HELIX
Environmental Planning

Kearny Mesa Logistics Center Project

Acoustical Analysis Report

September 2020 | LTD-18

Prepared for:

Latitude 33 Planning & Engineering
9968 Hibert Street
San Diego, CA 92131

Prepared by:

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ACRONYMS AND ABBREVIATIONS

ADT	average daily trips
AEOZ	Airport Environs Overlay Zone
ALUCP	Airport Land Use Compatibility Plan
ANSI	American National Standards Institute
APN	Assessor's Parcel Number
ASHRAE	American Society of Heating, Refrigeration, and Air Conditioning Engineers
CAD	Computer Aided Design
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
City	City of San Diego
CNEL	Community Noise Equivalent Level
CY	cubic yards
dB	decibel
dBA	A-weighted decibel
EIR	Environmental Impact Report
hp	horsepower
HVAC	heating, ventilation, and air conditioning
Hz	Hertz
ITE	Institute of Transportation Engineers
kHz	kilohertz
L_{DN}	Day-Night sound level
L_{EQ}	time-averaged noise level
LLG	Linscott, Law & Greenspan Engineers
MCAS	Marine Corps Air Station
MHPA	Multi-Habitat Planning Area
mPa	micro Pascal
mph	miles per hour
MSCP	Multiple Species Conservation Program
NSLU	noise sensitive land use
OSHA	Occupational Safety and Health Administration
PPV	peak particle velocity

ACRONYMS AND ABBREVIATIONS (cont.)

RCNM	Roadway Construction Noise Model
rpm	revolutions per minute
SF	square feet/foot
SPL	sound pressure level
SR	State Route
STC	Sound Transmission Class
S_{WL}	Sound Power Level
TAP	Trane Acoustic Program
TNM	Traffic Noise Model
USDOT	U.S. Department of Transportation

EXECUTIVE SUMMARY

This report assesses potential construction and operational noise impacts associated with the Kearny Mesa Logistics Center (project) located in the Kearny Mesa Community Plan Area in the City of San Diego, (City) California. The project proposes the development of a 330,000 square foot (SF) building that would include light industrial (warehouse)/logistics uses, including 31,580 SF of accessory mezzanines that could be used as office space. In addition to the building, the project would also include approximately 330 surface parking spaces and approximately 79,300 SF of landscaped areas.

Project construction would involve demolition, site preparation (e.g., clearing and grubbing), grading/excavation, building construction, paving, and architectural coating (e.g., painting). Project construction noise would not result in noise levels above the San Diego Noise Ordinance construction noise threshold of 75 dBA L_{EQ} (12-hour) measured at the nearest off-site noise sensitive land uses (NSLUs). Groundborne vibration impacts from construction would not exceed thresholds for annoyance of nearby building occupants or exceed thresholds for structural damage to nearby buildings. Project construction would require pre-construction surveys for nesting sensitive bird species. If coastal California gnatcatchers are discovered during the survey, mitigation would be required to monitor construction noise level, and/or erect temporary construction noise barriers.

Long-term on-site operational noise from the project's heating, ventilation, and air conditioning (HVAC) units, and loading dock activities would not exceed the City Noise Ordinance thresholds of 75 dBA L_{EQ} during the daytime, measured at the project boundary. The project's maximum contribution to traffic noise would not exceed 3 Community Noise Equivalent Level (CNEL) along any project affected roadway segment, nor would it cause an increase in traffic noise that would expose off-site exterior use areas to levels in excess of the City General Plan Noise Element standards. The project site exterior noise level would be compatible with proposed warehouse/logistics land use and conditionally compatible with the proposed associated office space as defined in the City General Plan Noise Element. As part of a condition of approval, an exterior-to-interior noise analysis would be required once building window and wall plans are available to demonstrate that interior office noise levels do not exceed City standards.

The project would be in the 60 to 65 CNEL contour for the Miramar Marine Corps Air Station (MCAS) Miramar. The proposed warehouse land use/logistics and associated office space would be compatible for both outdoor and indoor spaces as defined in the MCAS Miramar Airport Land Use Compatibility Plan.

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1.0 INTRODUCTION

This report assesses the potential noise impacts that would be associated with construction noise, operational noise, and project-generated traffic noise for the Kearny Mesa Logistics Center Project (project). The analysis also includes an assessment of the compatibility of the proposed land use with exterior noise generated from State Route (SR) 52 and SR 163 and identifies the necessary noise reduction measures to reduce exterior and interior noise levels.

1.1 PROJECT LOCATION

The approximately 20.7-acre project site is located at 5670 Kearny Mesa Road in the Kearny Mesa Community Plan Area of the city of San Diego, approximately 8 miles north of downtown San Diego and 7.5 miles east of the Pacific Ocean, southwest of the interchange of State Route (SR) 52 and SR 163. The project is situated within Assessor Parcel Numbers (APNs) 356-032-01 and 356-032-02 (see Figure 1, *Regional Location*, and Figure 2, *Project Vicinity [Aerial Photo])*.

1.2 PROJECT DESCRIPTION

The project consists of the redevelopment of the approximately 15.7 acres of the project site. The project would demolish the existing structures on the site and construct an approximately 330,000-square foot (SF) light industrial (warehouse)/logistics building in the southern and western portions of the site. The proposed building would be approximately 39.5 feet in height and would be constructed as a cold shell speculative warehouse/distribution building. The proposed building would consist primarily of painted concrete tilt-up construction with smooth wall panels with steel sub frame, open steel web joint and panelized wood roof structure. The building would include approximately 31,580 SF of accessory mezzanines that could be used as office space. In addition to the building, the project would also include approximately 330 surface parking spaces and approximately 79,300 SF of landscaped areas. The proposed landscaping would consist of trees that would provide shade for the parking areas, low maintenance, drought tolerant shrubs, succulents and ornamental grasses. The existing vernal pools on approximately five acres in the northeast portion of the project site would be preserved (see Figure 3, *Existing Site*, and Figure 4, *Site Plan*).

2.0 ENVIRONMENTAL SETTING

2.1 NOISE AND SOUND LEVEL DESCRIPTORS AND TERMINOLOGY

All noise level or sound level values presented herein are expressed in terms of decibels (dB), with A-weighting (dBA) to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol L_{EQ}, with a specified duration. The Community Noise Equivalent Level (CNEL) is a 24-hour average, where noise levels during the evening hours of 7:00 p.m. to 10:00 p.m. have an added 5 dBA weighting, and sound levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. have an added 10 dBA weighting. This is similar to the Day Night sound level (L_{DN}), which is a 24-hour average with an added 10 dBA weighting on the same nighttime hours but no added weighting on the evening hours. Sound levels expressed in CNEL are always based on dBA. These metrics are used to express noise levels for both measurement and municipal regulations, as well as for land use guidelines and enforcement of noise ordinances.

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is defined as loud, unexpected, or annoying sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver contribute to the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

The amplitude of pressure waves generated by a sound source determines the loudness of that source. A logarithmic scale is used to describe sound pressure level (SPL) in terms of dBA units. The threshold of hearing for the human ear is about 0 dBA, which corresponds to 20 micro Pascals (mPa).

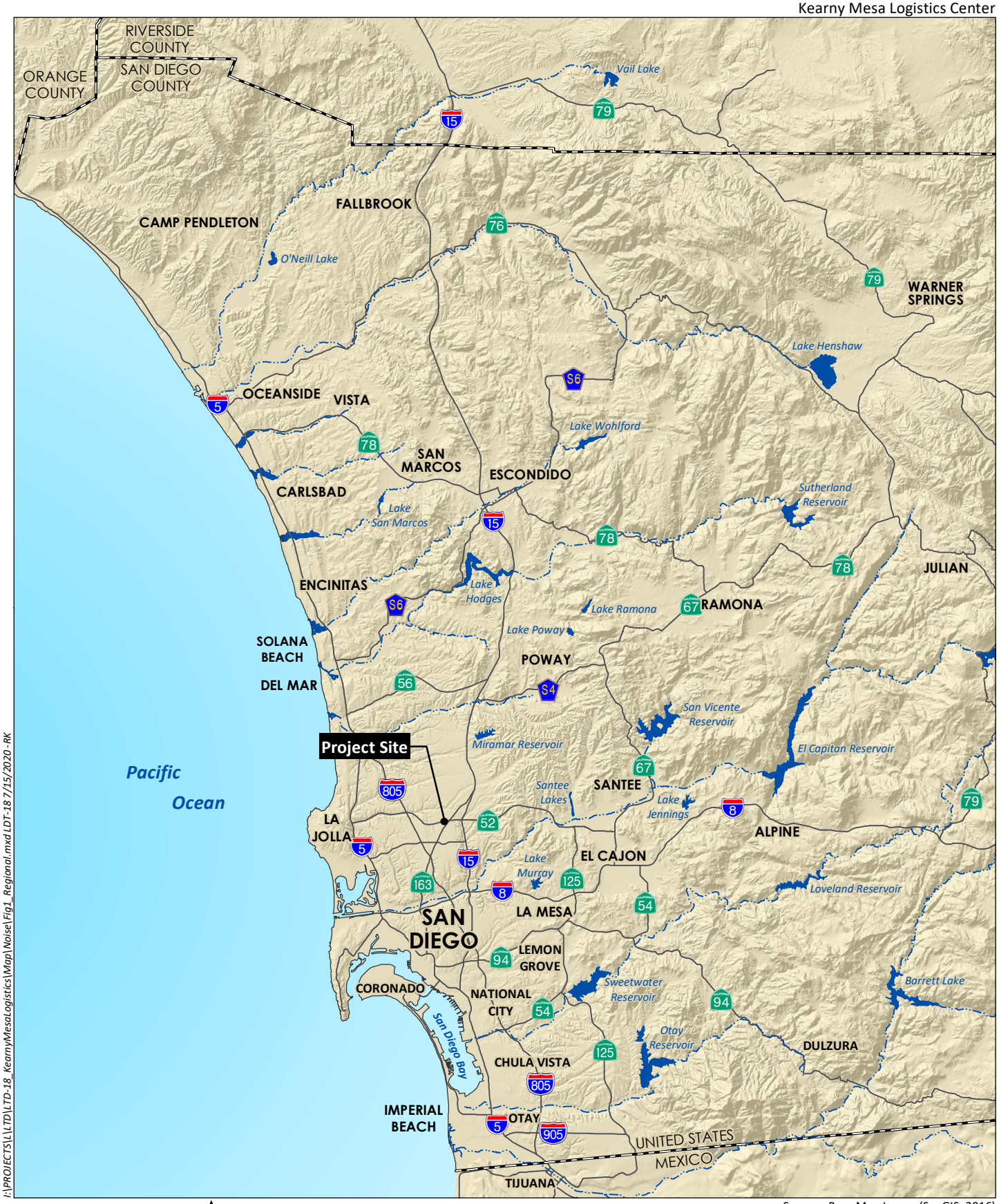
Because decibels are logarithmic units, SPL cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3 dBA increase. In other words, when two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dBA higher than one source under the same conditions.

2.2 GROUNDBORNE VIBRATION DESCRIPTORS AND TERMINOLOGY

Groundborne vibration consists of rapidly fluctuating motions or waves transmitted through the ground with an average motion of zero. Sources of groundborne vibrations include natural phenomena and anthropogenic causes (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions). Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the RMS velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. For the purposes of this analysis, a PPV descriptor with units of inches per second (in/sec) is used to evaluate construction-generated vibration for building damage and human complaints. Generally, a PPV of less than 0.08 in/sec does not produce perceptible vibration. At 0.12 PPV in/sec is the level at which there is a risk of architectural damage (e.g., cracking of plaster) to historical buildings and other vibration-sensitive structures and the level at which continuous vibration may become noticeable to building occupants. A level of 0.20 PPV in/sec is commonly used as a threshold for risk of architectural damage to non-engineered timber and masonry buildings (California Department of Transportation [Caltrans] 2013a).

2.3 NOISE AND VIBRATION SENSITIVE LAND USES

Noise-sensitive land uses (NSLUs) are land uses that may be subject to stress and/or interference from excessive noise, such as residential dwellings, schools, transient lodging (hotels), hospitals, educational facilities, and libraries. Industrial and commercial land uses are generally not considered sensitive to noise. Noise receptors are individual locations that may be affected by noise. The nearest NSLUs in the



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0 8 Miles

Source: Base Map Layers (SanGIS, 2016)

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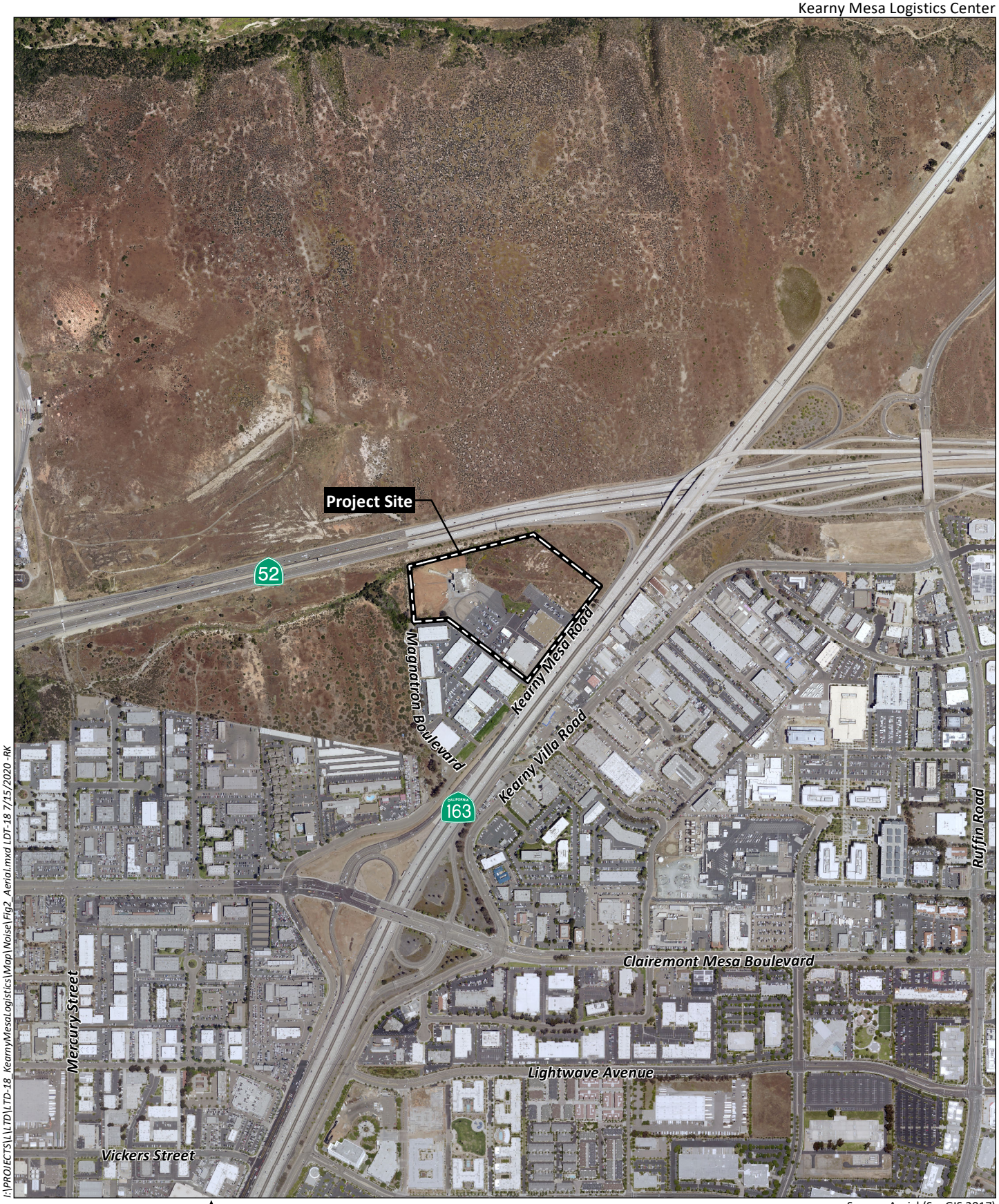
Regional Location

