attenuate noise levels by 15 CNEL, if noise levels are above 60 CNEL at the building façades a significant interior impact would occur. A significant impact would occur for the Existing + Project and Buildout (Year 2030) + Project scenarios if the noise levels exceed 60 CNEL at the nearest NSLUs and if the Project's contribution would be 3 CNEL or greater.

All roadways under the Existing + Project and Buildout (Year 2030) + Project scenarios would exceed 60 CNEL. Under the Existing + Project scenario, the Project would contribute a 3 CNEL or greater increase to five roadways. Therefore, the Project's off-site transportation noise under the Existing + Project scenario would cause temporary, potentially significant direct impacts to the interior noise; however, no permanent impact would occur. Therefore, the Project would not result in a substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project; permanent noise impacts would be less than significant.

Under the Buildout (Year 2030) + Project scenario, the Project would not contribute a 3 CNEL or greater increase to any roadway and no impacts under this scenario would occur.

D. Threshold 4: Result in temporary construction noise:

- Outside the noise control ordinance-exempted hours of 7:00 a.m. to 10:00 p.m. Monday through Friday, and 8:00 a.m. to 10:00 p.m. on weekends; or

- That exceeds 60 dBA LEQ or an exceedance of the average ambient noise level by 3 dBA LEQ, whichever is greater, at the edge of sensitive biological habitat within the Multi-habitat Planning Area (MHPA) during the breeding season.

The primary source of temporary noise associated with implementation of the Project would be construction activities. Construction for each project would involve several stages including grading, foundation construction, and finish construction. Noise generated by construction equipment can vary in intensity and duration during each phase of construction. Reasonable worst-case construction scenarios would be from the simultaneous operation of an excavator, loader, and dump truck during grading, which is the construction activity that typically generates the highest noise levels. These pieces of equipment would be used during grading to remove or modify soil, with the loaders and dump trucks removing the debris. Noise impacts to specific receptor groups (humans and wildlife) are described below.

1. Human Receivers

Off-site human receptors located near future construction activities include the single- and multi-family residences across Hunte Parkway and the High Tech K-12 School campus. The single- and multi-family residences would be located approximately 250 feet and the High-Tech K-12 School campus would be located approximately 100 feet from construction activities. Construction noise levels from the use of an excavator, loader, and dump truck could temporarily reach 65.9 dBA LEQ at 250 feet and 73.9 dBA LEQ at 100 feet.

Future on-site NSLUs may occupy buildings such as academic buildings or residences while other parts of the Project are still undergoing construction. A conservative estimate is that construction activities with an excavator, loader, and dump truck may occur within 50 feet of future on-site NSLUs. Construction noise levels from the use of an excavator, loader, and dump truck could temporarily reach 79.9 dBA LEQ at 50 feet.

As discussed under Section 2.3, the Chula Vista Municipal Code does not specify construction noise limits but does limit construction activities to the hours of 7:00 a.m. to 10:00 p.m. Monday through Friday, and 8:00 a.m. to 10:00 p.m. on weekends. The Project would only perform construction activities within these hours; therefore, noise impacts from construction activities to these receptors would be less than significant.

2. Sensitive Habitat

Sensitive habitat is located within the Project site, specifically in the eastern and southeastern portions of the Main Campus Property and the majority of the Lake Property. The MSCP Preserve area, containing sensitive habitat, is located adjacent to the east and south of the Main Campus Property and adjacent to the west and north of the Lake Property. These habitat areas may support avian nesting for sensitive bird species that may be affected by construction noise. These habitat areas may be within approximately 30 feet of the closest project construction activities. Construction noise levels from an excavator, loader, and dump truck at this distance could temporarily reach 84.3 dBA LEQ. The 60 dBA LEQ contour line for the use of these pieces of equipment would be approximately 500 feet. Therefore, if construction activities using an

excavator, loader, and a dump truck occur within 500 feet of sensitive habitat, a potentially significant noise impact would occur to nesting birds in sensitive habitat (Impact 5.5-3).

