Appendix H

Noise Technical Report

Lusk on Lusk Project

Noise Technical Report

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ACRONYMS AND ABBREVIATIONS

ADT	average daily trips
ALUCP	Airport Land Use Compatibility Plan
ANSI	American National Standards Institute
CEQA	California Environmental Quality Act
City	City of San Diego
CNEL	Community Noise Equivalent Level
dB	decibel
dBA	A-weighted decibel
HELIX	HELIX Environmental Planning, Inc.
hp	horsepower
HVAC	heating, ventilation, and air conditioning
Hz	hertz
I-	Interstate
kHz	kilohertz
kW	kilowatt
L_{DN}	Day Night sound level
L_{EQ}	time-averaged noise level
LLG	Linscott, Law & Greenspan, Engineers
MCAS	Marine Corps Air Station
µPa	micro-Pascals
NSLU	noise-sensitive land use
Project	Lusk on Lusk Project
RCNM	Roadway Construction Noise Model
SANDAG	San Diego Association of Governments
SF	square foot
SPL	sound pressure level
TNM	Traffic Noise Model
USDOT	U.S. Department of Transportation

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EXECUTIVE SUMMARY

This report presents an assessment of potential noise impacts associated with the proposed Lusk on Lusk Project (Project), which proposes to demolish existing office buildings and construct four research and development buildings with amenity spaces and two parking structures in the City of San Diego (City).

Anticipated construction activities would generate temporary elevated noise levels for nearby residences to the west and would likely exceed the limits set forth in the City's Noise Ordinance, and impacts would be significant. The proposed project would implement mitigation measure NOI-1 from the Mira Mesa Community Plan Update (MM CPU) Final Environmental Impact Report (FEIR). This measure would require construction noise reduction measures for the project. Noise levels attributed to haul trucks on nearby roadways would be less than significant.

The project's rooftop heating, ventilation, and air conditioning systems would not exceed limits within the City's Noise Ordinance at the nearest property lines. The routine testing of the project's generators is not anticipated to exceed the City's Noise Ordinance requirements.

The project's land use is determined to be compatible with the City of San Diego General Plan. Interior noise levels would be reduced based on the recommendations of the project's interior noise study (RGD Acoustics 2022).

The project would add traffic to nearby roadways but would not result in perceptible increases in traffic noise levels at nearby receptors. In addition, the project would not be exposed to excessive aircraft noise and would comply with the adopted Airport Land Use Compatibility Plan for the nearby Marine Corps Air Station Miramar. Impacts related to transportation and aircraft noise would be less than significant.

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1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

This report analyzes potential noise impacts associated with the proposed Lusk on Lusk Project (Project). The analysis includes a description of existing conditions in the project vicinity and an assessment of potential impacts associated with Project implementation.

1.2 PROJECT LOCATION

The Project site includes four parcels, approximately 15.07 acres in total, located within the Mira Mesa Community Plan area of the City of San Diego (City), south of Los Peñasquitos Lagoon and east of Interstate (I-) 5 (Figure 1, *Regional Location*). The proposed Project parcels are situated south and west of Lusk Boulevard, south of the intersection of Lusk Boulevard and Pacific Center Boulevard, within Assessor's Parcel Numbers 341-033-01-00 to -04-00 (Figure 2, *Aerial Photograph*).

1.3 PROJECT DESCRIPTION

The Project proposes to redevelop the existing 15.07-acre property into multi-story lab and office buildings as part of an interconnected science campus (Figure 3, *Site Plan*). The Project proposes the construction of approximately 1,283,190 square feet (SF) of research and development use in four buildings, Buildings L1 through L4; 30,000 SF of tenant-serving amenity space (such as gym facilities, bike facilities, large conference hall, public art, information and welcoming hub, coffee shop, and restaurant); and 1,083,080 SF of parking structures in LP1 and LP2. Access to the site would be provided by five driveways along Lusk Boulevard. Six emergency backup generators would be installed, one for each of the four office buildings and one for each parking structure. The generators would be installed with manufacturer's enclosures and would be shielded from view with noise barriers.

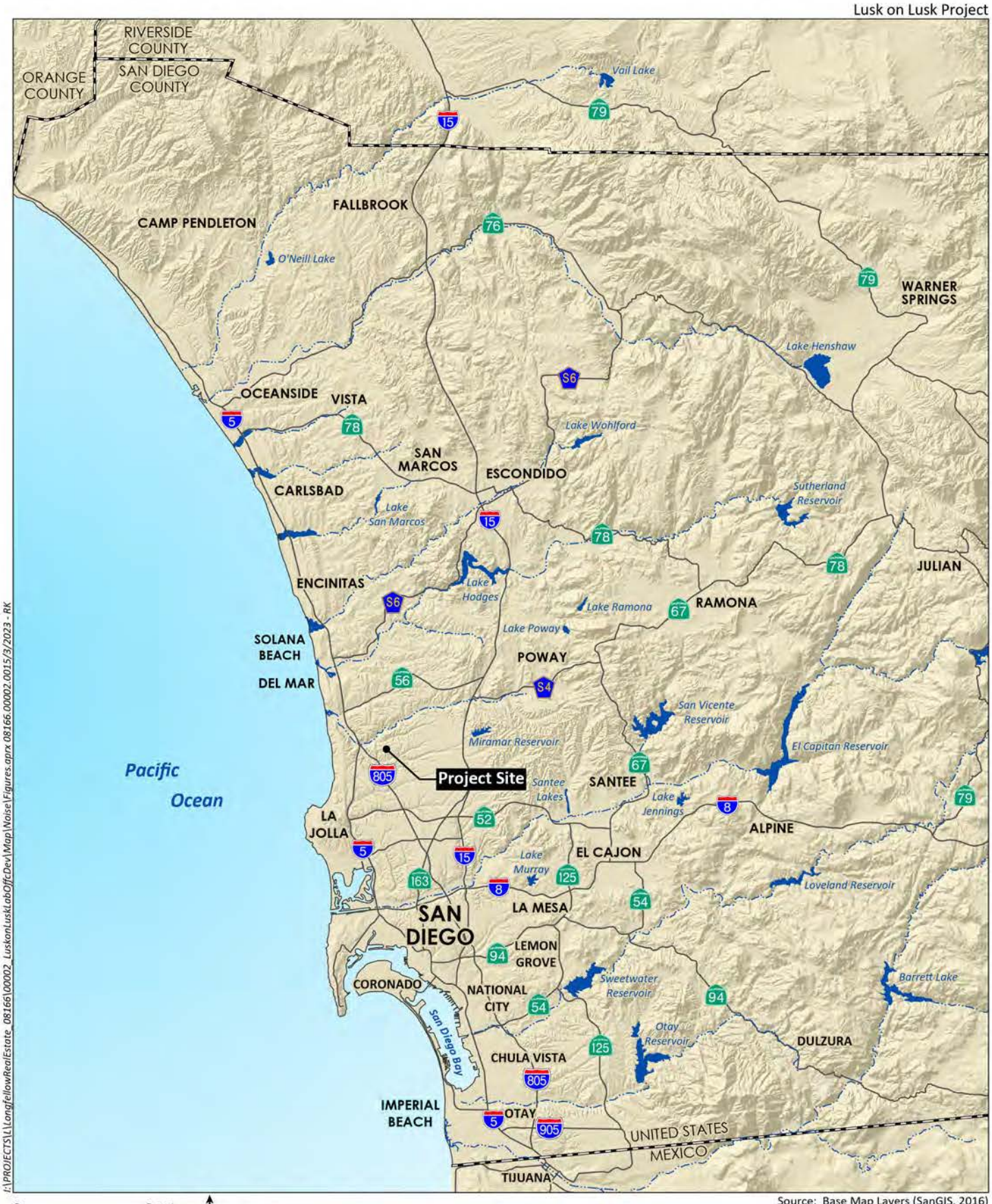
The Project site is currently occupied by 278,491 SF of office and light industrial uses split among six buildings. All existing buildings will be removed as a part of the Project. Grading is estimated to require 211,000 cubic yards (CY) of cut and 37,000 CY of fill, resulting in the export of 174,000 CY.

