NOISE STUDY

LINCOLN INDUSTRIAL DEVELOPMENT
7441 LINCOLN WAY
APN 0131-021-026
GARDEN GROVE, CALIFORNIA 92841

LEAD AGENCY:

CITY OF GARDEN GROVE
PLANNING SERVICES DIVISION
11222 ACACIA PARKWAY
GARDEN GROVE, CA 92841

REPORT PREPARED BY:

BLODGETT BAYLOSIS ENVIRONMENTAL PLANNING
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APRIL 24, 2025
GGRO 019

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APPENDICES

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1. OVERVIEW OF THE PROPOSED PROJECT

This Study analyzes the noise impacts associated with the construction and subsequent operation of a warehouse development within a 2.15-acre (93,841 square foot) site. The project site is currently developed with a two-story office building, consisting of 43,946 square feet of floor area, within a multi-parcel office-industrial complex. The proposed project would involve the demolition of the existing building and the construction of a 50,300 square foot, Type III-B warehouse building, as well as associated parking and landscaping. The proposed warehouse would include a 5,000 square foot office of which 3,500 square feet would be a mezzanine. The maximum height of the warehouse building would be 46 feet. In total, 52 parking spaces would be provided as well as six truck loading docks. The loading docks and rear parking area would be gated and would be accessed through an automatic gate. Based on the trip generation summary conducted by Urban Crossroads Inc, a total of 32 trucks would service the warehouse daily, including six two-axle trucks, six three-axle trucks, and 20 four-axle trucks. Access to the site would be provided by one, 40-foot driveway connection and an internal drive aisle connected to the adjacent parcels in the business park complex. As part of the site improvements, an existing driveway connection to the north side of Lincoln Way would be removed to accommodate the proposed building. Landscaping would total 12,010 square feet, an eight-foot-tall tilt-up wall and would also include tubular steel fencing and security lighting.

2. PROJECT LOCATION

The project site is located in the western portion of the City of Garden Grove. The project site's address is 7441 Lincoln Way. The site's latitude/longitude is 33°47'55.54"N and 118°16'09.4"W. The assessor's parcel number (APN) that is applicable to the project site is 0131-021-26. Regional access to the site would be provided by the SR-22 located approximately 1.75 miles south of the site. Vehicular access to the proposed project site would be provided by a proposed 40-foot-wide driveway connection with the west side of Western Avenue as well as an internal driveway connecting with the adjacent parcel to located to the west. A project location map is provided in Exhibit 2.

3. ENVIRONMENTAL SETTING

The project site is located within the corporate boundaries of the City of Garden Grove. The proposed project site is located on a 2.15-acre (93,841 square foot) site that is currently developed with a two-story multi-tenant office building consisting of 43,946 square feet of floor area. The site is approximately 89 feet above sea level and the site's topography is level. The project site is located within a business park located in an urbanized industrial setting and no native vegetation or habitat is present within or in the vicinity of the project site. The site is part of the Irvine Industrial Complex as described in Planned Unit Development (PUD) 103-76, as an area for light manufacturing, assembly, laboratories, warehousing, and construction industries. The project site is zoned Planned Unit Development No. PUD 103-76 and has a General Plan land use designation of Industrial. Land uses and development located in the vicinity of the proposed project site are outlined below:

- ● *North of the project site:* Multifamily residences (7410 Carie Lane to 11257 Western Avenue) are located along the north of the project site. The property currently has a Zoning land use designation of High Density Residential (RH) and a Land Use Designation of High Density Residential in the City of Stanton.[1]

[1] Google Maps and City of Stanton Zoning Map.