E. Threshold 5: For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public use airport or private airstrip, expose people residing or working in the project area to excessive noise.

The Project site is located approximately 2.5 miles northeast of Brown Field Municipal Airport, a public airport, and 3.4 miles west of John Nichol's Field, a private airport. The Project site is not located within the 60 CNEL noise contour for the Brown Field Municipal Airport (ALUC 2010). With the distance from John Nichol's Field and the small size of the airport, the Project site would not be expected to be exposed to excessive noise from the airport. Therefore, impacts associated with the airports are less than significant.

5.5.4 Level of Significance Prior to Mitigation

A. Excessive Noise Levels

Impact 5.5-1a: Project HVAC units may generate exterior and interior noise levels in excess of the City's noise control ordinance at nearby NSLUs within Transects T-3A, T-3B, T-6A, T-6B, T-6D, T-6E, and SD: Flex Overlay.

Impact 5.5-1b: Active uses at recreational facilities (e.g., parks and sport courts) may generate noise in excess of City noise control ordinance standards at nearby NSLUs.

Impact 5.5-1c: Project residences and/or other project NSLUs could be exposed to a potentially significant impact from High Tech K-12's playground and grassy play area.

B. Ground-borne Vibration

Impact 5.5-2: Construction vibration impacts related to ground-borne vibration would be potentially significant.

C. Permanent Increase in Ambient Noise Levels

Implementation of the Project is planned to be constructed over a period of approximately 25 years, and over time would include the construction of new roadways that would provide new connections from the Project area to the regional transportation system (as can be seen in the Buildout [Year 2030] scenario). These new connections would reduce long-term traffic on the roadways surrounding the Project site by routing some cumulative traffic through the west and southwest instead of the surrounding roadways to the north and east. In addition, these connections would direct traffic generated by the Project away from the existing off-site roadways and reduce associated traffic noise. Therefore, no mitigation measures are required.

In the Buildout (Year 2030) scenario, the Project would not result in a significant exterior or interior traffic noise increase on any roadway.

D. Temporary Increase in Ambient Noise Levels

Impact 5.5-3: Construction noise may exceed the 60 dBA L_{EQ} threshold for sensitive habitat in the MSCP Preserve Area and a significant temporary noise impact would occur to nesting birds in sensitive habitat.

Construction of the Project, including grading activities, would not cause significant noise impacts to human receptor NSLUs.

E. Aircraft Noise

Impacts from airport noise on the Project would be less than significant.

5.5.5 Mitigation Measures

The exact location of future development, such as individual residences, commercial buildings, and park amenities is currently unknown. Therefore, the location of specific setbacks, sound barriers, and other noise attenuating features cannot be determined at this time. The following mitigation measures require subsequent analysis when this information becomes available to ensure compliance with applicable noise regulations.

A. Excessive Noise Levels

Implementation of the Project would expose on-site land uses to noise levels in excess of the City's noise compatibility standards, including from the projected traffic noise levels (Impacts 5.5-1a through 5.5-1c). Mitigation Measures 5.5-1a through 5.5-1e would reduce noise exposure:

5.5-1a Site-Specific Acoustic Analysis – Multi-Family Residences. Concurrent with Design Review and prior to the approval of building permits for multi-family areas within Transects T-3A, T-3B, T-6A, T-6B, T-6D, T-6E, and SD: Flex Overlay, where first and/or upper floor exterior noise levels exceed 60 CNEL and/or where required outdoor area (patios or balconies) noise levels exceed 65 CNEL, the City shall require: (1) an acoustical analysis demonstrating to the satisfaction of the Development Services Director (or their designee) that the proposed building plans ensure that interior noise levels due to exterior noise sources will be at or below California's Title 24 Interior Noise Standards (i.e., 45 CNEL) in any habitable room, and (2) all outdoor useable areas are not exposed to noise levels in excess of the City's noise compatibility guidelines for outdoor use areas (i.e., 65 CNEL). The analysis must also identify Sound Transmission Loss rates of each window. Design-level architectural plans will be available during design review and will permit the accurate calculation of transmission loss for habitable rooms. For these areas, it may be necessary for the windows to be able to remain closed to ensure that interior noise levels meet the interior standard of 45 dBA CNEL, in which case, adequate ventilation systems shall be installed. The City shall require noise attenuation features that would (1) reduce sound levels to 45 CNEL in any habitable room, and (2) that would reduce sound levels to 65 CNEL at outdoor usable areas.