Figure 1



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0 1,000 Feet

Source: Aerial (SanGIS 2017)

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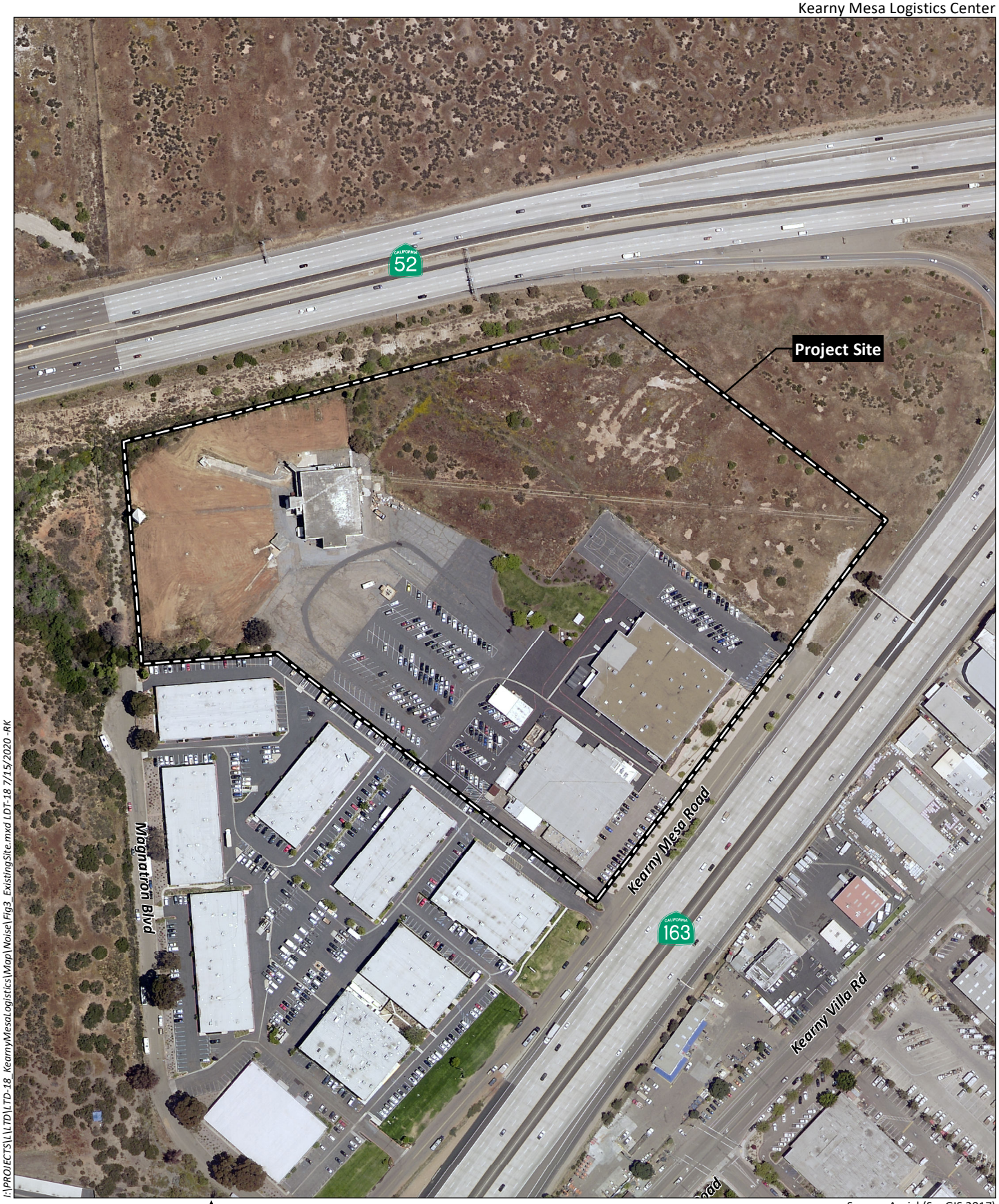
Project Vicinity (Aerial Photo)

Figure 2



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Source: Aerial (SanGIS 2017)

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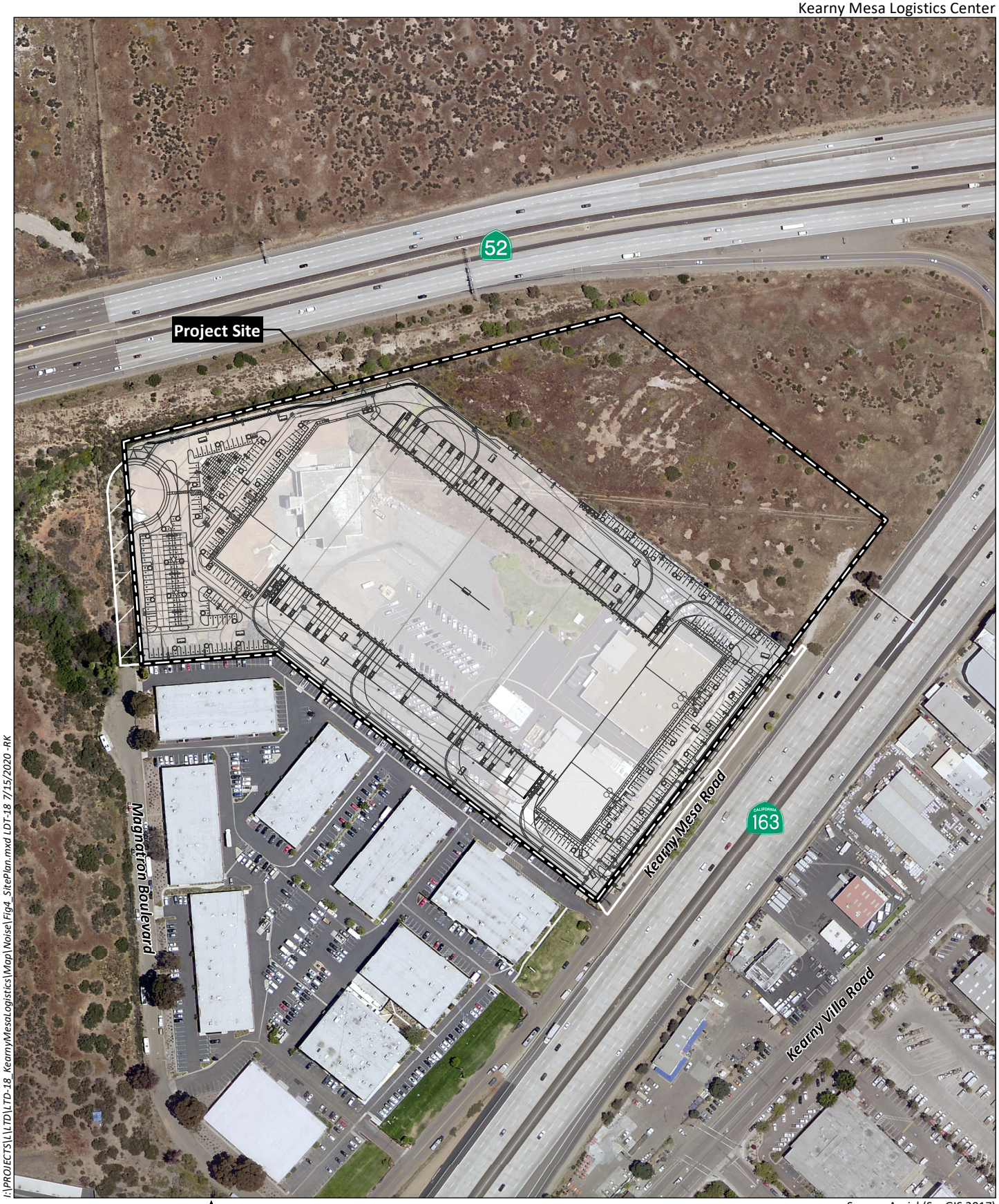
Existing Site

Figure 3



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Source: Aerial (SanGIS 2017)

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Site Plan

Figure 4

project vicinity are the Ramada Hotel, Hampton Inn and Residence Inn which are located approximately 0.3 to 0.4 mile southwest of the project site along Kearny Mesa Road.

Land uses in which groundborne vibration could potentially interfere with operations or equipment, such as research, hospitals, and university research operations (Caltrans 2013a) are considered "vibration-sensitive." The degree of sensitivity depends on the specific equipment that would be affected by the groundborne vibration. In addition, excessive levels of groundborne vibration of either a regular or an intermittent nature can result in annoyance to residential uses, schools or transient lodging. Land uses in the project area that are subject to annoyance from vibration include the hotels to the southwest, described above.

2.4 REGULATORY FRAMEWORK

Applicable noise standards for the project are codified in the following City regulations:

2.4.1 City of San Diego Municipal Code, Chapter 5, Article 9.5, Division 4, §59.5.0404 Construction Noise

(a) It shall be unlawful for any person, between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on legal holidays as specified in Section 21.04 of the San Diego Municipal Code, with exception of Columbus Day and Washington's Birthday, or on Sundays, to erect, construct, demolish, excavate for, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator. In granting such permit, the Administrator shall consider whether the construction noise in the vicinity of the proposed work site would be less objectionable at night than during the daytime because of different population densities or different neighboring activities; whether obstruction and interference with traffic particularly on streets of major importance, would be less objectionable at night than during the daytime; whether the type of work to be performed emits noises at such a low level as to not cause significant disturbances in the vicinity of the work site; the character and nature of the neighborhood of the proposed work site; whether great economic hardship would occur if the work were spread over a longer time; whether proposed night work is in the general public interest; and he shall prescribe such conditions, working times, types of construction equipment to be used, and permissible noise levels as he deems to be required in the public interest.

(b) Except as provided in subsection (c) hereof, it shall be unlawful for any person, including the City of San Diego, to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 dBA during the 12-hour period from 7:00 a.m. to 7:00 p.m.

(c) The provisions of subsection (b) of this section shall not apply to construction equipment used in connection with emergency work, provided the Administrator is notified within 48 hours after commencement of work.

2.4.2 City of San Diego Municipal Code, Chapter 5, Article 9.5, Division 4, §59.5.0401, Sound Level Limits

(a) It shall be unlawful for any person to cause noise by any means to the extent that the one-hour average sound level exceeds the applicable limit given in the following table [Table 1, *Applicable Noise Limits*], at any location in the City on or beyond the boundaries of the property on which the noise is produced. The noise subject to these limits is that part of the total noise at the specified location that is due solely to the action of said person.

Table 1
APPLICABLE NOISE LIMITS

Land Use Zone	Time of Day	One-hour Average Sound Level (dBA)
Single Family Residential	7:00 a.m. to 7:00 p.m.	50
	7:00 p.m. to 10:00 p.m.	45
	10:00 p.m. to 7:00 a.m.	40
Multi-Family Residential (up to a maximum density of 1/2000)	7:00 a.m. to 7:00 p.m.	55
	7:00 p.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	45
All other Residential	7:00 a.m. to 7:00 p.m.	60
	7:00 p.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	50
Commercial	7:00 a.m. to 7:00 p.m.	65
	7:00 p.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	60
Industrial or Agricultural	Anytime	75

Source: City of San Diego Municipal Code, Chapter 5, Article 9.5, Division 4, §59.5.0401, Table K-4 Sound Level Limits

(b) The sound level limit at a location on a boundary between two zoning districts is the arithmetic mean of the respective limits for the two districts. Permissible construction noise level limits shall be governed by Section 59.5.0404 of this article.

2.4.3 City of San Diego General Plan Noise Element

The City General Plan Noise Element (City 2008, amended in 2015) establishes noise compatibility guidelines for uses affected by traffic noise, as shown in Table 2, *City of San Diego Land Use Noise Compatibility Guidelines*.

Table 2
CITY OF SAN DIEGO LAND USE NOISE COMPATIBILITY GUIDELINES

Land Use Category	Exterior Noise Exposure (CNEL)				
	<60	60-65	65-70	70-75	75+
Parks and Recreational					
Parks, Active and Passive Recreation					
Outdoor Spectator Sports, Golf Courses; Water Recreational Facilities; Indoor Recreation Facilities					
Agricultural					
Crop Raising & Farming; Community Gardens, Aquaculture, Dairies; Horticulture Nurseries & Greenhouses; Animal Raising, Maintain & Keeping; Commercial Stables					
Residential					
Single Dwelling Units; Mobile Homes		45			
Multiple Dwelling Units		45	45		
Institutional					
Hospitals; Nursing Facilities; Intermediate Care Facilities; K-12 Educational Facilities; Libraries; Museums; Child Care Facilities		45			
Other Educational Facilities including Vocational/Trade Schools and Colleges, and Universities)		45	45		
Cemeteries					
Retail Sales					
Building Supplies/Equipment; Groceries; Pets & Pet Supplies; Sundries, Pharmaceutical, & Convenience Sales; Apparel & Accessories			50	50	
Commercial Services					
Building Services; Business Support; Eating & Drinking; Financial Institutions; Maintenance & Repair; Personal Services; Assembly & Entertainment (includes public and religious assembly); Radio & Television Studios; Golf Course Support			50	50	
Visitor Accommodations		45	45	45	
Offices					
Business & Professional; Government; Medical, Dental & Health Practitioner; Regional & Corporate Headquarters			50	50	
Vehicle and Vehicular Equipment Sales and Services Use					
Vehicle Repair & Maintenance; Vehicle Sales & Rentals; Vehicle Equipment & Supplies Sales & Rentals; Vehicle Parking					
Wholesale, Distribution, Storage Use Category					
Equipment & Materials Storage Yards; Moving & Storage Facilities; Warehouse; Wholesale Distribution					
Industrial					
Heavy Manufacturing; Light Manufacturing; Marine Industry; Trucking & Transportation Terminals; Mining & Extractive Industries					
Research & Development				50	

Table 2 (cont.)
CITY OF SAN DIEGO LAND USE NOISE COMPATIBILITY GUIDELINES

	Compatible	Indoor Uses	Standard construction methods should attenuate exterior noise to an acceptable indoor noise level.
		Outdoor Uses	Activities associated with the land use may be carried out.
45, 50	Conditionally Compatible	Indoor Uses	Building structure must attenuate exterior noise to the indoor noise level indicated by the number (45 or 50) for occupied areas.
		Outdoor Uses	Feasible noise mitigation techniques should be analyzed and incorporated to make the outdoor activities acceptable.
	Incompatible	Indoor Uses	New construction should not be undertaken.
		Outdoor Uses	Severe noise interference makes outdoor activities unacceptable.