The Project site is within the Mira Mesa Community Plan Area. The parcels have a community plan land use designation of Heavy and Light Industry (City 2022a) and are zoned as Light Industrial (IL-2-1), which allows for a mix of light industrial, office, and commercial uses consistent with the Project. The Project's required permits would include a Coastal Development Permit and Site Development Permit to allow for the development of the research and development buildings.

1.4 NOISE DESCRIPTORS AND TERMINOLOGY

1.4.1 Noise Descriptors

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 noise levels during the nighttime hours of 10:00 p.m. to 7:00 a.m. have an



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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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0 400 Feet

Source: Aerial (SanGIS, 2023)

HELIX Environmental Planning

Aerial Photograph

Figure 2

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Source: Longfellow 2024

HELIX Environmental Planning

Site Plan

Figure 3

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.

1.4.2 Noise Terminology

1.4.2.1 Sound, Noise, and Acoustics

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 determine 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.

1.4.2.2 Frequency

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.

1.4.2.3 Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (µPa). One µPa is approximately one hundred billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 µPa. Because of this wide range of values, sound is rarely expressed in terms of µPa. Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of dBA. The threshold of hearing for the human ear is about 0 dBA, which corresponds to 20 µPa.

1.4.2.4 Addition of Decibels

Because decibels are logarithmic units, SPL cannot be added or subtracted through standard 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 from one source under the same conditions. For example, if one automobile produces an SPL of 70 dB when it passes an observer, two cars passing simultaneously would not produce 140 dBA—rather, they would combine to produce 73 dBA. Under the decibel scale, three sources of equal loudness together produce a sound level 5 dBA louder than one source.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1 dBA changes in sound levels, when exposed to steady, single-frequency ("pure-tone") signals in the mid-frequency (1,000 Hz to 8,000 Hz) range. In typical noisy environments, changes in noise of 1 to 2 dBA are generally not perceptible. It is widely accepted, however, that people begin to detect sound level increases of 3 dBA in typical noisy environments. Further, a 5 dBA increase is generally perceived as a distinctly noticeable increase, and a 10 dBA increase is generally perceived as a doubling of loudness.

No known studies have directly correlated the ability of a healthy human ear to discern specific levels of change in traffic noise over a 24-hour period. Many ordinances, however, specify a change of 3 CNEL as the significant impact threshold. This is based on the concept of a doubling in noise energy resulting in a 3 dBA change in noise, which is the amount of change in noise necessary for the increase to be perceptible to the average healthy human ear.

1.5 NOISE-SENSITIVE LAND USES

Noise-sensitive land uses (NSLUs) are land uses that may be subject to stress and/or interference from excessive noise, including residences, hospitals, schools, hotels, resorts, libraries, sensitive wildlife habitat, or similar facilities where quiet is an important attribute of the environment. Noise receptors are individual locations that may be affected by noise. NSLUs in the Project vicinity include the residences directly west of the project site off Wateridge Circle and The Courtyard by Marriot Hotel located approximately 1,500 feet south of the Project site.

1.6 REGULATORY FRAMEWORK

1.6.1 California Noise Control Act

The California Noise Control Act is a section within the California Health and Safety Code that describes excessive noise as a serious hazard to public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. It also finds that there is a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the State to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

1.6.2 City of San Diego General Plan, Noise Element

The Noise Element of the City's General Plan establishes noise compatibility guidelines for uses affected by traffic noise, as shown in Table 1, *City of San Diego Land Use Noise Compatibility Guidelines* (City 2015). As shown in Table 1, for the Project's land use (Research & Development), the Noise Element specifies exterior noise levels up to 70 CNEL as compatible and up to 75 CNEL as conditionally compatible, given noise attenuation resulting in 50 CNEL for indoor, occupied spaces. Noise levels exceeding 75 CNEL are generally incompatible with office land uses.

Table 1
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					

Land Use Category				Exterior Noise Exposure (CNEL)				
				<60	60-65	65-70	70-75	75+
Industrial								
Heavy Manufacturing; Light Manufacturing; Marine Industry; Trucking & Transportation Terminals; Mining & Extractive Industries								
Research & Development							50	
	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 2015
CNEL = Community Noise Equivalent Level

1.6.3 City of San Diego Municipal Code

1.6.3.1 Chapter 5, Article 9.5, Division 4, §59.5.0401, Sound Level Limits

San Diego Municipal Code §59.5.0401, as follows, establishes sound level limits for the City that apply to operational noise sources. The permissible sound level is determined by the land use of the affected property, as provided in Table 2, *Applicable Noise 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 2], 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.

(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.

Table 2
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

Land Use Zone	Time of Day	One-hour Average Sound Level (dBA)
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, Section 59.5.0401, Table K-4 Sound Level Limits
dBA = A-weighted decibel

1.6.3.2 Chapter 5, Article 9.5, Division 4, §59.5.0404 Construction Noise

San Diego Municipal Code §59.5.0404, as follows, establishes sound level limits for construction noise within the City. The Municipal Code permits construction between 7:00 a.m. to 7:00 p.m. Mondays through Saturdays with an average sound level of no greater than 75 dBA at the property line of a residentially zoned property during the 12-hour period.

(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.

2.0 ENVIRONMENTAL SETTING

2.1 SURROUNDING LAND USES

Adjacent land uses surrounding the Project site include open space and commercial/industrial land uses to the north, residential land uses directly west, and commercial/industrial land uses to the south and east. These industrial land uses specifically include office, research, and other industrial facilities. The Project site is bordered by Lusk Boulevard on the north and is located approximately 1.2 miles east of the merge of I-5 and I-805. Marine Corps Air Station (MCAS) Miramar is approximately 3.1 miles southeast of the Project site. See Figure 2.

2.2 EXISTING NOISE ENVIRONMENT

The existing noise environment is dominated by traffic noise from Lusk Boulevard, with more distant noise from aircraft noise and freeway traffic along I-805 and I-5.

2.2.1 On-site Survey

Three noise measurements were taken at the Project site to document existing conditions. The first noise measurement was recorded along the western edge of the Project site. The second measurement was taken along Lusk Boulevard. The third measurement was recorded in the eastern corner of the Project site. The measured noise levels are shown in Table 3, *Noise Measurement Results.* Measurement locations are shown on Figure 2.

Table 3
NOISE MEASUREMENT RESULTS

Measurement	Results
Measurement 1 (M1)	
Date:	April 20, 2023
Time:	3:25 p.m. – 3:40 p.m.
Location:	Northern edge of Project site, approximately 520 feet north of Sorrento Valley Boulevard.
Measured Noise Level:	56.9 dBA L_{EQ}
Notes:	Noise sources included distant vehicular traffic, two aircrafts, and on-site traffic within parking lot.
Measurement 2 (M2)	
Date:	April 20, 2023
Time:	1:38 p.m. – 1:53 p.m.
Location:	Lusk Boulevard, in between 6540 Lusk Boulevard and 6440 Lusk Boulevard, approximately 46 feet from the roadway centerline.
Measured Noise Level:	77.9 dBA L_{EQ}
Notes:	Noise sources included vehicular traffic, five medium trucks, two garbage trucks, and two pedestrians.
Measurement 3 (M3)	
Date:	April 20, 2023
Time:	2:08 p.m. – 2:18 p.m.
Location:	Eastern corner of Project site, approximately 130 feet south of Lusk Boulevard, and 115 feet east of 6370 Lusk Boulevard.