5.5-1b Site-Specific Acoustic Analysis – Non-Residential NSLUs. Concurrent with Design Review and prior to the approval of building permits for any non-residential NSLUs

(schools, libraries, neighborhood parks) within Transects T-3A, T-3B, T-6A, T-6B, T-6D, T-6E, and SD: Flex Overlay, where exterior noise levels exceed 65 CNEL, the City shall require a site design plan and subsequent acoustical analysis demonstrating to the satisfaction of the Development Services Director (or their designee) that all outdoor useable areas are not exposed to noise levels in excess of 65 CNEL. Measures to reduce noise levels may include, but would not be limited to, setback of structures from the roadway, installing acoustic barriers, or orienting outdoor activity areas away from roadways so that surrounding structures provide noise attenuation. Wall and roof-ceiling assemblies making up the building envelope shall comply with the requirements of the 2013 CALGreen Building Code and meet a composite STC rating of at least 50 or a composite OITC rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30 in compliance with the CALGreen Building Code. The City shall require noise attenuation features to reduce sound levels to 65 CNEL at outdoor usable areas.

5.5-1c Site-Specific Acoustic Analysis – Office Uses. Concurrent with Design Review and prior to the approval of building permits for any office use within Transects T-3A, T-3B, T-6A, T-6B, T-6D, T-6E, and SD: Flex Overlay the City shall require a site design plan and subsequent acoustical analysis demonstrating to the satisfaction of the Development Services Director (or their designee) that exterior noise levels at the property line are at or below the City’s noise compatibility guidelines for office uses (i.e., 70 CNEL). Measures to reduce noise levels may include, but would not be limited to, setback of structures from the roadway, installing acoustic barriers, or, in mixed-use buildings, orienting offices away from roadways so that surrounding structures provide noise attenuation. The City shall require noise attenuation features to reduce sound levels to 70 CNEL at the property line.

5.5-1d HVAC Mechanical Equipment Shielding. Concurrent with Design Review and prior to the approval of building permits for non-residential development, the City shall require a design plan for the project demonstrating to the satisfaction of the Development Services Director (or their designee) that the noise level from operation of mechanical equipment will not cumulatively exceed the following noise level limits for a designated receiving land use category as specified in Section 19.68.030 of the City noise control ordinance. Noise control measures may include, but are not limited to, the selection of quiet equipment, equipment setbacks, silencers, and/or acoustical louvers. The City shall require noise attenuation features that would reduce sound levels to levels that are allowable under the Chula Vista noise control ordinance:

- From 10 p.m. to 7 a.m. on weekdays and from 10 p.m. to 8 a.m. on weekends:
 - 45 dBA for residential
 - 50 dBA for multiple dwelling residential
 - 60 dBA for commercial
 - 70 dBA for light industry (I-R and I-L zone)
 - 80 dBA for heavy industry (I zone)

- From 7 a.m. to 10 p.m. on weekdays and from 8 a.m. to 10 p.m. on weekends:
 - 55 dBA for residential
 - 60 dBA for multiple dwelling residential
 - 65 dBA for commercial
 - 70 dBA for light industry (I-R and I-L zone)
 - 80 dBA for heavy industry (I zone)

Noise control measures may include, but are not limited to, the selection of quiet equipment, equipment setbacks, silencers, and/or acoustical louvers. The City shall require noise attenuation features that would reduce sound levels to levels at or below the allowable levels set forth in the Chula Vista noise control ordinance.