Source: City 2008 (as amended in 2015)

[1] Compatible noise levels and land use definitions reflect amendments to the City's General Plan Noise Element approved in 2015.

CNEL = Community Noise Equivalent Level

As shown in Table 2, the project's warehouse space (wholesale, distribution, storage use category) would be compatible if the exterior noise levels are 75 CNEL or less. The project's office space would be compatible is the exterior noise levels are 65 CNEL or less and conditionally compatible if the exterior noise levels are 65 to 75 CNEL. If the exterior noise level is continually compatible, the building structure must attenuate exterior noise to 50 CNEL for occupied areas (e.g., office space).

2.4.4 City of San Diego Land Development Manual – Biology Guidelines

Noise mitigation is required for significant noise impacts to certain avian species during their breeding season depending on the location. If these species are present, then mitigation would be required if construction or operational noise levels exceed 60 dBA, or the existing ambient noise level if already above 60 dBA during the breeding season. For occupied California gnatcatcher habitat within the City's Multi-Habitat Planning Area (MHPA), construction or operational noise levels exceeding 60 dBA, or if the existing ambient noise level already exceeds 60 dBA, construction or operation causes the ambient noise level to increase by 3 or more dBA during the breeding season is considered significant. There are no restrictions for gnatcatcher habitat outside the MHPA anytime of the year.

2.4.5 MCAS Miramar-Related Policies

The project site is near Marine Corps Air Station (MCAS) Miramar. According to Chapter 3.10 of the City General Plan EIR, the City implements adopted Airport Land Use Compatibility Plans (ALUCPs) with the Airport Environs Overlay Zone (AEOZ). The AEOZ boundaries use the 60 CNEL contours consistent with the MCAS Miramar ALUCP. In addition, the City General Plan Environmental Impact Report (EIR) states that "where developments are conditionally allowed in areas above the 60 CNEL, the ALUCPs require avigation easements to ensure that future residential and other noise sensitive development surrounding airports are compatible for noise. Specifically for noise, avigation easements provide the airport operator the right to subject the property to noise associated with normal airport activity."

According to the City California Environmental Quality Act (CEQA) Significance Determination Thresholds (City 2016), if a project is proposed within the AEOZ as defined in Chapter 13, Article 2, Division 3 of the San Diego Municipal Code, the potential exterior noise impacts from aircraft noise would not constitute a significant environmental impact. Chapter 13, Article 2, Division 3 of the San Diego Municipal Code defines an AEOZ as an area within a noise contour zone of the San Diego International Airport; it is

assumed for this analysis that the potential for exterior noise impacts from aircraft noise not constituting a significant environmental impact would also apply to the 60 CNEL noise contour for MCAS Miramar, as this contour is defined as an AEOZ in the City General Plan EIR.

2.5 EXISTING CONDITIONS

The project site is currently developed with three industrial buildings. The three buildings total approximately 108,900 SF of existing industrial space on the project site, along with associated parking. The project site also contains undeveloped land in the northeastern portion of the site (see Figure 3). The project site is designated Industrial and Business Parks in the Kearny Mesa Community Plan and is zoned IL-2-1 (Industrial Light Zone).

2.5.1 Surrounding Land Uses

Surrounding uses include industrial buildings and open space to the west, SR 52 to the north, SR 163 to the south and east, and Kearny Mesa Road to the east of the project site. Two hotels, Wyndham Hotel and Hampton Inn, are located 0.3 miles southwest of the project site. Commercial and industrial uses are located beyond SR 163, southeast of the site. MCAS Miramar is located approximately 2 miles north of the project site. The area immediately north of SR 52 is open space (see Figure 2).

2.5.2 Existing Noise Conditions

2.5.2.1 Existing Noise Sources

Existing on-site noise is dominated by traffic noise due to the project's proximity to SR 52 and SR 163. The nearest airport, MCAS Miramar, is located approximately 2 miles to the north. The site is located within the 60 and 65 CNEL contours as shown on the Compatibility Policy Map: Noise MCAS Miramar ALUCP (San Diego County Airport Land Use Commission 2008).

2.5.2.2 General Site Survey

Six short-term ambient noise measurements (M1 through M6) were conducted during a site visit on June 24, 2020. All measurements were taken at a height of 5 feet above the ground. The measurements were heavily influenced by traffic noise from SR 52 and SR 163. Site M1 is located in the central portion of the site in the existing parking lot and approximately 150 feet south of Building A. Site M2 is in the northwest corner of the site downslope from the SR 52 and approximately 300 feet from the SR 52 centerline. Site M3 is in the northwest corner of the project site, approximately 150 feet north of the existing off-site warehouse building and 200 feet south of M2. Site M4 is located in the northeastern corner of the existing parking lot approximately 100 feet east of Building A. Site M5 is located at the southeastern edge of the project site along Kearny Mesa Road, approximately 100 feet from the SR 163 centerline and 100 feet southeast of Building B. Site M6 was measured 0.3 mile southwest of the project site along Kearny Mesa Road to identify the general ambient noise levels associated with SR 163 traffic near the closest NSLUs, the Ramada Hotel, Hampton Inn and Residence Inn (see Figure 5, *Measurement and Receptor Locations*).

The measured noise levels and related weather conditions for the short-term measurements are shown in Table 3, *Short-term Noise Measurement Results.*[1] See Appendix A, *Noise Measurement Sheets*, to this report for survey notes from the short-term measurements.

Table 3
SHORT-TERM NOISE MEASUREMENT RESULTS

Measurement	Location	Conditions	Time	dBA L_{EQ}	Notes
M1	Central portion of project site approximately 150 feet south of Building A.	68°F, 7 mph wind, 74 percent humidity, mostly cloudy	3:18 p.m. to 3:28 p.m.	57.4	Measured at 5 feet above ground level. Distant freeway noise and ambient nature sounds.
M2	Northwest corner of the site downslope from the SR 52 and approximately 300 feet from the SR 52 centerline.	68°F, 7 mph wind, 74 percent humidity, mostly cloudy	3:29 p.m. to 3:39 p.m.	56.1	Measured at 5 feet above ground level for ten minutes. Located near SR 52 within the vegetation. No direct line-of-sight to SR 52 due to the slope.
M3	Northwest corner of the project site approximately 150 feet north of the existing off-site warehouse building and 200 feet south of M2.	68°F, 7 mph wind, 74 percent humidity, mostly cloudy	3:47 p.m. to 3:57 p.m.	57.8	Measured at 5 feet above ground level for ten minutes. Freeway noise from SR 52, ambient nature sounds, and noise from the off-site warehouse.
M4	Northeastern corner of the existing parking lot approximately 100 feet east of Building A.	68°F, 7 mph wind, 74 percent humidity, mostly cloudy	4:00 p.m. to 4:10 p.m.	56.1	Measured at 15 feet above ground level for ten minutes. Freeway noise from SR 52 and ambient nature sounds.
M5	Southeastern edge of the project site along Kearny Mesa Road, approximately 100 feet from the SR 163 centerline and 100 feet southeast of Building B.	68°F, 7 mph wind, 74 percent humidity, mostly cloudy	4:20 p.m. to 4:35 p.m.	74.5	Measured at 5 feet above ground level for fifteen minutes. Direct line-of-sight to SR 163 with several vehicles and trucks passing.
M6	0.3 miles southwest of the project site along Kearny Mesa Road.	68°F, 7 mph wind, 74 percent humidity, mostly cloudy	4:42 p.m. to 4:52 p.m.	62.5	Measured at 5 feet above ground level for ten minutes. Noise levels from SR 163 and Kearny Mesa Road traffic.

dBA = A-weighted decibel; L_{EQ} = time-averaged noise level

[1] These measurements were taken during the COVID-19 pandemic, which resulted in the mandatory closures of non-essential businesses throughout the region. Because of this, vehicular traffic during the measurement was likely lower than normal levels, and noise levels are therefore likely lower than what would be expected.

Source: Aerial (SanGIS 2017)

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Measurement and Receptor Locations

Figure 5

3.0 METHODOLOGY, ASSUMPTIONS, AND THRESHOLDS

3.1 EQUIPMENT AND METHODOLOGY

3.1.1 Ambient Noise Survey

The following equipment was used to measure existing noise levels at the project site:

- Larson Davis 831 Sound Level Meter
- Larson Davis Model CAL250 Calibrator
- Windscreen and tripod for the sound level meter
- Digital camera

The sound-level meters were field-calibrated immediately prior to the noise measurement to ensure accuracy. All measurements were made with meters that conform to the American National Standards Institute (ANSI) specifications for sound level meters (ANSI SI.4-1983 R2006). All instruments were maintained with National Institute of Standards and Technology traceable calibration per the manufacturers' standards.

3.1.2 Noise Modeling Software

Project construction noise was analyzed using the Roadway Construction Noise Model Version 1.1 (RCNM; USDOT 2008), which utilizes estimates of sound levels from standard construction equipment.

Changes in exterior noise levels from project-related traffic was modeled using the Traffic Noise Model (TNM) Version 2.5. The TNM was released in February 2004 by the U.S. Department of Transportation (USDOT) and calculates the daytime average hourly L_{EQ} at selected receiver location from three-dimensional model inputs of roads and traffic data (USDOT 2004). The one-hour L_{EQ} noise level is calculated utilizing peak-hour traffic; . The one-hour L_{EQ} noise level is calculated utilizing peak-hour traffic. Peak hour L_{EQ} can be converted to CNEL using the following equation, where $L_{EQ}(h)pk$ is the peak hour L_{EQ}, P is the peak hour volume percentage of the average daily trips (ADT), d and e are divisions of the daytime fraction of ADT to account for daytime and evening hours, and N is the nighttime fraction of ADT:

$$CNEL = L_{EQ}(h)pk + 10\log10\ 4.17/P + 10\log10(d + 4.77e + 10N)$$

The model-calculated one-hour L_{EQ} noise output is therefore approximately equal to the CNEL (Caltrans 2013a).

Noise from the project's heating, ventilation, and air conditioning (HVAC) systems was estimated using the Trane Acoustic Program (TAP) Version 4.1.4 which calculates the resulting sound from an HVAC system accounting for the distance and height between the sound source and receiver, and any intervening noise barriers.

3.2 ASSUMPTIONS

3.2.1 Construction

The existing development includes three buildings that are proposed to be removed as part of the project. Construction activities would include demolition, clearing and grubbing, grading/excavation, building construction, and paving. Construction activities would likely use a variety of construction equipment, including dozers, loaders, water trucks, graders, vibratory rollers, scrapers, and pavers. The most intensive construction noise would be during mass excavation activities, which would involve the simultaneous use of multiple scrapers. According to the project's grading plan, grading is anticipated to require 23,700 cubic yards (CY)of cut and 16,700 CY of fill, for a net export of 7,000 CY, or 9,100 tons, to be exported offsite (Latitude 33 Planning & Engineering 2020).

3.2.2 Operation

The proposed operational noise sources include heating, ventilation, and air conditioning (HVAC) systems, on-site truck/loading dock noise including back-up alarms, and noise associated with the project's vehicular traffic.

3.2.2.1 Heating, Ventilation, and Air Conditioning Units

Specific planning for future HVAC systems was not available at the time of this analysis. Standard HVAC planning assumes approximately one ton of HVAC for every 350 SF of habitable space (American Society of Heating, Refrigeration, and Air Conditioning Engineers [ASHRAE] 2012). Each of the three mezzanine office spaces (approximately 10,500 SF each) was assumed to use three 10-ton rooftop mounted packaged HVAC system and the warehouse spaces were assumed to be unconditioned. This analysis assumes a Carrier Centurion Model 50 PG03-12 with a S_{WL} rating of 80 dBA. The system's rated outdoor sound in octave format is shown in Table 4, *HVAC System Noise Data.* The manufacturers data sheet is included as Appendix B, *HVAC System Data Sheet*, to this report.

Table 4
HVAC SYSTEM NOISE DATA

Octave Band Center Frequency (Hz)	63Hz	125Hz	250Hz	500Hz	1KHz	2KHz	4KHz	8KHz	dBA L_{EQ}*
Measured Sound Pressure	90.4	83.1	80.9	77.8	75.2	70.0	66.1	57.6	80.0

Source: Carrier, see Appendix B.
[1] Sound Power Levels (S_{WL})
Hz = Hertz; kHz = kilohertz; dBA = A-weighted decibel; L_{EQ} = time-averaged noise level

3.2.2.2 Loading Dock Operations

The loudest noise source from on-site truck/loading dock operations would be backup alarms. Although there are no industry or regulatory standards for noise levels for backup alarms, typical alarms produce a single tone (1,000 Hz) ranging from 80 dBA to 107 dBA, measured at 4 feet.

3.2.2.3 Traffic Noise

Traffic noise modeling was based on data from the project Local Mobility Analysis ([LMA]; Linscott, Law & Greenspan, Engineers [LLG] 2020) and Caltrans traffic count data for SR 52 and SR 163 (Caltrans 2017). Traffic data from the LMA includes traffic estimates for surrounding street segments for the Existing and Near-Term Cumulative (Year 2021, including cumulative projects in the area) with and without the project. Table 5, *Project Traffic Volumes*, displays the afternoon peak hour traffic volumes on the modeled roadways. Anticipated future traffic noise levels are based on the forecast cumulative project traffic volumes. Traffic was modeled using the posted speed limits: 35 miles per hour (mph) for Kearny Mesa Road and 40 mph for Clairemont Mesa Boulevard. Speeds assumed for SR 163 and SR 52 represented average peak hour speeds calculated from Caltrans California Freeway Performance Measurement System (PeMS) data from PM peak-hour data collected in October 2019: 58.0 mph for cars and light trucks on SR 163 and 62.8 mph for cars and light trucks on SR 52, trucks were assumed to be traveling 10 mph slower than cars (Caltrans 2020).

Table 5
PROJECT TRAFFIC VOLUMES

Roadway Segment	Peak Hour Volume			
	Existing	Existing + Project	Cumulative (2021)	Cumulative (2021) + Project
Kearny Mesa Road				
Magnatron Blvd to Clairemont Mesa Blvd.	435	637	741	943
Clairemont Mesa Boulevard				
Mercury St to Kearny Mesa Rd	3,223	3,274	3,341	3,392
SR 163 Interchange	3,823	3,823	4,013	4,117
Kearny Villa Rd to Overland Ave.	4,122	4,138	4,360	4,376
SR 163				
Clairemont Mesa Blvd to SR 52	13,100	13,195	12,576	13,195
Southbound Off-Ramp at Clairemont Blvd	1,497	1,540	1,599	1,642
Southbound On-Ramp at Clairemont Blvd	393	393	396	396
SR 52				
Convoy St to SR 163	9,900	9,928	9,504	9,928

Source: LLG 2020; Caltrans 2017
Blvd = Boulevard; St = Street; Rd = Road

The project traffic modeled fleet mix was adjusted based on a study from the Institute of Transportation Engineers (ITE), *High-cube Warehouse Vehicle Trip Generation Analysis*. For a warehouse used primarily for short-term storage, transload, or cold storage, the fleet mix would comprise 67.8 percent cars and 2-axle light trucks (e.g., pickups), 13.2 percent 2-axle medium trucks and 19 percent 3-axle (or more) heavy trucks (ITE 2016). A standard vehicle mix for California urban roads of 96 percent cars and light trucks, 3 percent medium trucks, and 1 percent heavy trucks was used for modeling existing and future noise conditions in the vicinity of the project for all road segments.