Measurement	Results
Measured Noise Level:	74.3 dBA
Notes:	Unknown noise source coming from outside of the site to the south. Additionally, one fighter jet flyover.

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

A 15-minute traffic count was conducted during the second measurement (location M2) to estimate the breakdown of heavy trucks (three or more axles), medium trucks (double tires/two axles), and automobiles along Lusk Boulevard. Traffic counts for the timed measurement and the one-hour equivalent volume are shown in Table 4, *Recorded Traffic Volume and Vehicle Mix*.

Table 4
RECORDED TRAFFIC VOLUME AND VEHICLE MIX

Measurement	Roadway	Traffic	Autos	MT[1]	HT[2]
M2	Lusk Boulevard	15-minute count	88	5	2
		One-hour equivalent	352	20	8
		Percent	92.6%	5.3%	2.1%

[1] Medium Trucks (double tires/two axles)
[2] Heavy Trucks (three or more axles)

3.0 ANALYSIS, METHODOLOGY, AND ASSUMPTIONS

3.1 METHODOLOGY

3.1.1 Ambient Noise Survey

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

- Piccolo II Noise Meter
- Larson Davis Model CA250 Calibrator
- Windscreen and tripod for the noise meter

The sound level meter was calibrated prior to the noise measurements to ensure accuracy. All sound level measurements conducted and presented in this report were made with a sound level meter that conforms to the American National Standards Institute (ANSI) specifications for sound level meters (ANSI SI.4-1983 R2006). All instruments were maintained with the National Institute of Standards and Technology traceable calibration per the manufacturers' standards.

3.1.2 Noise Modeling Software

Modeling of the Project's impact on traffic noise for this report was accomplished using the Traffic Noise Model (TNM) version 2.5 developed by the Federal Highway Administration. TNM was released in February 2004 by the U.S. Department of Transportation (USDOT) and calculates the daytime average hourly L_{EQ} from three-dimensional model inputs and traffic data (USDOT 2004).

Peak-hour traffic volumes are estimated based on the assumption that approximately 10 percent of the average daily traffic would occur during a peak hour. 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:

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

The model-calculated one-hour L_{EQ} noise output is, therefore, approximately equal to the CNEL (California Department of Transportation 2013).

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

3.2 ASSUMPTIONS

3.2.1 Construction

Construction would require the use of equipment throughout the site for the full term of construction. General Project construction activities would include site preparation, demolition, grading, utility undergrounding, physical building construction, paving, and application of architectural coatings. Equipment required for these activities is based on information provided by the Project applicant.

Demolition and grading would result in hauling trips during construction. According to the Project's Air Quality Technical Report (HELIX Environmental Planning, Inc. [HELIX] 2023a), demolition of the existing 278,491 SF of building area is estimated to require approximately 250 one-way debris hauling trips per day over the 40-day demolition period. Approximately 174,000 CY of soil export is anticipated to be required over a 20-day grading period, which is estimated to result in approximately 1,087 one-way export trips per day during the grading period (HELIX 2023a). The daily traffic level associated with grading is anticipated to be the highest daily haul truck traffic level associated with Project construction.

3.2.2 Operations

The proposed Project's operational noise sources are anticipated to include heating, ventilation, and air conditioning (HVAC) systems, six emergency generators, and vehicular traffic. During operations, the Project would also be exposed to vehicular traffic noise and aircraft noise.

3.2.2.1 Heating, Ventilation, and Air Conditioning Units

The Project's site plans show that Buildings L1 through L4 would have four HVAC units on the roof level of each building. This analysis assumes that the design for the office building would use a typical to larger-sized condenser mounted on the Project's rooftop. A ten-ton Carrier 50PG12 condenser is used for these calculations (see Appendix A, *HVAC Sound Data*). Based on a typical requirement of one ton of HVAC per 340 SF of office space, the Project is assumed to require 72 ten-ton units for Building L1, 86 units for Building L2, 108 units for Building L3, and 116 units for Building L4.[1] The manufacturer's noise data is provided below in Table 5, *Carrier 50PG12 Condenser Noise*.

[1] Calculations based on 243,591 SF in Building L1, 292,392 SF in Building L2, 368,597 SF in Building L3, and 393,192 SF in Building L4 (HELIX 2023b).

Table 5
CARRIER 50PG12 CONDENSER NOISE

Noise Levels in Decibels[1] (dB) Measured at Octave Frequencies								Overall Noise Level in A-weighted Scale (dBA)[1]
63 Hz	125 Hz	250 Hz	500 Hz	1 KHz	2 KHz	4 KHz	8 KHz	
90.4	83.1	80.9	77.8	75.2	70.0	66.1	57.6	80.0

[1] Sound Power Level (S_{WL})
HZ = Hertz; KHz = kilohertz

3.2.2.2 Emergency Generators

The Project would include six backup generators, one for each of the four office buildings (L1 through L4) and one for each parking structure (LP1 and LP2). The backup generators for Buildings L1 and L2 would be approximately 3,621 horsepower (hp; 2,500 kilowatts [kW]), and the backup generators for Buildings L3 and L4 would be approximately 4,680 hp (3,000 kW). The backup generators for Parking Structures LP1 and LP2 would be approximately 422 hp (250 kW). According to the Project applicant, the generators would be tested once per month for 30 minutes and once per year for four hours. This analysis models all the generators as Kohler KD2500 units. The locations of the generators are shown on Figure 3.

The manufacturer's noise data for these units are provided below in Table 6, *Generator Noise Data*. Appendix B, *Generator Sound Data*, includes specification sheets for the generator enclosures.

Table 6
GENERATOR NOISE DATA

Generator Type	Enclosure Type	Sound Pressure Level at Full Load (dBA)[1]
KD2500	Sound Level 1	90

Source: Appendix B
[1] Log average sound pressure level of 8 measured positions around the perimeter of the unit at a distance of 23 feet.
dBA = A-weighted decibels

3.2.2.3 Vehicular Traffic

Information related to the Project's trip generation and existing traffic environment was provided by Linscott, Law & Greenspan Engineers (LLG; 2023). The Project is estimated to generate 10,266 ADT. The existing land use generates 1,080 ADT; therefore, the Project would result in a net increase of 9,186 ADT. Access to the Project site would primarily occur via the six driveways off Lusk Boulevard at the northern boundary of the project site. The two driveways at the northeastern and northwestern corners of the project site would provide direct access to the parking garages (LP1 and LP2). Table 7, *Roadway Segment Traffic Volumes*, summarizes the ADT data and segment speed limit for segments of Sorrento Valley Boulevard, Lusk Boulevard, Barnes Canyon Road, Scranton Road, Mira Sorrento Place, Pacific Heights Boulevard, and Mira Mesa Boulevard relevant to this analysis. This traffic information represents conditions anticipated in the proposed opening year of 2027.