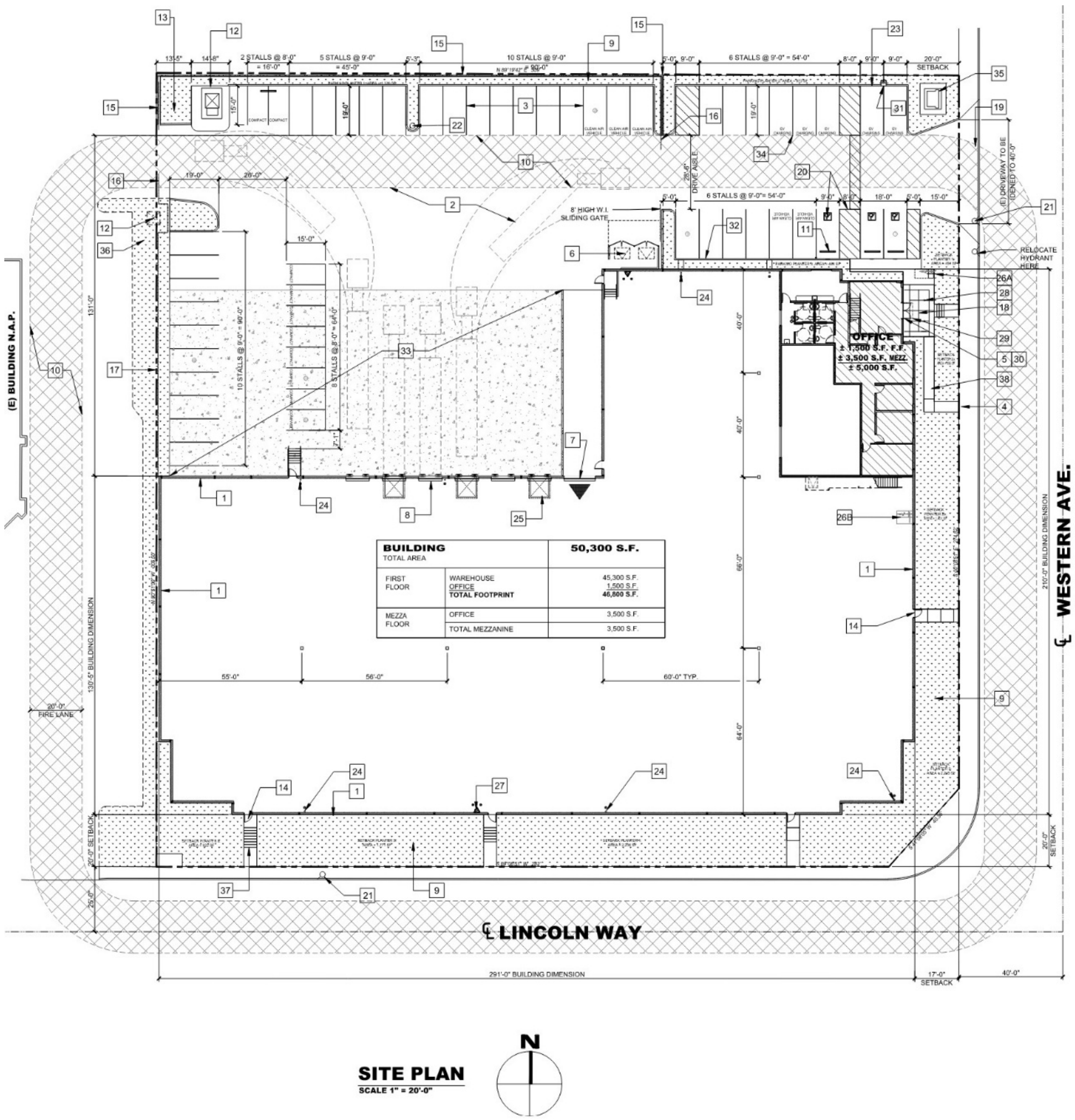

EXHIBIT 1 PROJECT SITE PLAN

SOURCE: O.C. DESIGN & ENGINEERING

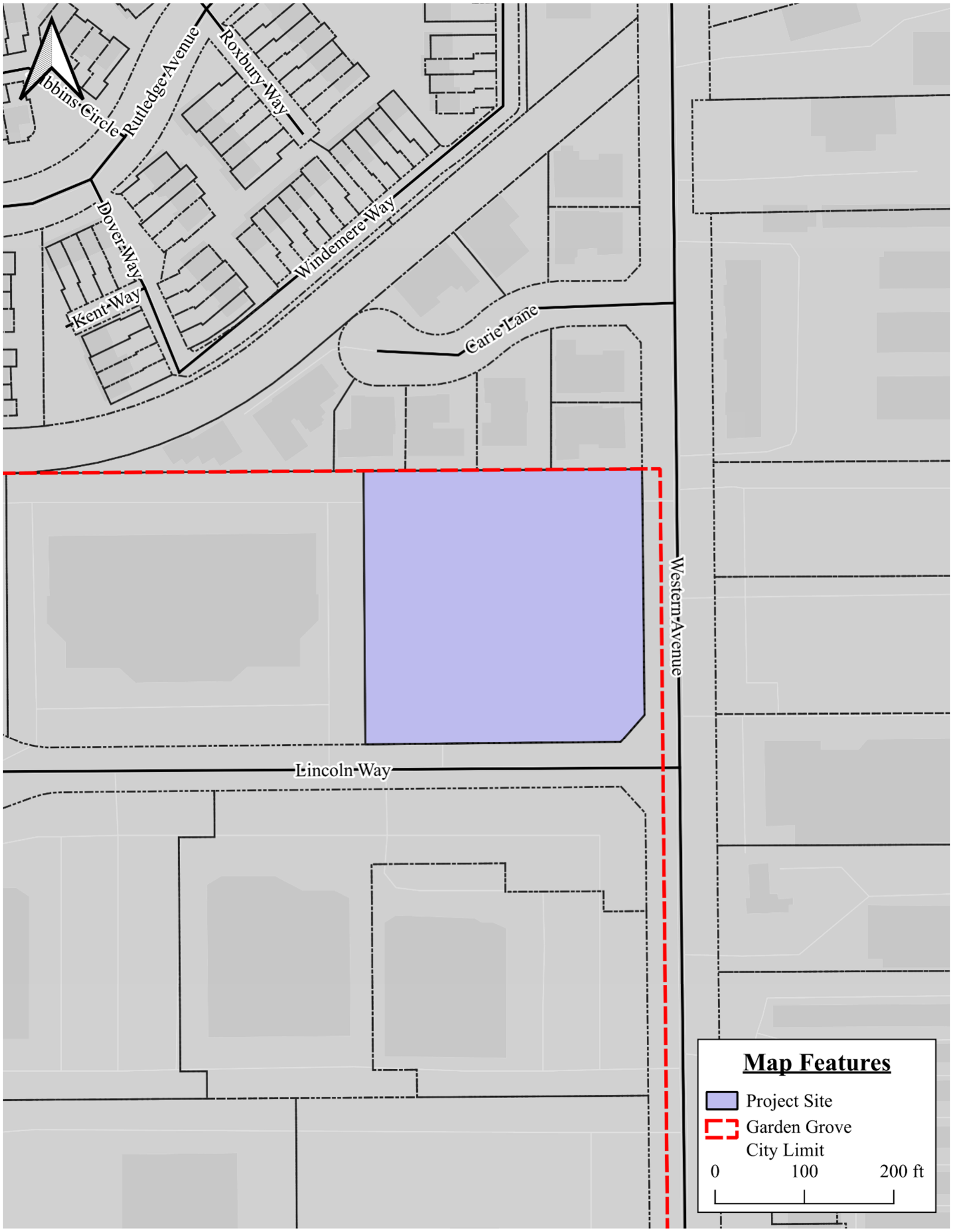

EXHIBIT 2 PROJECT LOCATION

SOURCE: BLODGETT BAYLOSIS ENVIRONMENTAL PLANNING

- *South of the project site:* Lincoln Way extends across the south of the project site. A warehouse building (7390 Lincoln Way) is located further south of Lincoln Way. However, at the time of this document's creation, the site is still under construction. This site is zoned Planned Unit Development No. PUD 103-76 and has a Land Use designation of Industrial.[2]
- *West of the project site:* A multi-tenant industrial building (7373 and 7391 Lincoln Way) is located to the west of the project site. This site is zoned Planned Unit Development No. PUD 103-76 and has a Land Use designation of Industrial.[3]
- *East of the project site:* Western Avenue extends along the east of the project site. The CR & R Recycling Facility (11292 Western Avenue) is located further east of Western Avenue. The property currently has a Zoning land use designation of Industrial General (IG) and a Land Use Designation of Industrial in the City of Stanton.[4]

4. PHYSICAL CHARACTERISTICS OF THE PROPOSED PROJECT

The key physical elements of the proposed project are outlined below.

- *Site Plan*. Site Plan. The existing two-story 43,946-square-foot office building would be demolished to allow for the construction of the proposed project. Additionally, the parking area would be modified and an existing driveway connection to Lincoln Way would be removed to accommodate the new development.[5]