Model receivers were placed in the at the proposed project office space locations facing SR 163, at the corner of the proposed project warehouse closest to SR 52, and at the three hotel building locations closest to Kearny Mesa Road (see Figure 5).

3.3 GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE AND CONDITIONS OF APPROVAL

The following thresholds are based on the City Significance Determination Thresholds and Noise Ordinance, as applicable to the project.

A potentially significant noise impact would occur if the project would:

1. Result in temporary construction noise that exceeds 75 dBA L_{EQ} (12 hour) at the property line of a NSLU from 7:00 a.m. to 7:00 p.m. (as identified in Section 59.0404 of the City's Municipal Code) or if non-emergency construction occurs during the 12-hour period from 7:00 p.m. to 7:00 a.m.

2. Result in or create a significant permanent increase in the existing noise levels. For the purposes of this analysis, a significant increase would be greater than a perceptible change (3 dBA) over existing conditions or the generation of noise levels at a common property line that exceed the limits shown in Table 1.

The following condition of approval would be required for all proposed new uses:

3. Projects shall not expose new development to noise levels at exterior use areas or interior areas in excess of the noise compatibility guidelines established in the City General Plan Noise Element. The compatible noise levels limit for the project's warehouse land use is 75 CNEL (for wholesale, distribution, and storage uses). The conditionally compatible noise levels for the project office space, nearby hotels and commercial-retail uses are 75 CNEL. For outdoor uses at a conditionally compatible land use, feasible noise mitigation techniques should be analyzed and incorporated to make the outdoor activities acceptable. For indoor uses at a conditionally compatible land use, exterior noise must be attenuated to 45 CNEL for hotels and 50 CNEL for offices and commercial-retail.

A significant vibration impact would occur of the project would:

4. Subject vibration-sensitive land uses to construction-related groundborne vibration that exceeds the severe vibration annoyance potential criteria for human receptors, as specified by Caltrans (2013), of 0.4 inches per second peak particle velocity (PPV), and 0.5 inches per second PPV for damage to structures for continuous/frequent intermittent construction sources (such as impact pile drivers, vibratory pile drivers, and vibratory compaction equipment).

4.0 IMPACTS

4.1 ISSUE 1: TEMPORARY INCREASE IN AMBIENT NOISE LEVELS

4.1.1 Construction Equipment

The potential equipment noise from project construction activity was analyzed using RCNM, as described in Section 3.1. The most substantial noise increases from construction activities that may affect off-site uses would occur during demolition. Demolition of the existing buildings would occur

within 1,500 feet (0.3 miles) of the nearest NSLU property line (the Ramada Hotel) to the southwest. The loudest construction activity during demolition would be from the potential use of jackhammer and/or concrete saw to demolish part of the concrete buildings. A jackhammer and concrete saw would be expected to be used intermittently for approximately 20 percent of the workday and would not be in operation simultaneously. At a distance of 1,500 feet, a jackhammer would generate a noise level of 52.4 dBA L_{EQ} and a concrete saw would generate a noise level of 53 dBA L_{EQ} (12 hour). During demolition, a dozer in conjunction with a loader and a dump truck, would be used to demolish or grade material and to load debris for removal. A dozer, loader, and dump truck could be used concurrently approximately 40 percent of the workday and would produce a combined 50.8 dBA L_{EQ} (12 hour) at 1,500 feet. Therefore, project construction equipment used during demolition would not exceed the City Noise Ordinance construction threshold of 75 dBA L_{EQ} (12 hour) at the property line of a hotel or commercially-zoned property. See Appendix C, *RCNM Output*, to this report for model outputs.

Based on the project's architectural plans, grading is anticipated to require 23,700 CY of cut and 16,700 CY of fill, for a net export of 7,000 CY to be exported offsite (Latitude 33 Planning & Engineering 2020). Mass grading activities would occur approximately 1,500 feet (0.3 mile) from the nearest off-site NSLU (the Ramada Hotel). For modeling of mass excavation, it was assumed that three scrapers would be used simultaneously. The scrapers would be in operation for 40 percent of a typical construction hour. It was conservatively assumed that these pieces of equipment would be in operation simultaneously at the same location. At 1,500 feet, the three scrapers would generate a noise level of 54 dBA L_{EQ} (12 hour), see Appendix C for model outputs. Therefore, the use of construction equipment during over-excavation and mass excavation activities would not exceed the City Noise Ordinance construction threshold of 75 dBA L_{EQ} (12 hour).

As other project construction activities would be expected to use less intensive equipment, project construction noise would comply with the City Noise Ordinance and temporary increases in ambient noise levels from construction activity would be less than significant.

4.1.2 Construction Traffic

Construction would generate vehicular traffic in the form of worker vehicles and material import and export trucks. Vehicles associated with project construction would utilize Kearny Mesa Road to access the site. According to the traffic count data in the LMA, Kearny Mesa Road has an existing volume of 4,796 ADT (LLG 2020). A general rule of thumb is that a doubling of ADT would cause a doubling in noise (a 3 dBA increase), which would be considered a significant increase. Although the specific number of construction-related trips is unknown at this time, it is assumed that project construction would not generate vehicle trips that would result in a doubling of traffic volumes. Therefore, the increase in traffic from the project would have a minor impact on noise and temporary increases in ambient noise levels from construction traffic would be less than significant.

4.1.3 Sensitive Species

The site is within the boundary of the City's Multiple Species Conservation Program (MSCP) Subarea Plan and the eastern portion of the site occurs within the boundaries of the City's Vernal Pool Habitat Conservation Plan (VPHCP; City 2020), which is included as part of the City's MHPA.

According to the project's Biological Technical Report (HELIX 2020), three coastal California gnatcatchers, a federally threatened species and covered species under the MSCP, were observed

foraging off site (i.e., outside of the project site) along the south-facing hillside just north of the site. Potentially suitable Diegan coastal sage scrub habitat for the species occurs within the eastern portion of the site and to the west of the site north of Magnatron Boulevard. Project direct impacts on potential gnatcatcher habitat are restricted to areas outside of the MHPA and are covered activities under the MSCP. However, if it is determined by project biologists during pre-construction surveys that the adjacent habitat is occupied by nesting coastal California gnatcatchers or other nesting birds during the breeding season, the project will require noise control measures to attenuate construction noise levels. The impact would be potentially significant.

4.1.4 Mitigation Measures

The Biological Technical Report contains the following mitigation measure to reduce the impact of construction noise on sensitive species (HELIX 2020):

BIO-1 Coastal California Gnatcatcher Avoidance: No clearing, grubbing, or other construction activities shall occur within 500 feet of the MHPA between March 1 and August 15 (California gnatcatcher breeding season) until the following requirements have been met to the satisfaction of the City Manager:

- A qualified biologist (possessing a valid Endangered Species Act Section 10(a)(1)(A) Recovery Permit) shall survey those habitat areas within the MHPA that would be subject to construction noise levels exceeding 60 decibels [dB(A)] hourly average, or exceeding ambient noise levels if greater than 60 dBA, for the presence of the coastal California gnatcatcher. Surveys for coastal California gnatcatcher shall be conducted pursuant to the protocol survey guidelines established by the U.S. Fish and Wildlife Service within the breeding season prior to the commencement of any construction. If gnatcatcher are present, then Condition I and either II or III must be met:

    - Condition I: Between March 1 and August 15, no clearing or grubbing of occupied gnatcatcher habitat shall be permitted within the MHPA. Areas restricted from such activities shall be staked or fenced under the supervision of a qualified biologist; AND

    - Condition II: Between March 1 and August 15, no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dB hourly average or ambient, whichever is higher, at the edge of occupied gnatcatcher habitat within the MHPA. An analysis showing that noise generated by construction activities would not exceed 60 dB hourly average at the edge of occupied habitat shall be completed by a qualified acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the City Manager at least two weeks prior to the commencement of construction activities. Prior to commencement of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under supervision of a qualified biologist; OR

    - Condition III: At least two weeks prior to commencement of construction activities, under direction of a qualified acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities will not exceed 60 dB hourly average or ambient (whichever is higher) at the

edge of habitat (within the MHPA) occupied by the coastal California gnatcatcher. Concurrent with commencement of construction activities and construction of necessary noise attenuation facilities, noise monitoring shall be conducted at the edge of occupied habitat area within the MHPA to ensure that noise levels do not exceed 60 dB or ambient (whichever is higher) hourly average. If the noise attenuation techniques implemented are determined to be inadequate by the qualified acoustician or biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season.

- Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average.[2] If not, other measures shall be implemented in consultation with the biologist and the City Manager, as necessary, to reduce noise levels to below 60 dB(A) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

- If coastal California gnatcatchers are not detected within the MHPA during the protocol surveys, the qualified biologist shall submit substantial evidence to the City Manager and applicable Resource Agencies, such as the CDFW and USFWS, that demonstrates whether or not mitigation measures, such as noise barriers, are necessary between March 1 and August 15, as follows:

  - If evidence indicates high potential for coastal California gnatcatcher to be present based on historical records or site conditions, the Condition A.III shall be adhered to, as specified above.

  - If evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

4.1.5 Significance of Impacts After Mitigation

With implementation of mitigation measure BIO-1, impacts related to temporary construction noise would be less than significant.

[2] Scenarios that may warrant more frequent monitoring encompass a variety factors such as what type of activity is occurring (vegetation clearing or grading with heavy/loud equipment), frequency and duration of activity, and proximity to occupied habitat and/or nesting gnatcatchers.

4.2 ISSUE 2: PERMANENT INCREASE IN AMBIENT NOISE LEVELS

4.2.1 On-Site Operational Noise

4.2.1.1 HVAC Noise

Potential noise from HVAC systems associated with the project's proposed office space was modeled using the TAP program, as described in Sections 3.1 and 3.3. Accounting for the building height, parapet walls around the roof of the building, and the distance to the property line to the southwest, the noise level measured at the property noise from the combined operation of three 10-ton HVAC units located on the roof on the closest mezzanine office space would be 29 dBA L_{EQ}. This would not exceed the City Municipal Code standard of 75 dBA L_{EQ} for noise measured at an industrial zoned property line. Noise impacts from the project's HVAC systems would be less than significant.

4.2.1.2 Loading Dock Noise

The project would include 64 truck loading docks. The primary noise associated with loading dock activity is backup alarms (also called a "reverse signal alarm"). The Occupational Safety and Health Administration (OSHA) requires certain off-road equipment with obstructed views to the rear to be equipped with a reverse signal alarm distinguishable from the surrounding noise level. There are no regulations requiring backup alarms for road-certified vehicles. However, many truck owners install backup alarms for increased safety. Backup alarms are commonly installed on delivery trucks (typically single drive--axle medium duty trucks or vans) which make multiple daily stops in public areas. Although there are no industry or regulatory standards for noise levels for backup alarms, typical alarms produce a single tone (1,000 Hz) ranging from 80 dBA to 107 dBA, measured at 4 feet (McMaster-Carr 2020). This analysis assumes alarms producing 97 dBA measure at 4 feet.

The loading docks on the southwest side of the proposed building would be approximately 125 feet from the property line. A single-drive-axle delivery truck (equipped with a backup alarm) which starts reversing 50 feet from the property line would result in approximately 75 dBA L_{MAX}, measured at the property line.[3] According to the LMA, there would be 202 peak-hour trips entering the project site (LLG 2020). The ITE warehouse truck trip study estimates that 32.2 percent of the trips would be trucks (ITE 2016). Assuming half of the trucks would be equipped with backup alarms and half of the trucks would use the southwest side loading docks, the estimated peak hour back alarm events near the project southwest property line would be 16. Assuming each event averages 30 seconds, the one-hour L_{EQ} at the property line would be 66.2 dBA. This would not exceed City Municipal Code standard of 75 dBA L_{EQ} for noise measured at an industrial zoned property line. Noise impacts from the project's loading dock would be less than significant.

4.2.2 Project-Generated Transportation Noise

4.2.2.1 Off-Site Exterior Noise

The TNM software was used to calculate the traffic noise levels at selected receptor locations for the following scenarios: Existing, Existing plus Project, Near-Term Cumulative (Year 2021), and Near-Term Cumulative plus Project, as described in Section 3.2.2. The project-generated traffic noise roadway

[3] Outdoor sound attenuation from distance can be calculated by $L = L_{REF} - 20 \text{ LOG } (r / r_{REF})$ where L_{REF} is a reference sound level, rREF is the distance the reference level was measured from, and r is the distance from the source to the receiver.

modeling represents a conservative analysis that does not take into account topography or attenuation provided by existing structures or surface (i.e., vegetation, loose soil). The results of this analysis for the CNEL at the nearest NSLU to the project site are shown in Table 6, *Project-Generated Traffic Noise Levels*. The full TNM model input and output is provided in Appendix D, *TNM Data*, to this report.

Table 6
PROJECT-GENERATED TRAFFIC NOISE LEVELS

Receptor ID	Receptor Location	Distance to Roadway Centerline (feet)	Land Use	CNEL at Modeled Receptor Locations Existing	CNEL at Modeled Receptor Locations Existing + Project	CNEL at Modeled Receptor Locations Change in CNEL
RO-1	Ramada Hotel, 5550 Kearny Mesa Road	125	Visitor Accommodation	66.7	67.2	0.5
RO-2	Hampton Inn, 5434 Kearny Mesa Road	155	Visitor Accommodation	64.4	65.2	0.8
RO-3	Residence Inn, 5400 Kearny Mesa Road	160	Visitor Accommodation	62.8	63.3	0.5

Source: TNM
NSLU = Noise Sensitive Land Use; SC = School; MF = Multi-Family Residential

A direct significant impact would occur if off-site exterior useable spaces are exposed to noise levels that exceed the "Conditionally Compatible" guidelines discussed in Section 2.3.3, if those uses were not exposed to noise levels above the guidelines before the project. For the nearest off-site NSLUs to the studied roadways, visitor accommodations (i.e., hotels), the limit would be 75 CNEL. If noise levels already exceed the applicable significance thresholds, a significant impact would if the project's contribution would be 3 CNEL or greater. As shown in Table 6, noise levels do not currently exceed the applicable limits without the project along the analyzed roadway segments. Furthermore, the project's maximum contribution to traffic noise would be 0.8 CNEL and would not exceed 3 CNEL along any roadway segment, nor would it cause an increase in traffic noise that would expose off-site exterior use areas to levels in excess of 75 CNEL. Therefore, direct exterior off-site transportation noise impacts would be less than significant.

4.2.2.2 Interior

For off-site transient lodging land uses the interior noise threshold is 45 CNEL and for commercial-retail land uses the interior noise threshold is 50 CNEL. As typical architectural materials are expected to attenuate noise levels by 15 dBA, if the project increases traffic noise levels above 60 CNEL at off-site hotel building facades, a potentially significant interior impact would occur. If noise levels under the already exceed 60 CNEL, a potentially significant impact would occur for the if the project's contribution would be 3 dBA or greater.