Table 7
ROADWAY SEGMENT TRAFFIC VOLUMES

Roadway Segment	Project ADT	Opening Year (2027) ADT	Opening Year (2027) + Project ADT	Speed Limit (MPH)
Sorrento Valley Boulevard				
Roselle Street to Vista Sorrento Parkway	1,745	23,205	24,950	35
Lusk Boulevard				
Vista Sorrento Parkway to Wateridge Circle	2,756	15,406	18,162	35
Wateridge Circle to Pacific Center Boulevard	3,031	14,430	17,461	35
Pacific Center Boulevard to Barnes Canyon Road	6,430	16,406	22,836	35
Barnes Canyon Road to Mira Mesa Boulevard	1,837	12,846	14,683	35
Barnes Canyon Road				
Scranton Road to Lusk Boulevard	3,031	11,248	14,279	20
Scranton Road				
Barnes Canyon Road to Mira Sorrento Place	3,031	14,923	17,954	20
Mira Sorrento Place				
Vista Sorrento Parkway to Scranton Road	1,837	15,105	16,942	20
Pacific Heights Boulevard				
Barnes Canyon Road to Mira Mesa Boulevard	1,562	19,832	21,394	20
Mira Mesa Boulevard				
Vista Sorrento Parkway to Scranton Road	1,837	65,457	67,294	35
Scranton Road to Lusk Boulevard	1,102	51,626	52,728	35
Pacific Heights Boulevard to Flanders Drive	1,929	48,090	50,019	35
Flanders Drive to Camino Santa Fe	1,837	47,401	49,238	35
Camino Santa Fe to Parkdale Avenue	1,562	52,266	53,828	45
Parkdale Avenue to Reagan Road	1,102	54,725	55,827	45
Reagan Road to Camino Ruiz	1,010	48,595	49,605	40
Camino Ruiz to New Salem Street (Marauder Way)	919	35,190	36,109	35
New Salem Street (Marauder Way) to Westonhill Drive	919	61,080	61,999	35
Westonhill Drive to Greenford Drive	919	60,961	61,880	35

Sources: LLG 2023, SANDAG 2023
ADT = average daily traffic; MPH = miles per hour

The traffic distribution from the traffic counts conducted during the Project site survey was applied to this analysis (92.6 percent automobiles, 5.3 percent medium trucks, and 2.1 percent heavy trucks). The speed limits on these street segments are shown in Table 7, above.

3.2.2.4 Aircraft Noise

The Project site is approximately 3.1 miles northwest of the MCAS Miramar Airport. According to the Airport Land Use Compatibility Plan (ALUCP) for MCAS Miramar, the Project site is within the 60 to 65 dB CNEL noise contour for the airport (San Diego County Airport Land Use Commission 2008). Based on the site's location near the 60 CNEL contour, it was assumed that aircraft noise at the Project site results in noise levels of approximately 61 CNEL.

3.3 GUIDELINES FOR THE DETERMINATION OF SIGNIFICANCE

Thresholds used to evaluate potential noise impacts are based on applicable criteria in the State's California Environmental Quality Act (CEQA) Guidelines Appendix G and the City's CEQA Significance Determination Thresholds (City 2022b). A significant noise impact could occur if the Project would:

Threshold 1: *Result in or create a significant increase in the existing ambient noise levels.*

In accordance with the City's CEQA Thresholds, an increase in noise levels during construction would typically be considered a significant impact if construction noise levels would exceed 75 dBA L_{EQ} (12-hour) at a sensitive receptor.

A significant impact related to proposed stationary noise sources would occur if the sources would generate noise levels at the property line that exceed the limits contained in the City's Noise Ordinance (provided in Table 2 of this report).

Threshold 2: *Expose people to noise levels which exceed the City's adopted noise ordinance or are incompatible with Table K-4 of the City's CEQA Thresholds.*

Land use compatibility standards provided in Table K-4 of the City's Thresholds specify that exterior noise levels of up to 65 CNEL are compatible with the office land uses. The General Plan Noise Element provides land use compatibility criteria specific to the proposed research and development land use and states this land use is compatible with exterior noise levels up to 70 CNEL and conditionally compatible with exterior noise levels of up to 75 CNEL given noise attenuation resulting in interior noise levels of 50 CNEL.

Threshold 3: *Expose people to current or future transportation noise levels which exceed standards established in the Transportation Element of the General Plan or an adopted airport Comprehensive Land Use Plan.*

According to the City CEQA Thresholds, a significant impact related to traffic-generated noise would occur if a project would generate increases of 3 CNEL in traffic noise and exterior noise levels exceed 65 CNEL at residential, school, library, hospital, daycare, hotel/motel, park, or convalescent home land uses; 70 CNEL at offices, churches, businesses, or other professional uses; or exceed 75 CNEL at commercial, retail, industrial, or outdoor spectator sport land uses. Impacts related to airports are addressed further under Threshold 4.

Threshold 4: *Result in land uses which are not compatible with aircraft noise levels as defined by an adopted airport Comprehensive Land Use Plan.*

The City's Thresholds state a significant impact related to aircraft noise may occur if a proposed NSLU, such as a residence, hospital, or school, would be subject to airport noise levels greater than 65 CNEL. The MCAS Miramar ALUCP defines research and development land uses as compatible with noise levels up to 70 CNEL and conditionally compatible with noise levels between 70 and 80 dB CNEL, provided interior noise levels do not exceed 50 dB CNEL.

4.0 IMPACT ANALYSIS

4.1 THRESHOLD 1: INCREASE IN AMBIENT NOISE LEVELS

Would the project result in or create a significant increase in the existing ambient noise levels?

4.1.1 Construction Noise Generation

In accordance with the City's CEQA Thresholds, an increase in noise levels during construction would typically be considered a significant impact if construction noise levels would exceed 75 dBA L_{EQ} (12-hour) at a sensitive receptor. The Municipal Code specifies that construction noise shall not exceed 75 dBA L_{EQ} (12-hour) at a residentially zoned property between 7:00 a.m. and 7:00 p.m.

The property immediately west of the Project site is zoned Commercial - Community but contains residences; therefore, a significant impact to this NSLU could occur if construction of the Project would exceed the 75 dBA L_{EQ} (12-hour) standard. Although construction equipment would cross the project site and would not remain in one location throughout a given hour or workday, as a conservative estimate, construction noise levels were analyzed at a distance of 40 feet, due to the proximity of the proposed parking garage to nearby residences.

As discussed in Section 3.2.1, equipment assumed to be required during site preparation, demolition, grading, utility undergrounding, building construction, architectural coating, and paving is based on information provided by the Project applicant. The magnitude of the resulting noise would depend on the type of construction activity, equipment, duration of each construction phase, distance between the noise source and receiver, and any intervening structures. Table 8, *Construction Equipment Noise Levels*, provides the hourly and 12-hour average 40-foot noise levels calculated in RCNM for equipment anticipated to be used during Project construction. It was anticipated that construction activity would occur over an 8-hour workday. These noise levels do not include intervening structures or topography. The modeling output results can be found in Appendix C, *Construction Noise Model Output.*

Table 8
CONSTRUCTION EQUIPMENT NOISE LEVELS

Unit	Percent Operating Time	dBA L_{EQ} (1-hour) at 40 feet	dBA L_{EQ} (12-hour) at 40 feet
Backhoe	40	75.5	73.7
Compactor (ground)	20	78.2	76.4
Compressor (air)	40	75.6	73.8
Concrete Mixer Truck	40	76.8	75.0
Concrete Pump Truck	20	76.3	74.5
Concrete Saw	20	84.5	82.7
Crane	16	74.5	72.7
Dozer	40	79.6	77.8
Dump Truck	40	74.4	72.6
Excavator	40	78.7	76.9
Front End Loader	40	77.1	75.3
Generator	50	79.6	77.8
Gradall	40	81.4	79.6
Grader	40	83.0	81.2

Unit	Percent Operating Time	dBA L_{EQ} (1-hour) at 40 feet	dBA L_{EQ} (12-hour) at 40 feet
Jackhammer	20	83.8	82.0
Man Lift	20	69.6	67.8
Paver	50	76.1	74.3
Pumps	50	79.9	78.1
Roller	20	74.9	73.1
Scraper	40	81.5	79.7
Welder / Torch	40	72.0	70.2
Excavator and Dump Truck	40	78.1	76.4

Source: RCNM; Appendix C
dBA = A-weighted decibel; L_{EQ} = time-averaged sound level; HP = horsepower

As shown in Table 8, individual pieces of construction equipment would result in noise levels exceeding the City's 75 dBA L_{EQ} (12-hour) limit when operating at 40 feet from the nearby residential property line. It is anticipated that, at times, multiple pieces of equipment may be operating simultaneously.