- *Warehouse Building*. The "L" shaped warehouse building would have a total floor area of 50,300 square feet and a footprint of 46,800 square feet. The maximum height of the warehouse would be 46 feet. The building would be located in the southeastern portion of the site, along the front and side setbacks of the site. The first floor of the warehouse would include 45,300 square feet of warehouse space and 1,500 square feet of office within the northeast corner of the building. The mezzanine floor would be located above the office and includes 3,500 square feet of additional office space. The six loading docks would be located along the north façade of the building within the gated parking lot.
- *Access and Circulation*. Primary vehicular access to the proposed project would be provided by a 40-foot-wide driveway connection to the west side of Western Avenue. Secondary access to the site would be through a 24-foot-wide internal drive aisle connection to the rest of the business park that also connects to Lincoln Avenue. The driveway connection from Western Avenue leads directly into the internal drive aisle, however, a portion of the road connected to the loading area and rear parking lot is gated.
- *Parking*. Vehicle parking would be provided in a public and gated lot. A total of 52 parking spaces are provided for the project site of which 18 spaces are located within the public parking spaces and 34 spaces are within the gated area. In total there would be five spaces EV charging, five clean air vehicle spaces, three ADA spaces, and 10 compact spaces.

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[2] Google Maps and City of Garden Grove Zoning Map.

[3] Ibid.

[4] Google Maps and City of Stanton Zoning Map.

[5] O.C. Design & Engineering. Site Plan. Sheet A100. July 23, 2024.

- *Landscaping*. The total landscaping area would be 12,010 square feet or 12% of the site area. The landscaping would be located along the setbacks and parking areas. An 8-foot-tall tilt-up wall and tubular fence would extend along the northern and western boundaries of the property.