5.5-1e Site Specific Analysis – Recreational Facilities. Concurrent with the preparation of site-specific plan(s) and prior to the approval of a grading plan, the City shall require the preparation of an acoustical analysis to ensure that noise levels generated from any active uses at the recreational facilities, such as sports fields, shall not exceed the receiving land use category's exterior noise limits as identified in the City noise control ordinance. Measures to reduce noise levels may include, but would not be limited to, siting of structures or buildings either at the recreational facilities or at the receiving land use site in order to provide setbacks between active areas of the facilities and adjacent noise sensitive uses or construction of a wall to provide noise attenuation. Final noise attenuation design would be determined by a site-specific acoustic analysis conducted by a qualified acoustical engineer, to the satisfaction of the Development Services Director (or their designee).

B. Excessive Ground-Borne Vibration

Project construction vibration impacts related to ground-borne vibration would be potentially significant (Impact 5.5-2). Implementation of Mitigation Measure 5.5-2 would reduce construction vibration impacts:

5.5-2 For major construction activity involving heavy earth moving equipment within 200 feet, and pile driving within 600 feet, of vibration-sensitive land uses (e.g., vibration sensitive laboratory equipment), prior to the initiation of construction activities, the City shall approve a construction vibration mitigation program developed by a qualified person experienced in the fields of environmental noise and vibration assessment to be implemented by the construction contractor. The construction vibration mitigation program shall include measures to reduce vibration resulting from construction activities to the maximum extent practicable. Notification and monitoring of construction activities shall include, but not be limited to, the following:

- Vibration monitoring shall be performed during construction to establish the level of vibration produced by high impact activities. Monitoring shall be conducted when any construction would occur within 50 feet of a vibration sensitive land use. Monitoring shall be conducted using a portable vibration-monitoring instrument that

provides a calibrated record of local ground movement/accelerations. If construction vibration exceeds 2.0 in/sec, alternative work methods and equipment shall be used. Baseline vibration levels at specified locations shall be established prior to construction.

- Building occupants shall be notified at least two weeks prior to the start of construction that would occur within 50 feet of any vibration sensitive land use.

C. Permanent Increase in Ambient Noise Levels

Permanent increases in ambient noise levels would be less than significant and no mitigation is required.

D. Temporary Increase in Ambient Noise Levels

Construction noise may result in a significant temporary noise impact to nesting birds (Impact 5.5-3). Mitigation Measures 5.6-4 through 5.6-8a from Section 5.6, *Biological Resources*, of this EIR, which require pre-construction bird surveys, shall be implemented to address this temporary noise impact.

E. Airport Noise Levels

Because the Project site is not located within the 60 CNEL noise contour for Brown Field Municipal Airport, no noise impacts related to the airport would occur. Therefore, no mitigation measures would be required.

5.5.6 Level of Significance After Mitigation

A. Excessive Noise Levels

Project impacts related to excessive noise levels (Impacts 5.5-1a through 5.5-1c) would be reduced to less than significant levels with implementation of Mitigation Measures 5.5-1a through 5.5-1e because the mitigation would require compliance with the City's noise control ordinance, the General Plan noise compatibility guidelines, and the CALGreen Building Standards Code.

B. Excessive Ground-Borne Vibration

Project impacts related to excessive ground-borne vibration (Impact 5.5-2) would be reduced to less than significant levels with implementation of Mitigation Measure 5.5-2 because a mitigation program, including monitoring and notification would be required prior to blasting or pile-driving activities within proximity to buildings containing vibration-sensitive instruments and operations.

C. Permanent Increase in Ambient Noise Levels

Impacts related to a permanent increase in ambient noise levels would be less than significant without mitigation.

D. Temporary Increase in Ambient Noise Levels

Project impacts related to temporary construction noise to nesting birds would be reduced to less than significant levels with implementation of pre-construction bird surveys (Mitigation Measures 5.6-4 through 5.6-8a from Section 5.6, *Biological Resources*, of this EIR) because the mitigation would require confirmation that nesting birds are either absent, or if present, that a work buffer is established before construction activities occur.

E. Airport Noise Levels

Impacts related to aircraft noise would be less than significant without mitigation.