While construction activities at the western side of the Project site would potentially exceed the City's construction noise limit, it should be noted that construction equipment would not be in this location throughout the duration of construction. Construction in the central portion of the Project site would occur approximately 900 feet from the residential receptors. At this distance, a concrete saw, the loudest piece of equipment shown in Table 8, generates an average noise level of 55.7 dBA L_{EQ} (12-hour) (USDOT 2008). Nonetheless, construction activities associated with the proposed Project would generate noise levels exceeding the City's 75 dBA L_{EQ} (12-hour) limit, and potentially significant impacts would occur. To visualize the noise levels of anticipated construction equipment, the noise contours of a combined excavator and dump truck, which would likely be used near the nearest NLSUs, are shown in Figure 4, *Construction Noise Contours*. These contours do not account for obstructions such as intervening buildings. Implementation of mitigation measure NOI-1 would reduce impacts from construction noise to a less than significant level.

As discussed in Section 3.2.1., it is anticipated that 1,087 one-way haul truck trips per day would be required during a 20-day haul period during grading. Over the course of a typical eight-hour construction day, this would result in approximately 136 truck passes per hour. At residences located 60 feet from the roadway centerline of Lusk Boulevard, these haul trips would result in an hourly noise level of 66.2 dBA L_{EQ} (USDOT 2004). Therefore, off-site construction activity associated with hauling would not exceed the City's 75 dBA L_{EQ} (12-hour) construction noise limit, and impacts would be less than significant.

Construction activity in the City is prohibited 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 the exception of Columbus Day and Washington's Birthday, or on Sundays, which would create disturbing, excessive, or offensive noise unless a permit has been applied for and granted beforehand. Project construction would occur within the allowable daytime hours. Construction noise levels would be reduced to less than significant levels with the implementation of the Mira Mesa Community Plan Update (MM CPU) Final Environmental Impact Report (FEIR) mitigation measure NOI-1:

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0 100 Feet

Source: Aerial (SanGIS, 2023)

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Construction Noise Contours

Figure 4

NOI-1 Construction Noise – Reduction Measures. Construction contractors shall implement the following measures to minimize short-term noise levels caused by construction activities. Measures to reduce construction noise shall be included in contractor specifications and shall include, but not be limited to, the following:

Properly outfit and maintain construction equipment with manufacturer-recommended noise reduction devices to minimize construction-generated noise.

Operate all diesel equipment with closed engine doors and equip with factory recommended mufflers.

Use electrical power to operate air compressors and similar power tools.

Employ additional noise attenuation techniques, as needed, to reduce excessive noise levels such as, but not limited to, the construction of temporary sound barriers or sound blankets between construction sites and nearby noise-sensitive receptors.

Notify adjacent noise-sensitive receptors in writing no later than 2 weeks prior to the start of construction of any construction activity such as jackhammering, concrete sawing, asphalt removal, pile driving, and large scale grading operations that would occur within 100 feet of the property line of the nearest noise-sensitive receptor. The extent and duration of the construction activity shall be included in the notification.

Designate a "disturbance coordinator" who shall be responsible for receiving and responding to any complaints about construction noise or vibration. The disturbance coordinator shall determine the cause of the noise complaint and, if identified as a sound generated by construction area activities, shall require that reasonable measures be implemented to correct the problem. Potential measures to address the problem could include, but are not limited to, providing sound barriers or sound blankets between construction sites and the receiver location, locating noisy equipment as far from the receiver as possible, and reducing the duration of the noise-generating construction activity.

Noise levels from project-related construction activities shall not exceed the noise limit specified in San Diego Municipal Code §59.5.0404 of 75 dBA (12-hour average), when measured at the boundary line of the nearby residential uses to the west. A Construction Management Plan describing the measures shall be included on the construction plans to ensure compliance with the noise limit shall be prepared by the project applicant and submitted to the City for approval prior to issuance of the grading permit. The following measures shall be included to reduce construction noise, and as necessary, verified by a qualified acoustician:

- Construction equipment to be properly outfitted and maintained with manufacturer-recommended noise-reduction devices.

- Diesel equipment to be operated with closed engine doors and equipped with factory-recommended mufflers.

- Mobile or fixed "package" equipment (e.g., arc-welders and air compressors) to be equipped with shrouds and noise control features that are readily available for that type of equipment.

- Electrically powered equipment to be used instead of pneumatic or internal-combustion powered equipment, where feasible.

- Unnecessary idling of internal combustion engines (e.g., in excess of 5 minutes) to be prohibited.

- Material stockpiles and mobile equipment staging, parking, and maintenance areas to be located as far as practicable from noise sensitive receptors.

- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.

- No project-related public address or music system shall be audible at any adjacent sensitive receptor.

- Temporary sound barriers or sound blankets shall be installed between construction operations and adjacent noise-sensitive receptors to the west. Due to equipment exhaust pipes being approximately 7 to 8 feet above ground, a sound wall at least 10 feet in height above grade, to block the line-of-sight between project construction activities and residences along the western property lines. To effectively reduce noise levels, the sound barrier should be constructed of a material with a minimum Sound Transmission Class (STC) 20 rating with no gaps or perforations and remain in place until the conclusion of demolition, grading, and construction activities.

- The project applicant shall notify residences within 100 feet of the project's property line in writing within one week of any construction activity such as demolition, hard rock handling, concrete sawing, asphalt removal, and/or heavy grading operations. The notification shall describe the activities anticipated, provide dates and hours, and provide contact information with a description of a complaint and response procedure.

- The on-site construction supervisor shall have the responsibility and authority to receive and resolve noise complaints. A clear appeal process for the affected resident shall be established prior to construction commencement to allow for the resolution of noise problems that cannot be immediately solved by the site supervisor.

4.1.2 Operational On-site Noise Generation

The Project would result in a significant impact related to on-site operational noise if it exceeded the property line limits provided in the City Municipal Code (see Table 2). The project site is zoned industrial, which has a 75 dBA L_{EQ} limit as measured at nearby property lines for all hours. However, the project's noise would be limited to the arithmetic mean between the industrial zoning limits and neighboring zones' limits.

The neighboring property west of the Project site is residential use within a commercial zone. To the northwest across Lusk Boulevard are land uses zoned as Open Space/Conservation Zone. To the north and northeast across Lusk Boulevard are land uses zoned as industrial. Directly to the south are land uses zoned as Mixed-Use. Figure 5, *Modeled Receiver Locations & Generator Locations*, provides the modeled receiver locations and corresponding land use zoning designation.

Although the zoning to the west of the project site is commercial, because the use is exclusively residential, the limits for residential (60 dBA L_{EQ}) are applied. In accordance with the Municipal Code, the arithmetic mean between the industrial and residential uses is 67.5 dBA L_{EQ} for daytime hours, and 62.5 dBA L_{EQ} for nighttime hours.

The properties south of the Project site are within a mixed-use zone. The arithmetic mean for industrial and commercial noise limits is 70 dBA L_{EQ} for daytime hours, and 67.5 dBA L_{EQ} for nighttime hours. The applicable noise limit at the northwestern open space is 75 dBA L_{EQ} for daytime and nighttime hours.

4.1.2.1 HVAC

As described in Section 3.2.2, the Project's on-site operational noise sources would include rooftop HVAC units. Since specifications for HVAC units were not available, it was assumed that HVAC units would be rooftop-mounted Carrier 50PG12 condensers.

HVAC units are anticipated to be located on the building rooftop, approximately 100 feet from nearby property lines. At this distance, 116 HVAC units mounted on the rooftop of Building L4 were modeled to generate an hourly noise level of approximately 40 dBA L_{EQ}. This noise level does not consider the addition of architectural parapets along the rooftop that would reduce noise levels further. Therefore, the Project's HVAC units would not result in noise levels exceeding the southern property line's nighttime limits of 67.5 dBA L_{EQ} and impacts would be less than significant.