5. NOISE THRESHOLDS OF SIGNIFICANCE AND METHODOLOGY

As set forth in Appendix G of the CEQA Guidelines, a project may be deemed to have a significant impact on noise if it results in any of the following:

- The proposed project would result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- The proposed project would result in the generation of excessive ground borne vibration or ground borne noise levels.
- For a proposed project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

6. CHARACTERISTICS OF NOISE

Sound is mechanical energy transmitted by pressure waves through the air and is characterized by various parameters that include sound frequency, the speed of propagation, and the pressure level or energy content (amplitude). Noise is most often defined as unwanted sound. Noise levels may be described using a number of methods designed to evaluate the "loudness" of a particular noise. The most commonly used unit for measuring the level of sound is the decibel (dB). Zero on the decibel scale represents the lowest limit of sound that can be heard by humans. At the other extreme, the eardrum may rupture at 140 dB. The human ear can detect changes in sound levels greater than 3.0 dBA under normal ambient conditions.[6] Changes of less than 3.0 dB are noticeable to some people under quiet conditions while changes of less than 1.0 dB are only discernible by few people under controlled, extremely quiet conditions.

In general, an increase of between 3.0 dB and 5.0 dB in the ambient noise level is considered to represent the threshold for human sensitivity. Noise levels may also be expressed as dBA where an “A” weighting has been incorporated into the measurement metric to account for increased human sensitivity to noise. The A-weighted measurements correlate well with the perceived noise levels at lower frequencies. Noise levels associated with various activities are shown in Exhibit 3.

Noise may be generated from a point source, such as machinery, or from a line source, such as a roadway segment containing moving vehicles. Because the area of the sound wave increases as the sound gets further and further from the source, less energy strikes any given point over the surface area of the wave. This phenomenon is known as “spreading loss.” Due to spreading loss, noise attenuates (decreases) with distance. Stationary, or point, noise subject to spreading loss experiences a 6.0 dBA reduction for every doubling of the distance beginning with the initial 50-foot distance.[7] Noise emanating from travelling

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[6] Bolt, Beranek and Newman, Inc., *Fundamentals and Abatement of Highway Traffic Noise*, Report No. PB-222-703. June 1973.
[7] United States Department of Transportation – Federal Highway Administration. *Transit Noise and Vibration Impact Assessment Manual*. Report dated September 2018.

vehicles, also referred to as a line source, decreases by approximately 3.0 dBA 50 feet from a source over a hard, unobstructed surface such as asphalt, and by approximately 4.5 dBA over a soft surface, such as vegetation. For every doubling of distance thereafter, noise levels drop another 3.0 dBA over a hard surface and 4.5 dBA over a soft surface.[8]

Time variation in noise exposure is typically expressed in terms of the average energy over time (called Leq), or alternatively, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50% of the time. Half the time the noise level exceeds this level and half the time the noise level is less than this level. Other values that are typically noted during a noise survey include the L_{min} and L_{max} that represent the minimum and maximum noise levels obtained over a given period, respectively.

7. CITY OF GARDEN GROVE NOISE CONTROL REGULATIONS

The following noise standards are located within the City of Garden Grove Municipal Code, Section 8.47.040, Ambient Base Noise Levels. For commercial or industrial land uses located within 150 feet of residential uses, the 65 dB(A) level represents the standard between 7:00 a.m. to 10:00 p.m. and the 50 dB(A) level represents the standard between 10:00 p.m. to 7:00 a.m. Per Garden Grove Municipal Code Section 9.47.050(C), the following limits have been established based on the duration of the noise level.

- The noise standard for a cumulative period of more than thirty (30) minutes in any hour;
- The noise standard plus five dB(A) for a cumulative period of more than fifteen (15) minutes in any hour; or
- The noise standard plus ten dB(A) for a cumulative period of more than five minutes in any hour; or
- The noise standard plus fifteen (15) dB(A) for a cumulative period of more than one minute in any hour; or
- The noise standard plus twenty (20) dB(A) for any period of time. Section 8.47.060, Special Noise Sources, of the City's Municipal Code prevents loading and unloading of any vehicle or operating wheeled equipment between the hours of 10:00 p.m. and 7:00 a.m. within commercial or industrial areas that abut any residential property.

[8] Ibid.