As shown in Table 6, existing noise levels without the project already exceed 60 CNEL for all receiver locations . In all scenarios with the project, the maximum increase in noise levels from project-added traffic would be 0.8 CNEL and would not exceed 3 CNEL at any receiver location. Therefore, project-generated transportation noise would not cause significant direct impacts related to interior noise.

4.2.2.3 Cumulative

Exterior

The potential for a cumulative noise impact can occur when traffic from multiple projects combine to increase noise levels above thresholds. A significant cumulative exterior impact would occur if:

- Cumulative projects in combination with the proposed project result in the exposure of an NSLU that is exposed to less than 75 CNEL exterior noise levels in the Existing scenario to an exterior noise level of 75 CNEL or greater in the Cumulative plus Project scenario; or
- If the NSLU is already exposed to noise levels above the applicable threshold under the Existing scenario, cumulative projects in combination with the proposed project cause an increase of at least 3 CNEL from the Existing scenario to the Cumulative plus Project scenario.

As shown in Table 7, *Cumulative Project-Generated Traffic Noise Levels*, cumulative noise levels (which includes all cumulative projects identified in the LMA) would exceed the applicable thresholds for all receiver locations. The maximum increase in traffic noise levels between the Existing and Cumulative plus Project scenarios would be 1.1 CNEL, less than the cumulatively considerable 3 CNEL increase threshold. Therefore, traffic-related exterior noise impacts from the project would be less than cumulatively considerable.

Table 7
CUMULATIVE PROJECT-GENERATED TRAFFIC NOISE LEVELS

Receptor ID	Receptor Location	Distance to Roadway Centerline (feet)	Land Use	CNEL at Modeled Receptor Locations Existing	CNEL at Modeled Receptor Locations Cumulative + Project	CNEL at Modeled Receptor Locations Change in CNEL
RO-1	Ramada Hotel, 5550 Kearny Mesa Road	125	Visitor Accommodation	66.7	67.5	0.8
RO-2	Hampton Inn, 5434 Kearny Mesa Road	155	Visitor Accommodation	64.4	65.5	1.1
RO-3	Residence Inn, 5400 Kearny Mesa Road	160	Visitor Accommodation	62.8	63.5	0.7

Source: TNM
NSLU = Noise Sensitive Land Use; SC = School; MF = Multi-Family Residential

Interior

A significant cumulative interior impact would occur if cumulative projects in combination with the proposed project meet the following conditions:

1. If NSLUs are exposed to interior noise levels below 45 CNEL, result in interior noise levels at the NSLUs in excess of 45 CNEL; or
2. If the NSLUs are already exposed to interior noise levels in excess of 45 CNEL, cause an increase of at least 3 CNEL from the Existing scenario to the Cumulative plus Project scenario.

As typical architectural materials are expected to attenuate noise levels by 15 CNEL, interior noise levels would be 45 CNEL or greater if the noise levels at the building façades exceed 60 CNEL. All analyzed receiver locations exceed 60 CNEL and therefore the NSLUs may currently be exposed to interior noise levels above 45 CNEL. However, as shown in Table 7, The project in combination with cumulative projects would not cause an increase of 3 CNEL from the Existing scenario to the Cumulative plus Project scenario. Therefore, traffic-related interior noise impacts from the project would be less than cumulatively considerable.

4.2.3 Mitigation Measures

Because impacts related to Issue 3 would be less than significant, no mitigation is required.

4.2.4 Significance of Impacts After Mitigation

Impacts would be less than significant without mitigation.

4.3 ISSUE 3: EXCESSIVE GROUNDBORNE VIBRATION

4.3.1 Impact Analysis

4.3.1.1 Construction Vibration

Construction activities known to generate excessive groundborne vibration, such as pile driving, would not be conducted by the project. A possible source of vibration during general project construction activities would be a vibratory roller used for gravel or pavement compaction. A vibratory roller could be used up to 100 feet from the closest off-site structure (industrial/commercial building to the southwest). A vibratory roller would create approximately 0.210 inch per second PPV at 25 feet (Caltrans 2013b). A 0.210 inch per second PPV vibration level would equal 0.046 inch per second PPV at a distance of 100 feet.[4] This would be lower than what is considered a "strongly perceptible" level for humans of 0.1 in/sec PPV, and lower than the structural damage threshold of 0.5 inches per second PPV for continuous/frequent intermittent construction sources. Therefore, although a vibratory roller may be perceptible to nearby human receptors, temporary impacts associated with the roller (and other potential equipment) would be less than significant.

4.3.1.2 Operational Vibration

Land uses that may generate substantial operational vibration include heavy industrial or mining operations that would require the use of vibratory equipment. The proposed warehouse land use does not include equipment that would generate substantial vibration. Therefore, operational vibration impacts are less than significant.

4.3.2 Mitigation Measures

Because impacts related to Issue 3 would be less than significant, no mitigation is required.

[4] Equipment PPV = Reference PPV * $(25/D)^n$ (in/sec), where Reference PPV is PPV at 25 feet, D is distance from equipment to the receiver in feet, and n = 1.1 (the value related to the attenuation rate through the ground); formula from Caltrans 2013b.

4.3.3 Significance of Impacts After Mitigation

Impacts would be less than significant without mitigation.

4.4 ISSUE 4: NOISE LEVEL STANDARD COMPLIANCE FOR NEW USES

4.4.1 Transportation Noise

4.4.1.1 Exterior Noise Levels

The project's proposed warehouse and office land use would be compatible if exterior noise levels from traffic do not exceed the City's noise element conditionally compatible exterior standard of 75 CNEL. Within the noise model, the results for RP-2 placed at the office space façade property line facing Kearny Mesa Road and SR 163 predicts a noise level of 73.8 CNEL. As noted in Section 3.1, the peak traffic hour L_{EQ} is approximately equivalent to the CNEL. The proposed site plan does not include outdoor use areas (such as patios or picnic areas) and therefore it is assumed that workers would not be exposed to the exterior noise levels for an extended period of time. Therefore, the project would be compatible with the City's exterior noise standards for wholesale, distribution, storage use, and conditionally compatible with offices land use categories. Conditionally compatible for the exterior noise standard means that the project proponents would have to demonstrate that interior noise levels do not exceed the City standards.

4.4.1.2 Interior Noise Levels

The project's proposed office land use would be compatible if interior noise levels do not exceed the City's noise element interior standard 50 CNEL for commercial service. Traditional architectural materials typically attenuate noise levels by 15 CNEL. Therefore, if the traffic noise level at the exterior of the office space exceeds 65 CNEL, the interior noise levels would exceed the City standard. As discussed above, the exterior of project office areas facing Kearny Mesa Road would exceed 70 CNEL. Therefore, the project would not be compatible with the City's interior noise standard of 50 CNEL for commercial land uses using traditional architectural materials. Noise reduction measure Noise-1 would require an exterior-to-interior noise analysis once specific building plans are available to determine if predicted noise levels are found to exceed 50 CNEL for office spaces, and to identify architectural materials or techniques that could be included to reduce interior noise levels to 50 CNEL in office spaces. Implementation of measure Noise-1 would ensure that interior noise levels are compatible with the City Noise Element.

4.4.1.3 Airport Noise

The closest airport to the project site is MCAS Miramar, located approximately 2 miles to the north. The portion of the site to be developed is located within the 60 to 65 CNEL contour as shown on the Compatibility Policy Map: Noise MCAS Miramar Airport Land Use Compatibility Plan (ALUCP; San Diego County Airport Land Commission 2008). The project would not propose residential or other NSLUs. According to Table MIR-1 of the ALUCP, a warehouse land use and associated office space would be compatible for both outdoor and indoor spaces in the 60 to 65 CNEL contour. Therefore, the project would not result in the exposure of people working or residing in the project area to excessive noise from airports and the impact would be less than significant.

4.4.2 Condition of Approval

The following noise reduction measure would ensure that interior noise levels comply with City standards.

NOI-1 **Exterior-to-Interior Noise Analysis**. Once specific building plan information is available, an exterior-to-interior analysis shall be performed for all mezzanine office spaces. The exterior-to-interior analysis shall demonstrate that interior noise levels do exceed 50 CNEL.

The information in the analysis shall include wall heights and lengths, room volumes, window and door tables typical for a building plan, as well as information on any other openings in the building shell. With this specific building plan information, the analysis shall determine the predicted interior noise levels for the planned office spaces. If predicted noise levels are found to exceed 50 CNEL, the analysis shall identify architectural materials or techniques that could be included to reduce noise levels to 50 CNEL in office spaces. Standard measures such as glazing with appropriate Sound Transmission Class (STC) ratings, as well as walls with appropriate STC ratings, should be considered. Final plans shall demonstrate that interior noise levels do not exceed 50 CNEL for proposed office spaces.

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Appendix A

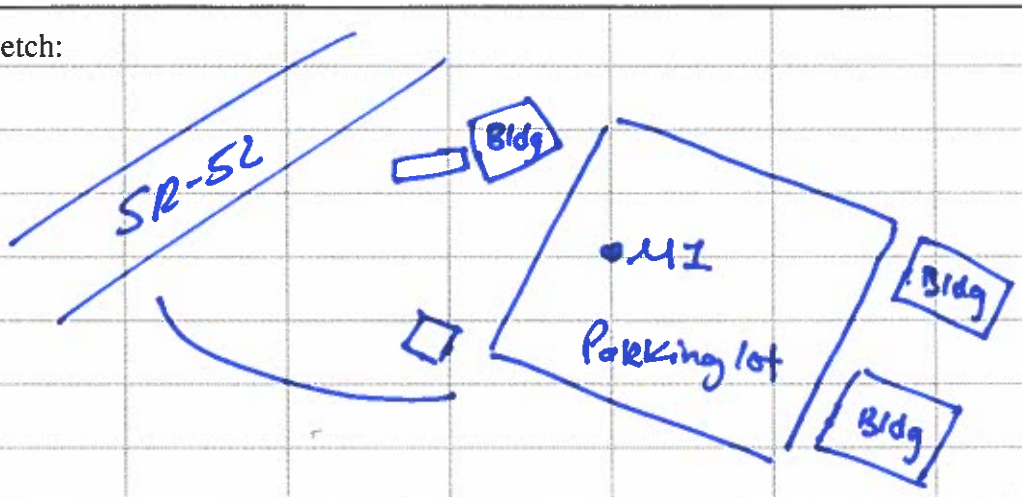
Noise Measurements Sheets

Site Survey

Job # LTD-18	Project Name: Kearny Mesa Bldg		
Date: 6/24/20	Site #: M1	Engineer: Brendan Sullivan	
Address: 5644 Kearny Mesa Rd, San Diego, CA 92111			
Meter: LD 831	Serial #: 001390	Calibrator: CA 250	Serial #: 2621

Notes: Overcast skies, light breeze, distant highway noise, standing in parking lot.

Sketch:



Temp: 68°	Wind Spd: 7 mph	Humidity: 74 %
Start of Measurement: 3:18 PM	End of Measurement: 3:28 PM	57.4 dBA L_{EQ}

Cars (tally per 5 cars)	Medium Trucks (MT)	Heavy Trucks (HT)

Noise Measurement for Information Only

No Through Roadways

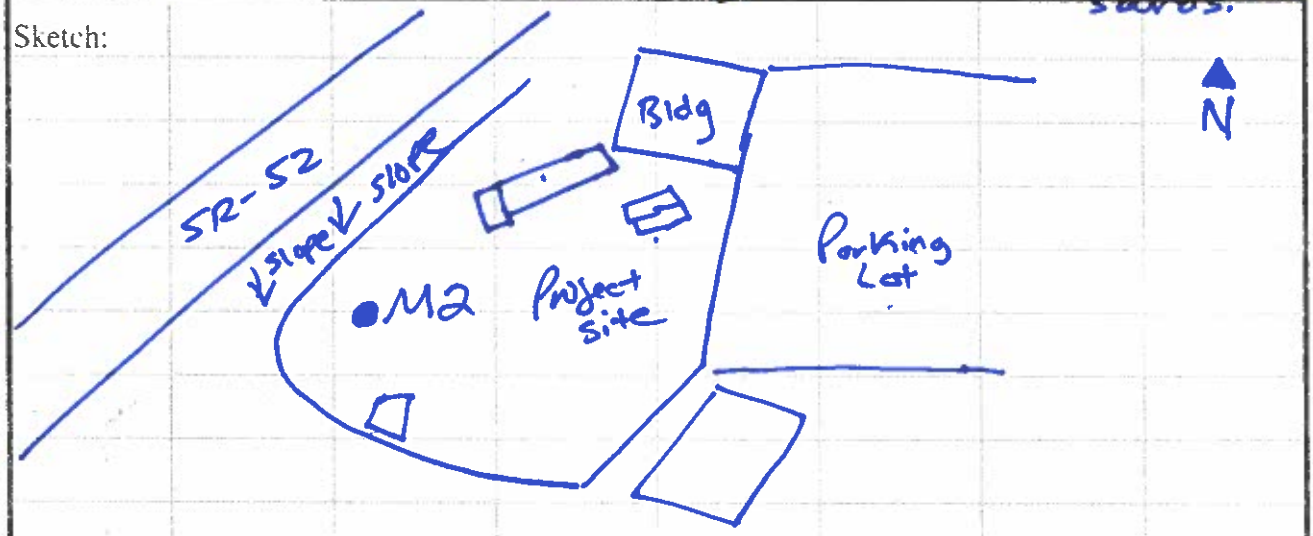
No Calibration Analysis Will Be Provided

Site Survey

Job # LTD-18	Project Name: Kearny Mesa Bldg		
Date: 6/24/20	Site #: M2	Engineer: Brendan Sullivan	
Address: 5644 Kearny Mesa Rd, San Diego, CA 92111			
Meter: LD 821	Serial #: 001390	Calibrator: CA 250	Serial #: 2621

Notes: Highway noise from the 52. Measurement taken as close to highway as possible on the project site. Steep slope attenuates much of the adjacent highway noise. Ambient nature sounds.