4.1.2.2 Emergency Generators

As noted in Section 3.2.2.2, six emergency generators would be provided. Although noise generated during use in an emergency is typically exempt from noise ordinances, periodic testing would be required and is anticipated to occur monthly for 30 minutes, and once per year for four hours. One generator would be tested at a time. The generators were assumed to be Kohler KD2500 to provide an estimate of future noise levels.

The location of the generators is shown on Figure 3. The generator for parking garage LP1 is approximately 70 feet from the western property line. The generator for parking garage LP2 is approximately 140 feet from the southern property line and 140 feet from the property north of the project site across Lusk Boulevard. The office building generators would be installed approximately 90 and 115 feet from the southern property line, within the exterior service yard areas.

For the purposes of this analysis, the Kohler KD2500's Level 1 sound enclosure was considered. With the Level 1 enclosure, a single generator is measured to result in noise levels of up to 90 dBA L_{EQ} at 23 feet. (Appendix B). For this analysis, eight receiver locations were modeled to represent the adjacent land uses. These locations are shown in Figure 5.

The project includes six barriers, as shown in Figure 6, *Generator Barrier Locations*. The height of each barrier is provided in Table 9, *Generator Barrier Specifications.*

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Source: Aerial Photo (SanGIS, 2023); Zoning (City of San Diego)

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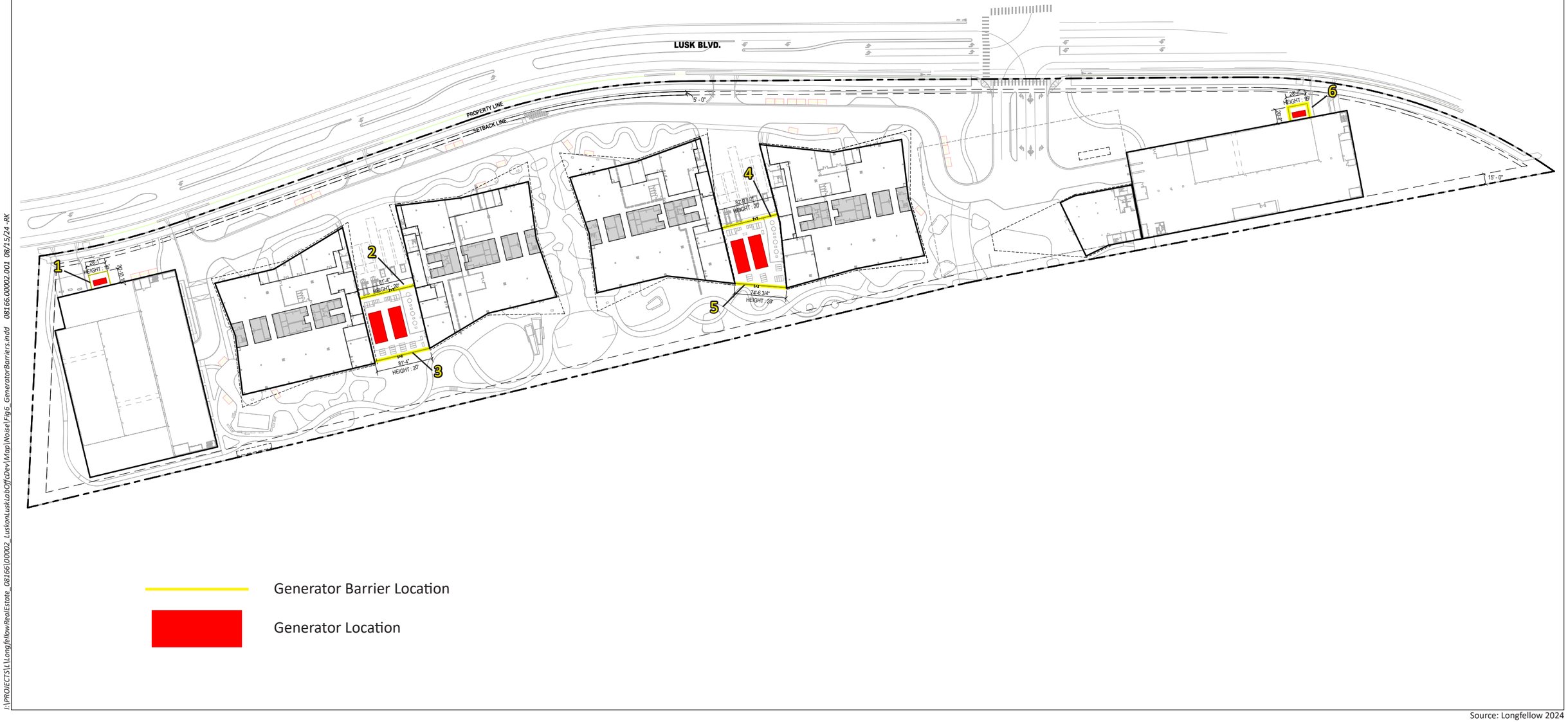
Modeled Receiver Locations & Generator Locations

Figure 5



Source: Longfellow 2024

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Generator Barrier Locations

Figure 6

Table 9
GENERATOR BARRIER SPECIFICATIONS

Barrier	Barrier Height (feet)
Barrier 1	15
Barrier 2	20
Barrier 3	20
Barrier 4	20
Barrier 5	20
Barrier 6	15

Table 10, *Applicable Receiver Noise Limits - Daytime* provides the applicable noise limits at each modeled receiver location based on the corresponding land use zoning designation during generator testing. Generator testing would be limited to daytime hours.

Table 10
APPLICABLE RECEIVER NOISE LIMITS - DAYTIME

Receiver	Land Use Zone	Compliance Threshold (dBA)
R1	Residential in a Commercial Zone CC-1-3	67.5[1]
R2	Open Space/Conservation Zone OC-1-1	75[2]
R3	Open Space/Conservation Zone OC-1-1	75
R4	Industrial Zone IL-2-1	75
R5	Industrial Zone IL-3-1	75
R6	Industrial Zone IL-2-1	75
R7	Mixed-Use Zone EMX-1	70[3]
R8	Mixed-Use Zone EMX-1	70[3]

1 Arithmetic mean of 75 dBA (Industrial) and 60 dBA (All other residential) noise limits.
2 Due to the absence of a specific noise limit for open space and visible sensitive noise receivers, the project site's noise limit was applied to this land use.
3 Arithmetic mean of 75 dBA (Industrial) and 65 dBA (Commercial) noise limits.

Table 11, *Generator Noise Levels*, provides the resulting sound levels with the planned barrier specifications.

Table 11
GENERATOR NOISE LEVELS

Receiver	Noise Level (dBA)	Compliance Threshold (dBA)	Exceeds Threshold?
R1	63.6	67.5	No
R2	59.2	75.0	No
R3	53.6	75.0	No
R4	51.4	75.0	No

Receiver	Noise Level (dBA)	Compliance Threshold (dBA)	Exceeds Threshold?
R5	58.7	75.0	No
R6	56.2	75.0	No
R7	63.7	70.0	No
R8	62.4	70.0	No

As shown in Table 11, the proposed generators would comply with the applicable noise limits with the planned barriers, and impacts would be less than significant.

4.2 THRESHOLD 2: EXPOSURE TO INCOMPATIBLE NOISE LEVELS

Would the project expose people to noise levels which exceed the City's adopted noise ordinance or are incompatible with Table K-4 of the City's CEQA Thresholds?

4.2.1 Exterior Noise Levels

Table K-4 of the City's Thresholds indicates that exterior noise levels of up to 65 CNEL are compatible with office land uses but do not contain a specific compatibility level for research and development land uses. The General Plan Noise Element land use compatibility criteria (see Table 1) specifies exterior noise levels up to 70 CNEL as compatible and up to 75 CNEL as conditionally compatible with research and development land uses.