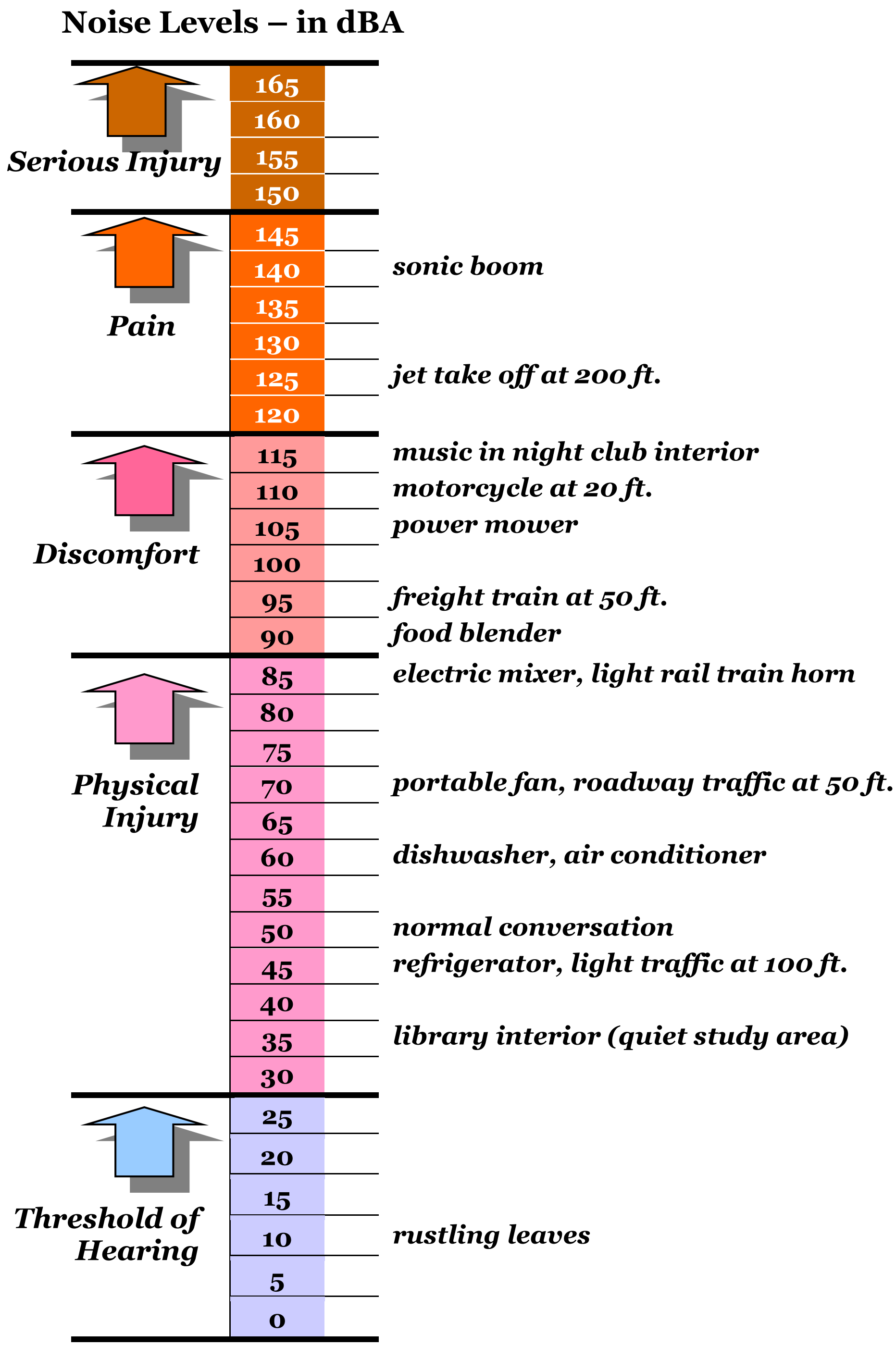

EXHIBIT 3 TYPICAL NOISE LEVELS

SOURCE: BLODGETT BAYLOSIS ENVIRONMENTAL PLANNING

2. EXISTING AMBIENT NOISE ENVIRONMENT

An *Extec* Digital Sound Meter was used to conduct the on-site noise measurements. The noise levels were measured using the decibel (dB) metric. The dBA metric uses an "A" frequency weighting to allow for increased sensitivity during the night-time and early morning periods. For purposes of this analysis, the decibel (dB) metric and dBA metric should be considered the same. The noise meter was calibrated using an "A" weighting with the slow response setting.

A series of 100 discreet noise measurements were recorded on February 11, at 2:50 PM within a 30-minute time period at the project site (7441 Lincoln Way). The Noise Measurement Worksheets are contained in Appendix F. The average ambient noise level was recorded at dBA, with the main source of ambient noise coming from nearby traffic noise on Western Avenue. The sound meter was placed within the rear parking lot, approximately 82 feet from the eastern boundary of the site and approximately 45 feet from the northern boundary of the site (See Exhibit 4). The measurements were captured five feet above the ground surface. Table 1 indicates the variation in noise levels over time during the measurement period. As indicated previously, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time. Half the time the noise level exceeds this level and half the time the noise level is less than this level. The average noise levels during the measurement period was 65.2 dBA.