Sketch:



Temp: 68	Wind Spd: 7	mph	Humidity: 74	%	
Start of Measurement: 3:29	End of Measurement: 3:39		56.1	dBA L_{EQ}	

Cars (tally per 5 cars)	Medium Trucks (MT)	Heavy Trucks (HT)

Noise Measurement for Information Only

No Through Roadways

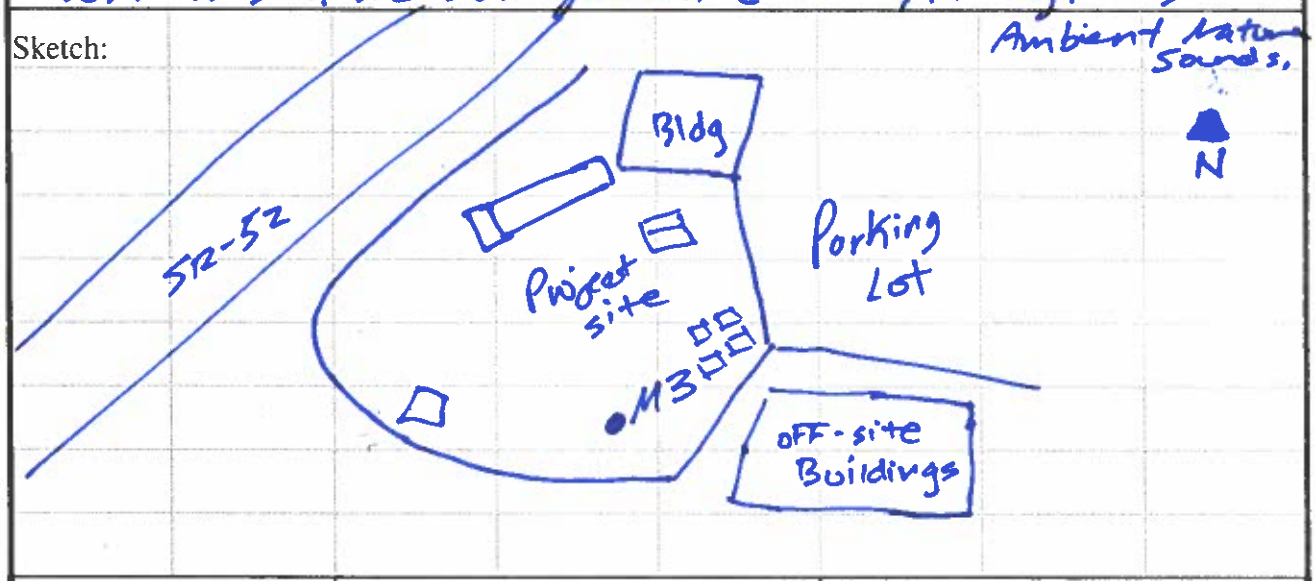
No Calibration Analysis Will Be Provided

Site Survey

Job # LTD-18	Project Name: Kearny Mesa Bldg		
Date: 6/24/20	Site #: M3	Engineer: Brendan Sullivan	
Address: 5644 Kearny Mesa Rd, San Diego, CA 92111			
Meter: LD 831	Serial #: 0001390	Calibrator: CA 250	Serial #: 2624

Notes: Highway noise from the 52. Measurement taken in southern corner of Project site. Noise from nearby businesses in the background (trucks, talking, etc.)

Sketch:



Temp: 68	Wind Spd: 7	mph	Humidity: 74	%	
Start of Measurement: 3:47	End of Measurement: 3:57		57.8	dBA L_{EQ}	

Cars (tally per 5 cars)	Medium Trucks (MT)	Heavy Trucks (HT)

Noise Measurement for Information Only

No Through Roadways

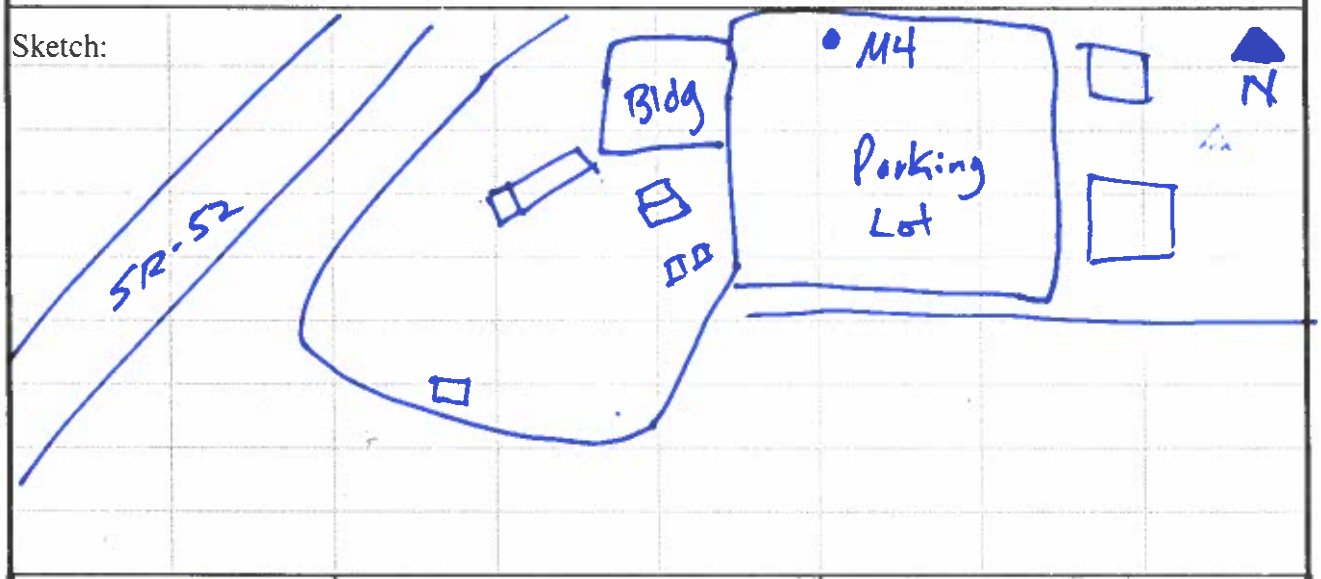
No Calibration Analysis Will Be Provided

Site Survey

Job # LTD48	Project Name: Keary Mesa Bldg		
Date: 6/24/20	Site #: M4	Engineer: Bordan Sullivan	
Address: 5644 Keary Mesa Rd, San Diego, CA 92111			
Meter: LD831	Serial #: 001396	Calibrator: CAL250	Serial #: 2621

Notes: Highway noise from SR-52 and SR-163. Ambient nature sounds. Distant aircraft noise.

Sketch:



Temp: 68	Wind Spd: 7	mph	Humidity: 68	%	
Start of Measurement: 4:00	End of Measurement: 4:10		56.1	dBA L_{EQ}	

Cars (tally per 5 cars)	Medium Trucks (MT)	Heavy Trucks (HT)

Noise Measurement for Information Only

No Through Roadways

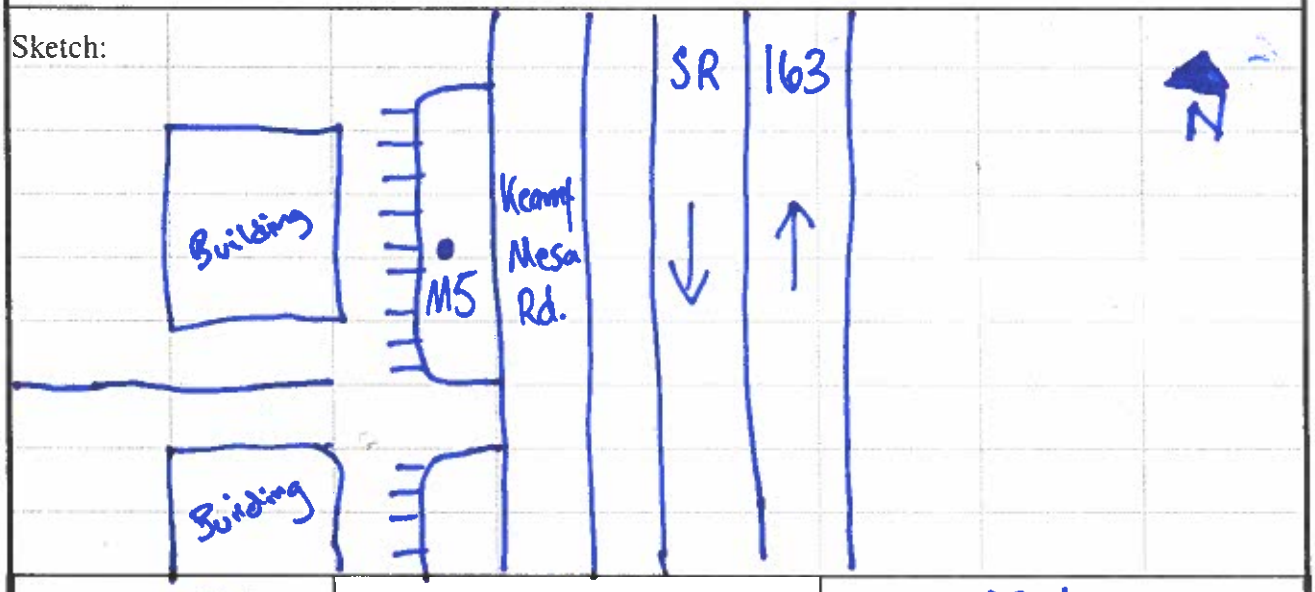
No Calibration Analysis Will Be Provided

Site Survey

Job # LTD-18	Project Name: Kearny Mesa Bldg		
Date: 6/24/20	Site #: M5	Engineer: Brendan Sullivan	
Address: 5644 Kearny Mesa Rd, San Diego, CA 92111			
Meter: LD831	Serial #: 0001390	Calibrator: CA250	Serial #: 2621

Notes: Heavy traffic noise from SR-163.
Mostly Automobiles, a few large trucks.

Sketch:



Temp: 69°	Wind Spd: 7	mph	Humidity: 74	%	
Start of Measurement: 4:20	End of Measurement: 4:35	74.5	dBA L_{EQ}		

Cars (tally per 5 cars)	Medium Trucks (MT)	Heavy Trucks (HT)
𝍸 𝍸 𝍸 𝍸 .... Avg. 90 per minute 1,350 cars total	Avg. 6 per minute 90 total	

Noise Measurement for Information Only

No Through Roadways

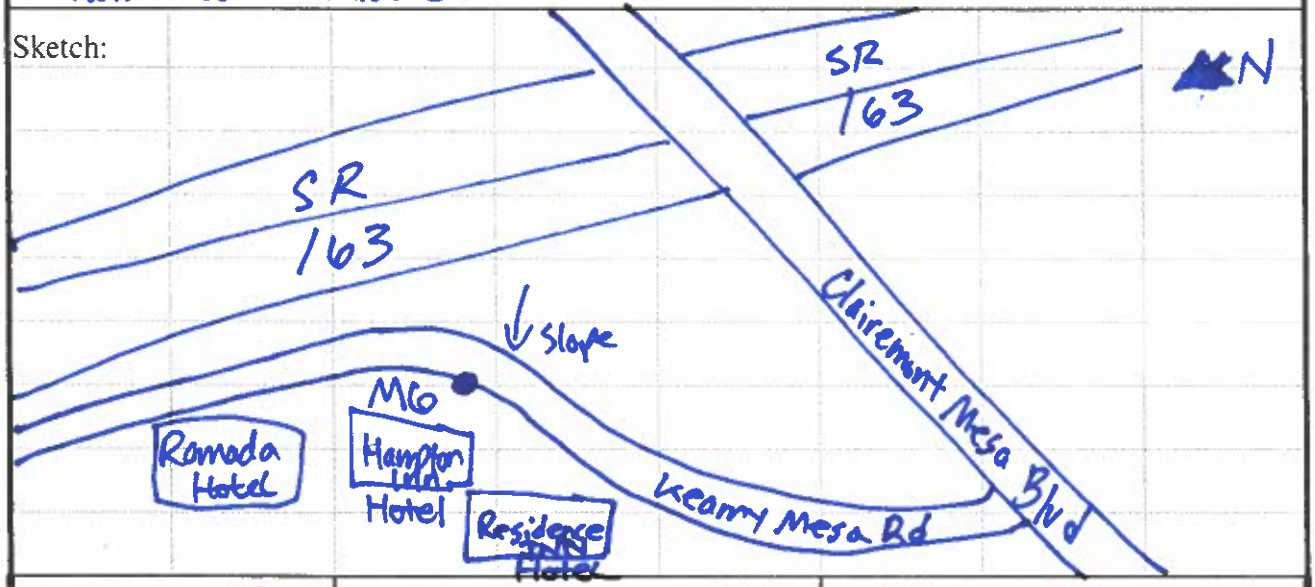
No Calibration Analysis Will Be Provided

Site Survey

Job # LTD18	Project Name: Kearny Mesa Bldg		
Date: 6/24/20	Site #: M6	Engineer: Brendan Sullivan	
Address: 5044 Kearny Mesa Rd, San Diego, CA 92111			
Meter: LD831	Serial #: 001390	Calibrator: CA250	Serial #: 2021

Notes: Located along Kearny Mesa Rd near SR-163. A landscaped area and slope separates the hotels from the nearby roadways. Noise sources include ambient nature sounds and traffic noise.

Sketch:



Temp: 68	Wind Spd: 7	mph	Humidity: 74	%	
Start of Measurement: 4:42	End of Measurement: 4:58		62.3	dBA L_{EQ}	

Cars (tally per 5 cars)	Medium Trucks (MT)	Heavy Trucks (HT)

Noise Measurement for Information Only

No Through Roadways

No Calibration Analysis Will Be Provided

Appendix B

HVAC System Data Sheet

50PG03–28
Ultra High Efficiency Single Package Electric Cooling with Optional Electric Heat Commercial Rooftop Units with PURON® (R–410A) Refrigerant, Optional EnergyX™ (Energy Recovery Ventilator)

Carrier®
Turn to the Experts.℠

Product Data

CENTURION

EnergyX model shown

DEALER DESIGN AWARDS
theNEWS | GOLD

BUILDINGS magazine
Editors' Choice
TOP 100 PRODUCTS
2005

Puron
the environmentally sound refrigerant

Operation Air Quantity Limits

50PG03-16 Units

UNIT 50PG	COOLING (cfm)		HEATING (cfm) ELECTRIC HEAT	
	Min	Max	Min	Max
03	600	1000	600	1000
04	900	1500	900	1500
05	1200	2000	1200	2000
06	1500	2500	1500	2500
07	1800	3000	1800	3000
08	2250	3750	2250	3750
09	2550	4250	2550	4250
12	3000	5000	3000	5000
14	3750	6250	3750	6250
16	4500	7500	4500	7500

50PG20-28 Units

50PG	COOLING		ELECTRIC HEAT	ELECTRIC HEAT (Vertical)	ELECTRIC HEAT (Horizontal)
	Minimum Cfm	Maximum Cfm		Minimum Cfm	Minimum Cfm
20	5000	9,000	High Heat (75 kW)	4,500	5,400
			Medium Heat (50 kW)	3,750	4,800
			Low Heat (25 kW)	3,750	3,750
24	5500	10,000	High Heat (75 kW)	4,500	5,400
			Medium Heat (50 kW)	3,750	4,800
			Low Heat (25 kW)	3,750	3,750
28	6500	12,000	High Heat (75 kW)	4,500	5,400
			Medium Heat (50 kW)	3,750	4,800
			Low Heat (25 kW)	3,750	3,750

Outdoor Sound Power (Total Unit)

UNIT 50PG	A-WEIGHTED* (dB)	OCTAVE BAND LEVELS dB							
		63	125	250	500	1000	2000	4000	8000
03	75.0	82.6	79.9	75.7	73.3	70.0	64.3	58.4	50.5
04	73.2	79.8	77.2	74.1	70.1	68.0	63.6	58.4	51.9
05	71.9	79.7	79.6	72.6	69.6	66.0	61.4	56.4	48.5
06	78.5	82.2	82.6	79.5	75.7	73.9	68.6	64.0	56.3
07	78.5	87.5	83.0	78.5	76.3	73.8	68.4	63.8	56.5
08	80.0	91.7	83.6	81.0	77.9	75.0	69.9	66.0	59.3
09	79.9	89.1	82.7	80.0	77.7	75.0	70.2	66.3	57.8
12	80.0	90.4	83.1	80.9	77.8	75.2	70.0	66.1	57.6
14	83.3	86.4	85.9	85.3	81.8	78.2	72.2	67.9	59.9
16	84.0	90.3	85.2	83.5	81.1	79.0	73.7	70.5	65.4
20	81.7	90.2	84.8	80.7	79.0	77.6	71.4	66.7	60.7
24	84.9	90.0	86.3	83.6	82.9	80.3	74.9	71.4	66.5
28	84.9	90.0	86.3	83.6	82.9	80.3	74.9	71.4	66.5

LEGEND

db – Decibel

*Sound Rating ARI or Tone Adjusted, A–Weighted Sound Power Level in dB. For sizes 03–12, the sound rating is in accordance with ARI Standard 270–1995. For sizes 14–28, the sound rating is in accordance with ARI 370–2001.