Exterior use areas are proposed in the southern portion of the Project site, primarily south of the proposed buildings, which would provide shielding from traffic noise. The nearest exterior use area to Lusk Boulevard is at the east side of building L4 and approximately 200 feet from the roadway centerline of Lusk Boulevard. TNM was used to calculate traffic noise levels at this location. At 210 feet from Lusk Boulevard, traffic noise levels were calculated to be 56.6 CNEL under the opening year plus Project scenario. Combined with aircraft noise from MCAS Miramar, exterior noise levels at this location are anticipated to be 62.1 CNEL. This is an acceptable exterior noise level for office uses per Table K-4 of the City and is compatible with the research and development land use criteria in the General Plan Noise Element. Therefore, the Project would not expose people to incompatible noise levels within exterior use areas, and impacts would be less than significant.

4.2.2 Interior Noise Levels

An Environmental Noise Study (RGD Acoustics 2022) was prepared for the project to address exterior-to-interior noise levels of the project buildings. The study identified that noise generated from traffic is subject to CALGreen standards of 50 dBA L_{EQ} and 50 CNEL from the City of San Diego General Plan. The project would implement the acoustical performance recommendations from that report, and interior noise levels would, therefore, be compatible with the requirements set forth by the City's General Plan.

4.3 THRESHOLD 3: TRANSPORTATION NOISE

Would the project expose people to current or future transportation noise levels which exceed standards established in the Transportation Element of the General Plan or an adopted airport Comprehensive Land Use Plan?

4.3.1 Off-site Transportation Noise

According to the City CEQA Thresholds, a significant impact related to traffic-generated noise would occur if the Project would generate increases of 3 dB CNEL in traffic noise where exterior noise levels exceed 65 CNEL at residential, school, library, hospital, daycare, hotel/motel, park, or convalescent home land uses; 70 CNEL at offices, churches, businesses, or other professional uses; or exceed 75 CNEL at commercial, retail, industrial, or outdoor spectator sport land uses. The Project's exposure to aircraft transportation noise is discussed in Threshold 4 below.

The Project would generate vehicular traffic in the Project vicinity and has the potential to increase traffic noise levels along nearby roadways. The Project is expected to generate 9,186 new trips, the distribution of which is detailed in Table 7.

TNM software was used to calculate noise levels at various receptors for the opening year and opening year plus, Project conditions along the affected roadways. The following traffic noise modeling represents a conservative analysis that does not consider topography or attenuation provided by existing structures. The results of the traffic noise analysis are shown below in Table 12, *Off-site Traffic Noise* Levels, which presents the CNEL at the distance between the roadway centerline and nearby structures under opening year and opening year plus Project conditions.

Table 12
OFF-SITE TRAFFIC NOISE LEVELS

Roadway Segment	Distance to Nearest Building (feet)	CNEL at Distance (Opening Year)	CNEL at Distance (Opening Year + Project)	Change with Project (CNEL)
Sorrento Valley Boulevard				
Roselle Street to Vista Sorrento Parkway	70	67.7	68.0	+0.3
Lusk Boulevard				
Vista Sorrento Parkway to Wateridge Circle	75	65.6	66.3	+0.7
Wateridge Circle to Pacific Center Boulevard	60	66.4	67.3	+0.9
Pacific Center Boulevard to Barnes Canyon Road	60	67.0	68.4	+1.4
Barnes Canyon Road to Mira Mesa Boulevard	115	62.6	63.2	+0.6
Barnes Canyon Road				
Scranton Road to Lusk Boulevard	65	61.8	62.8	+1.0
Scranton Road				
Barnes Canyon Road to Mira Sorrento Place	60	63.3	64.1	+0.8
Mira Sorrento Place				
Vista Sorrento Parkway to Scranton Road	80	62.0	62.5	+0.5
Pacific Heights Boulevard				
Barnes Canyon Road to Mira Mesa Boulevard	80	63.2	63.5	+0.3
Mira Mesa Boulevard				
Vista Sorrento Parkway to Scranton Road	120	69.4	69.5	+0.1
Scranton Road to Lusk Boulevard	100	69.4	69.5	+0.1
Pacific Heights Boulevard to Flanders Drive	120	68.1	68.3	+0.2
Flanders Drive to Camino Santa Fe	90	69.5	69.7	+0.2
Camino Santa Fe to Parkdale Avenue	65	74.3	74.4	+0.1
Parkdale Avenue to Reagan Road	55	75.4	75.5	+0.1

Roadway Segment	Distance to Nearest Building (feet)	CNEL at Distance (Opening Year)	CNEL at Distance (Opening Year + Project)	Change with Project (CNEL)
Reagan Road to Camino Ruiz	65	72.7	72.8	+0.1
Camino Ruiz to New Salem Street (Marauder Way)	75	69.2	69.3	+0.1
New Salem Street (Marauder Way) to Westonhill Drive	60	72.7	72.8	+0.1
Westonhill Drive to Greenford Drive	60	72.7	72.8	+0.1

Sources: USDOT 2004; LLG 2023
CNEL = Community Noise Equivalent Level

As shown in Table 9, traffic noise levels along roadway segments with the addition of Project-generated traffic would increase by up to 1.4 CNEL. Since the addition of Project-generated traffic would not result in a perceptible change (3 CNEL) in traffic noise levels, the City's traffic noise threshold would not be exceeded. Impacts related to traffic noise would be less than significant.

4.4 THRESHOLD 4: AIRPORT NOISE COMPATIBILITY

Would the project result in land uses which are not compatible with aircraft noise levels as defined by an adopted airport Comprehensive Land Use Plan?

4.4.1 Aircraft Noise

The City's Thresholds indicate that proposed NSLUs, such as residences, hospitals, and schools, subject to airport noise levels greater than 65 CNEL must undergo a noise study to determine if mitigation is required. As the Project does not propose an NSLU, no further analysis related to aircraft noise is required.

The adopted ALUCP for MCAS Miramar specifies that noise levels of up to 70 dB CNEL are compatible with research, and development land uses and noise levels between 70 and 80 dB CNEL are conditionally compatible, provided interior noise levels do not exceed 50 dB CNEL. The Project site is located within the 60 to 65 dB CNEL contour for MCAS Miramar and would not be subject to incompatible noise levels from aircraft noise, as defined by the ALUCP for research and development land uses (San Diego County Airport Land Use Commission 2008). Therefore, no impact would occur.

5.0 LIST OF PREPARERS

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Appendix A

HVAC Sound Data

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.

Appendix B

Generator Sound Data

KOHLER CO., Kohler, Wisconsin 53044 USA
Phone 920-457-4441, Fax 920-459-1646
For the nearest sales and service outlet in the US and Canada, phone 1-800-544-2444
KOHLERPower.com

Enclosure and Subbase Fuel Tank Specifications, continued

Fuel Tank Capacity, L (gal.)	Est. Fuel Supply Hours at 60 Hz with Full Load (nominal)	Max. Dimensions, mm (in.)			Max. Weight, † kg (lb.)	Fuel Tank Height, mm (in.)	Sound Pressure Level at 60 Hz with Full Load, dB(A) ‡
		Length	Width §	Height			
KD2000/2250/2500 SL1 Sound Enclosure with Internal Silencers and State Code Subbase Fuel Tank *							
Lifting Base	0	10774 (424)	3488 (137)	4141 (163)	33073 (72909)	—	90
8577 (2266)	15/14/13	11465 (451)		4522 (178)	40485 (89252)	381 (15)	
14130 (3733)	25/22/22			4700 (185)	41216 (90861)	559 (22)	
16451 (4346)	29/26/25			4776 (188)	41497 (91483)	635 (25)	
KD2000/2250/2500 SL2 Sound Enclosure with Internal Silencer and State Code Subbase Fuel Tank *							
Lifting Base	0	12766 (503)	3488 (137)	4141 (163)	35121 (77426)	—	78
8577 (2266)	15/14/13	13491 (531)		4522 (178)	42533 (93766)	381 (15)	
14130 (3733)	25/22/22			4700 (185)	43264 (95378)	559 (22)	
16451 (4346)	29/26/25			4776 (188)	43545 (95997)	635 (25)	
KD2500-4 SL2 Sound Enclosure with Internal Silencer and State Code Subbase Fuel Tank ▲⁂							
14130 (3733)	21	13491 (531)	3488 (137)	4907 (193)	43583 (96084)	559 (22)	78

***** Data in table is for reference only. Height includes enclosure, lift base, and tank (if equipped). Refer to your authorized Kohler distributor for enclosure and sub-base fuel tank specification details.