TABLE 1 NOISE MEASUREMENT RESULTS

Noise Metric	Noise Level (dBA)
L_{max} (Maximum Noise Level)	75.1
L_{99} (Noise levels <99% of time)	74.2
L_{90} (Noise levels <90% of time)	70.4
L_{75} (Noise levels <75% of time)	67.9
L_{min} (Minimum Noise Level)	64.7
Average Noise Level	65.2

Source: Blodgett Baylosis Environmental Planning

9. CONSTRUCTION NOISE IMPACTS

Most construction noise would occur during site preparation, grading, and building construction when heavy equipment would be operating. Noise levels during construction would be an accumulation of equipment operation at varying locations within the construction site. The construction equipment within the project site would be limited to smaller trucks, loaders, pavers, and forklifts (the existing parking area has been graded and is level. The FTA General Assessment for construction noise sets a maximum criteria for construction noise before the adverse community reaction. This threshold is 90dbA during the daytime for residential receptors. It is important to note that this equipment will be used intermittently during daytime periods only. The project's construction noise levels were estimated using the Federal Highway Administration's (FHWA) Roadway Construction Noise Model Version 1.1. The distance used between the construction activity and the nearest sensitive receptors was set at 50 feet. This figure was derived from the distance of proposed building to the northern property line, approximately 75 feet, as well as a 25 foot buffer to allow for maneuvering room for the construction vehicles. . The model assumes a 10.0 dBA reduction due to attenuation from the existing walls running along the borders of the adjacent residential properties. The construction noise modeling was executed for the demolition phase, site preparation phase; the grading phase; the building construction phase; the paving phase, and the architectural coating phase. The results of the construction noise modeling are presented in Table 2 below. As shown in Table 2, the noisiest phases of project construction would be the demolition, site preparation, and grading phase. Assuming a worst-case scenario where every piece of construction equipment was active simultaneously, the maximum total noise level would be approximately 85.6 dbA, which is still below the threshold of 90 dbA. *As a result, less than significant impacts would occur.*

TABLE 2 CONSTRUCTION NOISE LEVELS REFERENCES

Construction Phase	Equipment	Noise Level (Source)	Noise Level at Sensitive Receptors	Threshold
Demolition	Dozers	85.0 dbA	83.8 dbA	90 dbA
	Loader	80.0 dBA	75.1 dbA	90 dbA
	Excavator	85.0 dBA	66.7 dbA	90 dbA
	Scraper	85.0 dBA	79.6 dbA	90 dbA
Site Preparation	Dozers	85.0 dbA	83.8 dbA	90 dbA
	Loader	80.0 dBA	75.1 dbA	90 dbA
	Excavator	85.0 dBA	66.7 dbA	90 dbA
	Scraper	85.0 dBA	79.6 dbA	90 dbA
Grading	Dozers	85.0 dbA	83.8 dbA	90 dbA
	Loader	80.0 dBA	75.1 dbA	90 dbA
	Excavator	85.0 dBA	66.7 dbA	90 dbA
	Scraper	85.0 dBA	79.6 dbA	90 dbA
Building Construction	Cranes	85.0 dBA	62.6 dbA	90 dbA
	Forklift	80.0 dBA	76.0 dbA	90 dbA
	Tractors/Loader/Backhoe	81.0 dbA	69.6 dbA	90 dbA
Paving	Tractors/Loader/Backhoe	81.0 dbA	69.6 dbA	90 dbA
	Pavers	85.0 dbA	64.2 dbA	90 dbA
	Paving Equipment	85.0 dbA	72.0 dbA	90 dbA
	Rollers	85.0 dbA	63.0 dbA	90 dbA
Architectural Coating	Air Compressors	80.0 dbA	63.7 dbA	90 dbA

Source: Roadway Construction Noise Model

EXHIBIT 4 MEASUREMENT LOCATION & SENSITIVE RECEPTORS

SOURCE: BLODGETT BAYLOSIS ENVIRONMENTAL PLANNING

Vibration

The nearest sensitive receptor is a multi-family home located approximately 75 feet north of the proposed building in the parcel adjacent to the north of the site. feet north from the project site respectively. The construction of the proposed project will result in the generation of vibration and noise, though the vibrations and noise generated during the project's construction will not adversely impact the nearby residential sensitive receptors. The background vibration velocity level in residential areas is usually around 50 vibration velocity level (VdB). The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity of 75 VdB is the approximately dividing line between barely perceptible and distinctly perceptible levels for many people. Sources within buildings such as operation of mechanical equipment, movement of people, or the slamming of doors causes most perceptible indoor vibration. Construction activities may result in varying degrees of ground vibration, depending on the types of equipment, the characteristics of the soil, and the age and construction of nearby buildings. The operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Ground vibrations associated with construction activities using modern construction methods and equipment rarely reach the levels that result in damage to nearby buildings though vibration related to construction activities may be discernible in areas located near the construction site. A possible exception is in older buildings where special care must be taken to avoid damage. The U.S. Department of Transportation (U.S. DOT) has guidelines for vibration levels from construction related to their activities and recommends that the maximum peak-particle-velocity (PPV) levels remain below 0.05 inches per second at the nearest structures. PPV refers to the movement within the ground of molecular particles and not surface movement. Vibration levels above 0.5 inches per second have the potential to cause architectural damage to normal dwellings. The U.S. DOT also states that vibration levels above 0.015 inches per second (in/sec) are sometimes perceptible to people, and the level at which vibration becomes an irritation to people is 0.64 inches per second. Table 3 summarizes the levels of vibration and the usual effect on people and buildings.