Outdoor Sound Power (Total Unit)
with High CFM EnergyX

UNIT 50PG w/ERV	A−WEIGHTED* (dB)	OCTAVE BAND LEVELS dB							
		63	125	250	500	1000	2000	4000	8000
03	83.0	82.8	81.4	79.7	78.1	77.9	76.5	72.5	70.1
04	82.7	80.2	79.6	79.1	77.3	77.6	76.5	72.5	70.1
05	82.6	80.1	81.1	78.8	77.2	77.4	76.4	72.4	70.0
06	83.8	82.4	83.4	81.6	79.1	78.8	76.9	72.9	70.2
07	83.8	87.6	83.8	81.1	79.3	78.8	76.9	72.9	70.2
08	87.3	92.0	86.8	84.5	82.4	81.8	80.5	78.0	74.2
09	87.2	89.6	86.4	84.1	82.4	81.8	80.5	78.1	74.2
12	87.3	90.8	86.5	84.5	82.4	81.8	80.5	78.0	74.2
14	88.2	87.2	88.0	87.0	84.2	82.7	80.8	78.2	74.3
16	91.4	93.2	92.8	88.2	86.3	85.5	84.4	83.4	78.4
20	91.2	93.1	92.7	87.4	85.8	85.2	84.2	83.3	78.3
24	91.7	93.0	93.0	88.2	86.9	85.8	84.5	83.5	78.5
28	91.7	93.0	93.0	88.2	86.9	85.8	84.5	83.5	78.5

LEGEND
dB − Decibel
***** Sound Rating ARI or tone Adjusted, A−Weighted Sound Power Level in dB. For sizes 03−12, the sound rating is in accordance with ARI Standard 270−1995. For sizes 14−28, the sound rating is in accordance with ARI 370−2001.

PHYSICAL DATA

50PG03-07

BASE UNIT 50PG		03	04	05	06	07
NOMINAL CAPACITY (Tons)		2	3	4	5	6
OPERATING WEIGHT (lb)						
Unit*		704	704	775	829	874
Economizer						
Vertical		40	40	40	40	40
Horizontal		50	50	50	50	50
Humidi-MiZer™ Adaptive Dehumidification System		22	22	31	27	26
Roof Curb						
14-in.		122	122	122	122	122
24-in.		184	184	184	184	184
COMPRESSOR		Fully Hermetic Scroll				
Quantity		1	1	1	1	1
Oil Type		Copeland 3MA				
Number of Refrigerant Circuits		1	1	1	1	1
Oil (oz)		38	42	42	66	56
REFRIGERANT TYPE		R-410A (Puron® Refrigerant)				
Expansion Device		TXV	TXV	TXV	TXV	TXV
Operating Charge (lb) — Standard Unit		7.3	9.0	15.7	16.6	19.0
Operating Charge (lb) — Unit with Humidi-MiZer System		11.75	13.50	25.00	22.00	22.70
CONDENSER COIL		Enhanced Copper Tubes, Aluminum Lanced Fins				
Condenser A (Outer)						
Rows...Fins/in.		1…17	1…17	2…17	2…17	2…17
Face Area (sq ft)		12.6	12.6	12.6	12.6	12.6
Condenser B (Inner)						
Rows...Fins/in.		—	1…17	2…17	2…17	2…17
Face Area (sq ft)		—	12.6	12.6	12.6	12.6
HUMIDI–MIZER COIL		Enhanced Copper Tubes, Aluminum Lanced Fins				
Rows...Fins/in.		1...17	1...17	1...17	1...17	1...17
Face Area (sq ft)		6.4	6.4	9.3	9.3	9.3
CONDENSER FAN		Propeller				
Quantity…Diameter (in.)		1…24	1…24	1…24	1…24	1…24
Nominal Cfm (Total, all fans)		3500	3500	3500	4500	4500
Motor Hp		1/8	1/8	1/8	1/4	1/4
Nominal Rpm — High Speed		825	825	825	1100	1100
Nominal Rpm — Low Speed		300	300	300	300	300
EVAPORATOR COIL		Enhanced Copper Tubes, Aluminum Double-Wavy Fins, Face Split				
Rows…Fins/in.		2…15	2…15	2…15	3…15	4…15
Face Area (sq ft)		9.3	9.3	9.3	9.3	9.3
EVAPORATOR FAN		Centrifugal Type, Belt Drive				
Quantity…Size (in.)	Low	1...12 x 9	1...12 x 9	1...12 x 9	1...12 x 9	1...12 x 9
	High	1...12 x 9	1...12 x 9	1...12 x 9	1...12 x 9	1...12 x 9
Type Drive	Low	Belt	Belt	Belt	Belt	Belt
	High	Belt	Belt	Belt	Belt	Belt
Nominal Cfm		800	1200	1600	2000	2400
Maximum Continuous Bhp	Low	0.85	0.85	0.85	0.85/2.40†	2.40
	High	0.85	0.85	1.60/2.40†	1.60/2.40†	3.10
Motor Nominal Rpm		1620	1620	1620	1725	1725
Motor Frame Size	Low	48Y	48Y	48Y	56Y	56Y
	High	48Y	48Y	56Y	56Y	56Y
Fan Rpm Range	Low	482-736	482-736	596-910	690-978	796-1128
	High	656-1001	796-1128	828-1173	929-1261	1150-1438
Motor Bearing Type		Ball	Ball	Ball	Ball	Ball
Maximum Fan Rpm		2000	2000	2000	2000	2000
Motor Pulley Pitch Diameter Range (in.)	Low	1.9-2.9	1.9-2.9	1.9-2.9	2.4-3.4	2.4-3.4
	High	1.9-2.9	2.4-3.4	2.4-3.4	2.8-3.8	4.0-5.0
Fan Pulley Pitch Diameter (in.)	Low	6.8	6.8	5.5	6.0	5.2
	High	5.0	5.2	5.0	5.2	6.0
Nominal Motor Shaft Diameter (in.)	Low	1/2	1/2	1/2	5/8	5/8
	High	1/2	1/2	5/8	5/8	7/8
Belt…Pitch Length (in.)	Low	49.3	49.3	49.3	49.3	49.3
	High	49.3	49.3	49.3	49.3	52.3
Belt…Type	Low	AX	AX	AX	AX	AX
	High	AX	AX	AX	AX	AX
Pulley Center Line Distance Min. (in.)	Low	16.2	16.2	16.2	16.2	16.2
	High	16.2	16.2	16.2	16.2	16.2
Pulley Center Line Distance Max. (in.)	Low	20.2	20.2	20.2	20.2	20.2
	High	20.2	20.2	20.2	20.2	20.2
Speed Change per Full Turn of Movable Pulley Flange (rpm)	Low	48	48	59	58	66
	High	65	62	69	66	58
Movable Pulley Maximum Full Turns from Closed Position	Low	5	5	5	5	5
	High	5	5	5	5	5
Factory Pulley Setting (rpm)	Low	482	482	596	690	796
	High	656	796	828	929	1150
Fan Shaft Diameter at Pulley (in.)		3/4	3/4	3/4	3/4	3/4
HIGH-PRESSURE SWITCH (psig)						
Cutout		660 ± 10	660 ± 10	660 ± 10	660 ± 10	660 ± 10
Reset (Auto.)		505 ± 20	505 ± 20	505 ± 20	505 ± 20	505 ± 20
RETURN-AIR FILTERS		Throwaway				
Quantity…Size (in.)		4…16 x 20 x 2	4…16 x 20 x 2	4…16 x 20 x 2	4…16 x 20 x 2	4…16 x 20 x 2

LEGEND

TXV – Thermostatic Expansion Valve

*Aluminum evaporator coil/aluminum condenser coil.

† Single phase/three phase

Appendix C

RCNM Output

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/3/2020
Case Description: Kearney Mesa Logistics Contruction - Demolition Concrete Breaking

		---- Receptor #1 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Ramada Hotel	Residential	60	60	60

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Jackhammer	Yes	20		88.9	1500	0
Concrete Saw	No	20		89.6	1500	0

			Results											
		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)				
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Jackhammer		59.3	52.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw		60	53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	60	55.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/3/2020
Case Description: Kearney Mesa Logistics Contruction - Deolition Debris Loading

		---- Receptor #1 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Ramada Hotel	Residential	60	60	60

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Dozer	No	40		81.7	1500	0
Front End Loader	No	40		79.1	1500	0
Dump Truck	No	40		76.5	1500	0

			Results											
		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)				
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer		52.1	48.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader		49.6	45.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dump Truck		46.9	42.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	52.1	50.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 9/3/2020
Case Description: Kearney Mesa Logistics Contruction - Mass Grading

		---- Receptor #1 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Ramada Hotel	Residential	60	60	60

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Scraper	No	40		83.6	1500	0
Scraper	No	40		83.6	1500	0
Scraper	No	40		83.6	1500	0

			Results											
		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)				
				Day		Evening		Night		Day		Evening		Night	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Scraper		54	50.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper		54	50.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Scraper		54	50.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Total	54	54.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*Calculated Lmax is the Loudest value.

Appendix D

Traffic Noise Model Data

LTD-18 TNM Road Segment Input																								
					PM Peak HourTraffic Volumes																			
					Project				Existing				Existing + Project				Near-Term Cumulative (2021)				Near-Term Cumulative + Project			
Road	Segment	Width (ft)	Speed Limit (mph)	Land Uses	Total	LDA/LDT (67.8%)	MDT (13.2%)	HDT (19%)	Total	LDA/LDT (96%)	MDT (3%)	HDT (1%)	Total	LDA/LDT	MDT	HDT	Total	LDA/LDT (97%)	MDT (3%)	HDT (1%)	Total	LDA/LDT (97%)	MDT (3%)	HDT (1%)
Kearney Mesa Rd	Magnatron Blvd to Clairemont Mesa Blvd	35	30	Industrial, Commercial (hotel)	202	137	27	38	435	418	13	4	637	555	40	43	741	711	22	7	943	848	49	46
Clairemont Mesa Blvd	Mercury St to Kearney Mesa Rd	100	40	Industrial, Commercial	51	34	7	10	3223	3094	97	32	3274	3128	103	42	3341	3207	100	33	3392	3242	107	43
	SR-163 Interchange	100	40	-	104	71	14	20	3823	3670	115	38	3823	3741	128	58	4013	3852	120	40	4117	3923	134	60
	Kearney Villa Rd to Overland Ave	100	40	Industrial, Commercial	16	11	2	3	4122	3957	124	41	4138	3968	126	44	4360	4186	131	44	4376	4197	133	47
SR-163	Clairemont Mesa Blvd to SR-52	150	58.0 autos, 48.0 trucks	-	95	64	13	18	13100	12576	393	131	13195	12640	406	149	13100	12576	393	131	13195	12640	406	149
	SB Clairemont Off-Ramp	55	35	-	43	29	6	8	1497	1437	45	15	1540	1466	51	23	1599	1535	48	16	1642	1564	54	24
	SB Clairemont On-Ramp	40	35	-	0	0	0	0	393	377	12	4	393	377	12	4	396	380	12	4	396	380	12	4
SR-52	Convoy St to SR-163	150	62.8 autos, 52.8 trucks	-	28	19	4	5	9900	9504	297	99	9928	9523	301	104	9900	9504	297	99	9928	9523	301	104

HELIX Environmental Planning 11 September 2020
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INPUT: ROADWAYS
PROJECT/CONTRACT: LTD-18
RUN: Kearney Mesa Logistics Existing

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway Name	Width	Points Name	No.	Coordinates (pavement) X	Y	Z	Flow Control Control Device	Speed Constraint	Percent Vehicles Affected	Segment Pvmt Type	On Struct?
	m			m	m	m		km/h	%		
SR-163	45.7	point1	1	-137.0	-216.0	0.00				Average	
		point13	13	0.0	0.0	0.00				Average	
		point3	3	548.0	738.0	0.00					
SR-52	45.7	point4	4	-547.0	518.0	0.00				Average	
		point5	5	149.0	690.0	0.00				Average	
		point6	6	548.0	738.0	0.00					
Kearney Mesa Road	10.7	point20	20	-387.0	-162.0	0.00				Average	
		point21	21	-380.0	-139.0	0.00				Average	
		point22	22	-347.0	-113.0	0.00				Average	
		point23	23	-216.0	-48.0	0.00				Average	
		point24	24	-122.0	-29.0	0.00				Average	
		point25	25	-88.0	-13.0	0.00				Average	
		point26	26	-37.0	48.0	0.00				Average	
		point27	27	4.0	95.0	0.00					
Clairemont Blvd West	30.5	point28	28	-888.0	-176.0	0.00				Average	
		point29	29	-387.0	-176.0	0.00					
Clairemont Blvd Interchange	30.5	point30	30	-387.0	-176.0	0.00				Average	
		point31	31	-305.0	-182.0	0.00				Average	
		point32	32	100.0	-314.0	0.00					
SR-163 SB Offramp 1	16.8	point33	33	-266.0	-174.0	0.00				Average	
		point34	34	-244.0	-120.0	0.00				Average	
		point35	35	-203.0	-91.0	0.00				Average	
		point36	36	-126.0	-64.0	0.00				Average	
		point37	37	-64.0	-22.0	0.00				Average	
		point38	38	50.0	113.0	0.00					

SR-163 SB Onramp 1	3.7	point39	39	-248.0	-175.0	0.00				Average	
		point40	40	-226.0	-123.0	0.00				Average	
		point41	41	-198.0	-107.0	0.00				Average	
		point42	42	-169.0	-111.0	0.00				Average	
		point43	43	-147.0	-134.0	0.00				Average	
		point44	44	-143.0	-164.0	0.00				Average	
		point45	45	-163.0	-209.0	0.00					
Clairemont Mesa Blvd East	30.5	point46	46	100.0	-314.0	0.00				Average	
		point47	47	174.0	-333.0	0.00				Average	
		point48	48	782.0	-333.0	0.00					

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INPUT: RECEIVERS
PROJECT/CONTRACT: LTD-18
RUN: Kearney Mesa Logistics Existing