▲ Tier 4 generator enclosure height includes the lift base, tank, and enclosure up to the exhaust flange. The height does not include the exhaust collector, SCR, or the SCR inlet and outlet pipes.

⁂ Tier 4 generator enclosure weight includes the DEF tank but does not include the exhaust collector, SCR, or SCR inlet and outlet pipes.

† Max. weight includes the generator set (wet) with the largest alternator option, enclosure, silencers, lift base, and tank (no fuel).

‡ Log average sound pressure level of 8 measured positions around the perimeter of the unit at a distance of 7 m (23 ft.). Refer to TIB-114 for details. Enclosed generator set sound data for some models was not available at time of print.

§ An additional 940 mm (37 inches) of clearance on each side for opening and closing the access doors is recommended.

NOTE: If the Est. Fuel Supply Hours column shows more than one number, the numbers represent each model in that range.

DISTRIBUTED BY:

Availability is subject to change without notice. Kohler Co. reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. Contact your local Kohler® generator set distributor for availability.

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Enclosure and Subbase Fuel Tank Specifications (continued)

Fuel Tank Capacity, L (gal.)	Est. Fuel Supply Hours at 60 Hz with Full Load, Nominal/ Actual	Enclosure and Subbase Fuel Tank					Fuel Tank Height (or additional skid height with no tank), mm (in.)	Sound Pressure Level at 60 Hz with Full Load, Weather/ Sound, dB(A)‡
		Max. Dimensions, mm (in.)			Max. Weight, kg (lb.) *			
		Length	Width	Height	With Steel Enclosure	With Aluminum Enclosure		
230REOZJE Standard Fuel Tank								
No Tank	0	4121 (162.3)	1338 (52.7)	2153 (84.8)	2654 (5850)	2540 (5600)	260 (10)	87/75
1787 (472)	24/29			2655 (104.5)	3561 (7850)*	3447 (7600)*	762 (30)	
230REOZJE State Code Fuel Tank ‡								
2101 (555)	24/34	5009 (197.2)	1338 (52.7)	2894 (113.9)	3895 (8587)*	3782 (8337)*	635 (25)	87/75
3573 (944)	48/58	5325 (209.7)		3173 (124.9)	4504 (9930)*	4391 (9680)*	914 (36)	
250REOZJE Standard Fuel Tank								
No Tank	0	4121 (162.3)	1338 (52.7)	2153 (84.8)	2699 (5950)	2585 (5700)	260 (10)	89/75
1787 (472)	24/26			2655 (104.5)	3606 (7950)*	3493 (7700)*	762 (30)	
250REOZJE State Code Fuel Tank ‡								
2101 (555)	24/31	5009 (197.2)	1338 (52.7)	2894 (113.9)	3940 (8687)*	3827 (8437)*	635 (25)	89/75
3573 (944)	48/53	5325 (209.7)		3173 (124.9)	4550 (10030)*	4436 (9780)*	914 (36)	
275REOZJE Standard Fuel Tank								
No Tank	0	4121 (162.3)	1338 (52.7)	2153 (84.8)	2835 (6250)	2722 (6000)	260 (10)	89/75
1787 (472)	24/24			2655 (104.5)	3742 (8250)*	3629 (8000)*	762 (30)	
275REOZJE State Code Fuel Tank ‡								
2101 (555)	24/28	5009 (197.2)	1338 (52.7)	2894 (113.9)	4076 (8987)*	3963 (8737)*	635 (25)	89/75
3573 (944)	48/48	5325 (209.7)		3173 (124.9)	4686 (10330)*	4572 (10080)*	914 (36)	
300REOZJ Standard Fuel Tank								
No Tank	0	4121 (162.3)	1338 (52.7)	2153 (84.8)	2835 (6250)	2722 (6000)	260 (10)	89/75
2067 (546)	24/24			2731 (107.5)	3770 (8311)*	3656 (8061)*	838 (33)	
300REOZJ State Code Fuel Tank ‡								
2101 (555)	24/25	5009 (197.2)	1338 (52.7)	2894 (113.9)	4076 (8987)*	3963 (8737)*	635 (25)	89/75
4065(1074)	48/48	5588 (220.0)		3173 (124.9)	4644 (10238)*	4530 (9988)*	914 (36)	

Note: Data in table is for reference only, refer to the respective ADV drawings for details.

***** Max. weight includes the generator set (wet) using the largest alternator option, enclosure with acoustic insulation added, silencer, and tank (no fuel).

‡ State code fuel tank specifications (height and weight) include I-beam option.

† Log average sound pressure level of 8 measured positions around the perimeter of the unit at a distance of 7 m (23 ft). Refer to TIB-114 for details.

Appendix C

Construction Noise Model Output

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 4/27/2023
Case Description: Lusk on Lusk

				---- Receptor #1 ----	
		Baselines (dBA)			
Description	Land Use	Daytime	Evening	Night	
Residences	Residential	50	50	50	

Equipment						
Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	40	0
Front End Loader	No	40		79.1	40	0
Welder / Torch	No	40		74	40	0
Scraper	No	40		83.6	40	0
Roller	No	20		80	40	0
Pumps	No	50		80.9	40	0
Paver	No	50		77.2	40	0
Man Lift	No	20		74.7	40	0
Jackhammer	Yes	20		88.9	40	0
Grader	No	40	85		40	0
Gradall	No	40		83.4	40	0
Generator	No	50		80.6	40	0
Dump Truck	No	40		76.5	40	0
Dozer	No	40		81.7	40	0
Crane	No	16		80.6	40	0
Concrete Saw	No	20		89.6	40	0
Concrete Pump Truck	No	20		81.4	40	0
Concrete Mixer Truck	No	40		78.8	40	0
Compressor (air)	No	40		77.7	40	0
Compactor (ground)	No	20		83.2	40	0
Backhoe	No	40		77.6	40	0
All Other Equipment > 5 HP	No	50	85		40	0

Results

Calculated (dBA)

Equipment	*Lmax	Leq
Excavator	82.6	78.7
Front End Loader	81	77.1
Welder / Torch	75.9	72
Scraper	85.5	81.5
Roller	81.9	74.9
Pumps	82.9	79.9
Paver	79.2	76.1
Man Lift	76.6	69.6
Jackhammer	90.8	83.8
Grader	86.9	83
Gradall	85.3	81.4
Generator	82.6	79.6
Dump Truck	78.4	74.4
Dozer	83.6	79.6
Crane	82.5	74.5
Concrete Saw	91.5	84.5
Concrete Pump Truck	83.3	76.3
Concrete Mixer Truck	80.7	76.8
Compressor (air)	79.6	75.6
Compactor (ground)	85.2	78.2
Backhoe	79.5	75.5
All Other Equipment > 5 HP	86.9	83.9

*Calculated Lmax is the Loudest value.