Table 3 Common Effects of Construction Vibration

Peak Particle Velocity (in/sec)	Effects on Humans	Effects on Buildings
<0.005	Imperceptible	No effect on buildings
0.005 to 0.015	Barely perceptible	No effect on buildings
0.02 to 0.05	Level at which continuous vibrations begin to annoy occupants of nearby buildings	No effect on buildings
0.1 to 0.5	Vibrations considered unacceptable for persons exposed to continuous or long-term vibration.	Minimal potential for damage to weak or sensitive structures
0.5 to 1.0	Vibrations considered bothersome by most people, tolerable if short-term in length	Threshold at which there is a risk of architectural damage to buildings with plastered ceilings and walls. Some risk to ancient monuments and ruins.
>3.0	Vibration is unpleasant	Potential for architectural damage and possible minor structural damage

Source: U.S. Department of Transportation

The project's implementation would not require deep foundations since the underlying fill soils will be removed and the height of the proposed buildings will be limited. The buildings would be constructed over a shallow foundation that will extend no more than three to four feet bgs. The use of shallow foundations precludes the use of pile drivers or any auger type equipment. However, other vibration generating equipment may be used on-site during construction. Various types of construction equipment have been measured under a wide variety of construction activities with an average of source levels reported in terms of velocity levels as shown in Table 4. Although the table gives one level for each piece of equipment, it should be noted that there is a considerable variation in reported ground vibration levels from construction activities. The data in Table 4 does provide a reasonable estimation for a wide range of soil conditions. Table 4 shows that all construction equipment would not exceed U.S. DOT vibration thresholds at the nearest sensitive receptor, approximately 75 feet north of the proposed building footprint (50 feet used to describe construction distance). *As a result, less than significant impacts would occur*.

Table 4 Vibration Source Levels for Typical Construction Equipment

Construction Equipment		PPV @50 ft. (inches/sec.)	Vibration (VdB) @50 ft.
Pile Driver (impact)*	Upper Range	0.537	103
	Typical	0.228	95
Pile Driver (Sonic)*	Upper Range	0.260	96
	Typical	0.060	84
Vibratory Roller		0.074	85
Large Bulldozer		0.031	78
Caisson Drilling		0.031	78
Loaded Trucks		0.031	78
Small Bulldozer		0.01	49

Source: Noise and Vibration During Construction FTA 2018
*Pile drivers not used.

10. OPERATIONAL NOISE IMPACTS

The project will be required to adhere to all pertinent City noise control regulations.

As previously mentioned, the project site is located within a planned industrial area. The proposed project is a permitted use within this zone and is consistent with the type of development within this region as a recycling facility with outdoor storage is across Western Avenue and a larger warehouse similar to the project is under construction across Lincoln Way. Any potential cumulative impacts would have been addressed within the environmental documents prepared for PUD 103-76. The project also includes the construction of an 8-foot-tall tilt-up wall on the northern boundary, further reducing noise levels to the nearest sensitive receptors.

Upon completion of construction and occupancy of the proposed project, on-site operational noise would be generated mainly by trucks, trash compactors, ventilation, and air conditioning (HVAC) equipment. Large HVAC systems could result in noise levels that average between 50 and 65 dBA Leq at 50 feet from the equipment. Trucks and trash compactors would generate noise levels of approximately 71 dBA (Leq) and 66 dBA (Leq) at 50 feet distance, respectively. Assuming a maximum of six trucks running onsite at the same time, the maximum noise level at 50 feet from the source would be 79.5 dBA, which is below the maximum noise standard by time. Based on the principles of spreading loss, the sound level at the nearest sensitive receptor would be approximately 55.6 dbA. An eight-foot-tall tilt-up wall would be located between the project site and the nearest sensitive receptor which would dampen the sound to approximately 51 dbA, which is below the City of Stanton threshold.