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Impact Criteria Sub'l	NR Goal	Active in Calc.
			m	m	m	m	dBA	dBA	dB	dB	
Project 1	1	1	166.0	344.0	0.00	1.50	0.00	66	10.0	8.0	Y
Project 2	2	1	217.0	419.0	0.00	1.50	0.00	66	10.0	8.0	Y
Project 3	3	1	-57.0	562.0	0.00	1.50	0.00	66	10.0	8.0	Y
Kearney Mesa Ramada	12	1	-242.0	-15.0	0.00	1.50	0.00	66	10.0	8.0	Y
Kearney Mesa Hampton	13	1	-334.0	-56.0	0.00	1.50	0.00	66	10.0	8.0	Y
Kearney Mesa Residence Inn	14	1	-391.0	-57.0	0.00	1.50	0.00	66	10.0	8.0	Y
Clairemont West 1	15	1	-654.0	-155.0	0.00	1.50	0.00	66	10.0	8.0	Y
Clairemont East 1	16	1	642.0	-310.0	0.00	1.50	0.00	66	10.0	8.0	Y

INPUT: TRAFFIC FOR LAeq1h Volumes **LTD-18**

HELIX Environmental Planning **11 September 2020**
Martin Rolph **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **LTD-18**
RUN: **Kearney Mesa Logistics Existing**

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
SR-163	point1	1	12576	93	393	77	131	77	0	0	0	0
	point13	13	12576	93	393	77	131	77	0	0	0	0
	point3	3										
SR-52	point4	4	9504	101	297	85	99	85	0	0	0	0
	point5	5	9504	101	297	85	99	85	0	0	0	0
	point6	6										
Kearney Mesa Road	point20	20	418	56	13	56	4	56	0	0	0	0
	point21	21	418	56	13	56	4	56	0	0	0	0
	point22	22	418	56	13	56	4	56	0	0	0	0
	point23	23	418	56	13	56	4	56	0	0	0	0
	point24	24	418	56	13	56	4	56	0	0	0	0
	point25	25	418	56	13	56	4	56	0	0	0	0
	point26	26	418	56	13	56	4	56	0	0	0	0
	point27	27										
Clairemont Blvd West	point28	28	3094	64	97	64	32	64	0	0	0	0
	point29	29										
Clairemont Blvd Interchange	point30	30	3670	64	115	64	38	64	0	0	0	0
	point31	31	3670	64	115	64	38	64	0	0	0	0
	point32	32										
SR-163 SB Offramp 1	point33	33	1437	56	45	56	15	56	0	0	0	0
	point34	34	1437	56	45	56	15	56	0	0	0	0
	point35	35	1437	56	45	56	15	56	0	0	0	0
	point36	36	1437	56	45	56	15	56	0	0	0	0

	point37	37	1437	56	45	56	15	56	0	0	0	0
	point38	38										
SR-163 SB Onramp 1	point39	39	377	56	12	56	4	56	0	0	0	0
	point40	40	377	56	12	56	4	56	0	0	0	0
	point41	41	377	56	12	56	4	56	0	0	0	0
	point42	42	377	56	12	56	4	56	0	0	0	0
	point43	43	377	56	12	56	4	56	0	0	0	0
	point44	44	377	56	12	56	4	56	0	0	0	0
	point45	45										
Clairemont Mesa Blvd East	point46	46	3957	64	124	64	41	64	0	0	0	0
	point47	47	3957	64	124	64	41	64	0	0	0	0
	point48	48										

HELIX Environmental Planning
Martin Rolph

11 September 2020
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: LTD-18
RUN: Kearney Mesa Logistics Existing
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Project 1	1	1	0.0	73.8	66	73.8	10	Snd Lvl	73.8	0.0	8	-8.0
Project 2	2	1	0.0	73.6	66	73.6	10	Snd Lvl	73.6	0.0	8	-8.0
Project 3	3	1	0.0	73.4	66	73.4	10	Snd Lvl	73.4	0.0	8	-8.0
Kearney Mesa Ramada	12	1	0.0	66.7	66	66.7	10	Snd Lvl	66.7	0.0	8	-8.0
Kearney Mesa Hampton	13	1	0.0	64.4	66	64.4	10	----	64.4	0.0	8	-8.0
Kearney Mesa Residence Inn	14	1	0.0	62.8	66	62.8	10	----	62.8	0.0	8	-8.0
Clairemont West 1	15	1	0.0	70.0	66	70.0	10	Snd Lvl	70.0	0.0	8	-8.0
Clairemont East 1	16	1	0.0	70.4	66	70.4	10	Snd Lvl	70.4	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	8	0.0	0.0	0.0
All Impacted	6	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

HELIX Environmental Planning **11 September 2020**
Martin Rolph **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **LTD-18**
RUN: **Kearney Mesa Logisitcs Existing + Project**

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
SR-163	point1	1	12640	93	406	77	149	77	0	0	0	0
	point13	13	12640	93	406	77	149	77	0	0	0	0
	point3	3										
SR-52	point4	4	9523	101	301	85	104	85	0	0	0	0
	point5	5	9523	101	301	85	104	85	0	0	0	0
	point6	6										
Kearney Mesa Road	point20	20	555	56	40	56	43	56	0	0	0	0
	point21	21	555	56	40	56	43	56	0	0	0	0
	point22	22	555	56	40	56	43	56	0	0	0	0
	point23	23	555	56	40	56	43	56	0	0	0	0
	point24	24	555	56	40	56	43	56	0	0	0	0
	point25	25	555	56	40	56	43	56	0	0	0	0
	point26	26	555	56	40	56	43	56	0	0	0	0
	point27	27										
Clairemont Blvd West	point28	28	3128	64	103	64	42	64	0	0	0	0
	point29	29										
Clairemont Blvd Interchange	point30	30	3741	64	128	64	58	64	0	0	0	0
	point31	31	3741	64	128	64	58	64	0	0	0	0
	point32	32										
SR-163 SB Offramp 1	point33	33	1466	56	51	56	23	56	0	0	0	0
	point34	34	1466	56	51	56	23	56	0	0	0	0
	point35	35	1466	56	51	56	23	56	0	0	0	0
	point36	36	1466	56	51	56	23	56	0	0	0	0

	point37	37	1466	56	51	56	23	56	0	0	0	0
	point38	38										
SR-163 SB Onramp 1	point39	39	377	56	12	56	4	56	0	0	0	0
	point40	40	377	56	12	56	4	56	0	0	0	0
	point41	41	377	56	12	56	4	56	0	0	0	0
	point42	42	377	56	12	56	4	56	0	0	0	0
	point43	43	377	56	12	56	4	56	0	0	0	0
	point44	44	377	56	12	56	4	56	0	0	0	0
	point45	45										
Clairemont Mesa Blvd East	point46	46	3968	64	126	64	44	64	0	0	0	0
	point47	47	3968	64	126	64	44	64	0	0	0	0
	point48	48										

HELIX Environmental Planning
Martin Rolph

11 September 2020
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: LTD-18
RUN: Kearney Mesa Logisitcs Existing + Project
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Project 1	1	1	0.0	73.8	66	73.8	10	Snd Lvl	73.8	0.0	8	-8.0
Project 2	2	1	0.0	73.6	66	73.6	10	Snd Lvl	73.6	0.0	8	-8.0
Project 3	3	1	0.0	73.4	66	73.4	10	Snd Lvl	73.4	0.0	8	-8.0
Kearney Mesa Ramada	12	1	0.0	67.2	66	67.2	10	Snd Lvl	67.2	0.0	8	-8.0
Kearney Mesa Hampton	13	1	0.0	65.2	66	65.2	10	----	65.2	0.0	8	-8.0
Kearney Mesa Residence Inn	14	1	0.0	63.3	66	63.3	10	----	63.3	0.0	8	-8.0
Clairemont West 1	15	1	0.0	70.2	66	70.2	10	Snd Lvl	70.2	0.0	8	-8.0
Clairemont East 1	16	1	0.0	70.5	66	70.5	10	Snd Lvl	70.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	8	0.0	0.0	0.0
All Impacted	6	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

INPUT: TRAFFIC FOR LAeq1h Volumes **LTD-18**

HELIX Environmental Planning **11 September 2020**
Martin Rolph **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **LTD-18**
RUN: **Kearney Mesa Logistics 2021**

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
SR-163	point1	1	12576	93	393	77	131	77	0	0	0	0
	point13	13	12576	93	393	77	131	77	0	0	0	0
	point3	3										
SR-52	point4	4	9504	101	297	85	99	85	0	0	0	0
	point5	5	9504	101	297	85	99	85	0	0	0	0
	point6	6										
Kearney Mesa Road	point20	20	711	56	22	56	7	56	0	0	0	0
	point21	21	711	56	22	56	7	56	0	0	0	0
	point22	22	711	56	22	56	7	56	0	0	0	0
	point23	23	711	56	22	56	7	56	0	0	0	0
	point24	24	711	56	22	56	7	56	0	0	0	0
	point25	25	711	56	22	56	7	56	0	0	0	0
	point26	26	711	56	22	56	7	56	0	0	0	0
	point27	27										
Clairemont Blvd West	point28	28	3207	64	100	64	33	64	0	0	0	0
	point29	29										
Clairemont Blvd Interchange	point30	30	3852	64	120	64	40	64	0	0	0	0
	point31	31	3852	64	120	64	40	64	0	0	0	0
	point32	32										
SR-163 SB Offramp 1	point33	33	1535	56	48	56	16	56	0	0	0	0
	point34	34	1535	56	48	56	16	56	0	0	0	0
	point35	35	1535	56	48	56	16	56	0	0	0	0
	point36	36	1535	56	48	56	16	56	0	0	0	0

	point37	37	1535	56	48	56	16	56	0	0	0	0
	point38	38										
SR-163 SB Onramp 1	point39	39	380	56	12	56	4	56	0	0	0	0
	point40	40	380	56	12	56	4	56	0	0	0	0
	point41	41	380	56	12	56	4	56	0	0	0	0
	point42	42	380	56	12	56	4	56	0	0	0	0
	point43	43	380	56	12	56	4	56	0	0	0	0
	point44	44	380	56	12	56	4	56	0	0	0	0
	point45	45										
Clairemont Mesa Blvd East	point46	46	4186	64	131	64	44	64	0	0	0	0
	point47	47	4186	64	131	64	44	64	0	0	0	0
	point48	48										

HELIX Environmental Planning
Martin Rolph

11 September 2020
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: LTD-18
RUN: Kearney Mesa Logistics 2021
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Project 1	1	1	0.0	73.8	66	73.8	10	Snd Lvl	73.8	0.0	8	-8.0
Project 2	2	1	0.0	73.6	66	73.6	10	Snd Lvl	73.6	0.0	8	-8.0
Project 3	3	1	0.0	73.4	66	73.4	10	Snd Lvl	73.4	0.0	8	-8.0
Kearney Mesa Ramada	12	1	0.0	66.9	66	66.9	10	Snd Lvl	66.9	0.0	8	-8.0
Kearney Mesa Hampton	13	1	0.0	64.7	66	64.7	10	----	64.7	0.0	8	-8.0
Kearney Mesa Residence Inn	14	1	0.0	63.0	66	63.0	10	----	63.0	0.0	8	-8.0
Clairemont West 1	15	1	0.0	70.1	66	70.1	10	Snd Lvl	70.1	0.0	8	-8.0
Clairemont East 1	16	1	0.0	70.7	66	70.7	10	Snd Lvl	70.7	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	8	0.0	0.0	0.0
All Impacted	6	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

HELIX Environmnetal Planning **11 September 2020**
Martin Rolph **TNM 2.5**

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: **LTD-18**
RUN: **Kearney Mesa Logistics 2021 + Project**

Roadway	Points											
Name	Name	No.	Segment									
			Autos		MTrucks		HTrucks		Buses		Motorcycles	
			V	S	V	S	V	S	V	S	V	S
			veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h	veh/hr	km/h
SR-163	point1	1	12640	93	406	77	149	77	0	0	0	0
	point13	13	12640	93	406	77	149	77	0	0	0	0
	point3	3										
SR-52	point4	4	9523	101	301	85	104	85	0	0	0	0
	point5	5	9523	101	301	85	104	85	0	0	0	0
	point6	6										
Kearney Mesa Road	point20	20	848	56	49	56	46	56	0	0	0	0
	point21	21	848	56	49	56	46	56	0	0	0	0
	point22	22	848	56	49	56	46	56	0	0	0	0
	point23	23	848	56	49	56	46	56	0	0	0	0
	point24	24	848	56	49	56	46	56	0	0	0	0
	point25	25	848	56	49	56	46	56	0	0	0	0
	point26	26	848	56	49	56	46	56	0	0	0	0
	point27	27										
Clairemont Blvd West	point28	28	3242	64	107	64	43	64	0	0	0	0
	point29	29										
Clairemont Blvd Interchange	point30	30	3923	64	134	64	60	64	0	0	0	0
	point31	31	3923	64	134	64	60	64	0	0	0	0
	point32	32										
SR-163 SB Offramp 1	point33	33	1564	56	54	56	24	56	0	0	0	0
	point34	34	1564	56	54	56	24	56	0	0	0	0
	point35	35	1564	56	54	56	24	56	0	0	0	0
	point36	36	1564	56	54	56	24	56	0	0	0	0

	point37	37	1564	56	54	56	24	56	0	0	0	0
	point38	38										
SR-163 SB Onramp 1	point39	39	380	56	12	56	4	56	0	0	0	0
	point40	40	380	56	12	56	4	56	0	0	0	0
	point41	41	380	56	12	56	4	56	0	0	0	0
	point42	42	380	56	12	56	4	56	0	0	0	0
	point43	43	380	56	12	56	4	56	0	0	0	0
	point44	44	380	56	12	56	4	56	0	0	0	0
	point45	45										
Clairemont Mesa Blvd East	point46	46	4197	64	133	64	47	64	0	0	0	0
	point47	47	4197	64	133	64	47	64	0	0	0	0
	point48	48										

RESULTS: SOUND LEVELS **LTD-18**

HELIX Environmnetal Planning **11 September 2020**
Martin Rolph **TNM 2.5**
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: **LTD-18**
RUN: **Kearney Mesa Logistics 2021 + Project**
BARRIER DESIGN: **INPUT HEIGHTS**
ATMOSPHERICS: **20 deg C, 50% RH**

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Project 1	1	1	0.0	73.8	66	73.8	10	Snd Lvl	73.8	0.0	8	-8.0
Project 2	2	1	0.0	73.6	66	73.6	10	Snd Lvl	73.6	0.0	8	-8.0
Project 3	3	1	0.0	73.4	66	73.4	10	Snd Lvl	73.4	0.0	8	-8.0
Kearney Mesa Ramada	12	1	0.0	67.5	66	67.5	10	Snd Lvl	67.5	0.0	8	-8.0
Kearney Mesa Hampton	13	1	0.0	65.5	66	65.5	10	----	65.5	0.0	8	-8.0
Kearney Mesa Residence Inn	14	1	0.0	63.5	66	63.5	10	----	63.5	0.0	8	-8.0
Clairemont West 1	15	1	0.0	70.3	66	70.3	10	Snd Lvl	70.3	0.0	8	-8.0
Clairemont East 1	16	1	0.0	70.7	66	70.7	10	Snd Lvl	70.7	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	8	0.0	0.0	0.0
All Impacted	6	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0