The cumulative traffic associated with the proposed project will not be great enough to result in a measurable or perceptible increase in traffic noise (it typically requires a doubling of traffic volumes to increase the ambient noise levels to 3.0 dBA or greater). Based on the trip generation summary conducted by Urban Crossroads Inc, a total of 88 daily trips, including 32 trucks, would be generated by the proposed project, which is under double the observed daily traffic generated by the existing use. For this assumption, all vehicles are treated as the same traffic noise. *As a result, less than significant operational impacts would occur.*

Vibration

Future proposed land uses within the project would not be anticipated to generate significant levels of vibration since the proposed project involves the development of a warehouse. The primary source of ground borne vibration would be vehicle traffic on the internal drive aisle and adjacent streets. As previously mentioned, the project's traffic will not be significant enough to result in a doubling of traffic volumes along local streets. Therefore, the project's implementation will not result in a measurable increase in vibration levels. Trucks would travel through the internal drive aisle to reach the loading zone. The drive aisle is located approximately 20 feet south of the northern boundary of the project site, or 20 feet south of the nearest sensitive receptor. A truck traveling on the drive aisle would generate 0.106 PPV, which as shown in Table 3 would be unacceptable over long term for persons exposed to continuous or long-term vibration and would have minimal potential for structure damage for weak or sensitive structures. It is important to note, truck travel along the drive aisle would be intermittent and a total of 32 trucks are expected per day. Additionally, truck travel would be limited to the hours of operation and Section 8.47.060, Special Noise Sources, of the City's Municipal Code which prevents loading and unloading of any vehicle or operating wheeled equipment between the hours of 10:00 p.m. and 7:00 a.m. within commercial or industrial areas that abut any residential property. *As a result, less than significant impacts would occur.*

11. AIRPORTS

The nearest airport is located in the Los Alamitos Joint Forces Training Base, approximately 1.82 miles west of the project site. The project site is located outside of the 60 CNEL noise contour and is also well below the 250 feet height restriction.[9] As a result, no noise exposure impacts from a public airport are anticipated.

12. MITIGATION MEASURES

[9] Airport Land Use Commission. *Airport Environs Land Use Plan for Joint Forces Training Base Los Alamitos*. August 17, 2017

The analysis of potential noise impacts indicated that no significant adverse impacts would result from the approval of the proposed project and its subsequent implementation. As a result, no mitigation measures are required.

12. SOURCES:

- Blodgett Baylosis Environmental Planning. Site survey. Survey conducted on February 11, at 2:50 PM
- City of Garden Grove General Plan. May 2008.
- Google Earth. Site accessed February 24, 2025.
- O.C. Design & Engineering. Site Plan. Sheet A100. July 23, 2024.

APPENDIX A – NOISE MEASUREMENTS

Project Name:	GGRO 019	Project #:	
Location:		Date:	
Time:		Setting:	

Measurement Series No 1						Measurement Series No 2					
No.	dBA	Comments	No	dBA	Comments	No.	dBA	Comments	No	dBA	Comments
1	63.6		51	63.8		1			51		
2	63.5		52	62.8		2			52		
3	69.7		53	60.7		3			53		
4	69.5		54	65.4		4			54		
5	70.4		55	63.7		5			55		
6	68.5		56	62.5		6			56		
7	66.3		57	61.0		7			57		
8	66.5		58	61.9		8			58		
9	64.7		59	64.7		9			59		
10	64.6		60	63.0		10			60		
11	64.4		61	65.2		11			61		
12	65.9		62	65.0		12			62		
13	65.1		63	64.9		13			63		
14	67.2		64	63.7		14			64		
15	64.8		65	63.5		15			65		
16	53.4		66	63.8		16			66		
17	62.7		67	64.0		17			67		
18	65.3		68	64.2		18			68		
19	63.3		69	65.2		19			69		
20	61.4		70	64.7		20			70		
21	56.7		71	64.9		21			71		
22	64.9		72	59.9		22			72		
23	60.2		73	73.1		23			73		
24	63.8		74	71.2		24			74		
25	65.2		75	56.5		25			75		
26	69.9		76	70.6		26			76		
27	71.4		77	62.6		27			77		
28	66.3		78	65.7		28			78		
29	66.5		79	62.5		29			79		
30	65.9		80	62.6		30			80		
31	63.4		81	63.5		31			81		
32	65.0		82	61.2		32			82		
33	64.6		83	69.9		33			83		
34	67.9		84	63.7		34			84		
35	69.5		85	64.4		35			85		
36	67.5		86	63.7		36			86		
37	70.3		87	61.9		37			87		
38	71.5		88	62.9		38			88		
39	69.1		89	63.7		39			89		
40	69.5		90	63.3		40			90		
41	66.2		91	69.1		41			91		
42	64.5		92	67.9		42			92		
43	65.1		93	65.6		43			93		
44	63.7		94	65.9		44			94		
45	62.4		95	66.9		45			95		
46	63.0		96	62.0		46			96		
47	62.8		97	73.1		47			97		
48	62.7		98	71.2		48			98		
49	61.9		99	74.2		49			99		
50	69.7		100	75.1		50			100		