5.12 Noise

Based on Appendix G of the state CEQA Guidelines and comments received during the Notice of Preparation (NOP) public review comment period, the focus of the following analysis addresses the Project's potential impacts with regard to temporary, periodic, and permanent increases to ambient noise levels, compliance with existing noise standards, ground-borne vibration, and from airport noise. Comment letters received in response to the NOP along with notes from the Scoping Meeting are included in Appendix A of this DEIR.

The following analysis of potential impacts is based, on the *Noise Impact Analysis for the Sycamore Canyon Business Park Warehouse*, August 1, 2016 (hereinafter referred to as the NIA), prepared by Kunzman Associates. This report is presented in its entirety in Appendix I of this DEIR.

5.12.1 Setting

This section presents a discussion of noise fundamentals applicable to the Project, together with an assessment of existing ambient noise levels and noise sources in the Project vicinity.

Characteristics of Sound

Noise is most often defined as unwanted sound. Although sound can be easily measured, the perceptibility is subjective and the physical response to sound complicates the analysis of its impact on people. People judge the relative magnitude of sound in subjective terms such as "noisy" or "loud." To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect our ability to hear. The analysis of any project's noise impact defines the noise environment of the project area in terms of sound intensity and its effect on adjacent land uses and receivers.

Quantification of Sound

Sound pressure magnitude is measured and quantified using a logarithmic ratio of pressures, the scale of which defines the level of sound in decibels (dB). Because human hearing is not equally sensitive to sound at all frequencies, the A-weighting system is used to adjust quantified or measured sound levels to approximate this frequency-dependent response; A-weighted sound is expressed as dBA. From the noise source to the receiver, noise changes both in level and frequency spectrum. The most obvious is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on whether the source is a point or line source as well as ground absorption, atmospheric effects and refraction, and shielding by natural and manmade features. Sound from point sources, such as air conditioning condensers, radiates uniformly outward as it travels away from the source in a spherical pattern. The noise drop-off rate associated with this geometric spreading is 6 dBA per each doubling of the distance (dBA/DD). Transportation noise sources such as roadways are typically analyzed as line sources, since at any given moment the receiver may be impacted by noise from multiple vehicles at various locations along the roadway. Because of the geometry of a line source, the noise drop-off rate

associated with the geometric spreading of a line source is 3 dBA with each doubling of distance.

As a source of reference, common indoor and outdoor noise sources, presented in terms of dBA, are shown in relation to the approximate corresponding noise level in **Table 5.12-A – Representative Environmental Noise Levels**.

Table 5.12-A – Representative Environmental Noise Levels[a]

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	rock band
jet fly-over at 1,000 feet	105	
	100	
gas lawnmower at 3 feet	95	
	90	
diesel truck, 50 mph at 50 feet	85	food blender at 3 feet
	80	garbage disposal at 3 feet
noisy urban area during daytime	75	
gas lawnmower at 100 feet	70	vacuum cleaner at 10 feet
commercial area	65	normal speech at 3 feet
heavy traffic at 300 feet	60	
	55	large business office
quiet urban area during daytime	50	dishwasher in next room
	45	
quiet urban area during nighttime	40	theater, large conference room (background)
quiet suburban area during nighttime	35	
	30	Library
quiet rural area during nighttime	25	bedroom at night, concert hall (background)
	20	
	15	broadcast/recording studio
	10	
	5	
lowest threshold of human hearing	0	lowest threshold of human hearing

Notes:
[a] Source: California Department of Transportation, *Technical Noise Supplement*, September 2013, Table 2-5, p. 2 20

Sound is a pressure wave created by a moving or vibrating source that travels through an elastic medium such as air. Specifically, noise is defined as unwanted or objectionable sound which consists of pitch, loudness, and duration. However, the effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and in extreme circumstances, hearing impairment. Although it is difficult to describe noise with a single unit of measure because the human ear is not equally sensitive to all frequencies within the sound spectrum, the unit of measurement used to describe a noise level is the decibel (dB), and the A-weighted noise scale which weights the frequencies to which humans are sensitive is dBA. Furthermore, Federal and State agencies have established noise and land use compatibility guidelines that use averaging methods to noise measurement. Two measurement

scales commonly used in California are the Community Noise Equivalent Level (CNEL) and the day-night level (DNL or L_{dn}). CNEL is a 24-hour weighted average measure of community noise; DNL is also a 24-hour average measure, but it only weighs nighttime hours. To account for increased human sensitivity at night, the L_{dn} scale includes a 10 dB weighting penalty on noise occurring during the 10:00 p.m. to 7:00 a.m. time period. The CNEL scale includes a 5 dB weighting penalty on noise occurring during the 7:00 p.m. to 10:00 p.m. time period, and a 10 dB weighting penalty on noise occurring during the 10:00 p.m. to 7:00 a.m. time period. This weighting accounts for the increased human sensitivity to noise during the evening and nighttime hours. As such, it is widely accepted that average healthy ear can barely perceive changes of 3 dBA; that a change of 5 dBA is readily perceptible; and that an increase or decrease of 10 dBA sounds twice as loud. (KA 2016, pp. 4-5).

Other noise rating scales of importance when assessing the annoyance factor include the peak or maximum noise level (L_{max}), which is the highest exponential, time-averaged sound level that occurs during a stated period. Short-term noise impacts in this discussion are specified in terms of maximum levels, denoted by L_{max} which reflects acoustical peaks during operational conditions and addresses the annoying aspects of constant noise.

Noise is particularly problematic when noise-sensitive land uses are affected. Noise-sensitive land uses are defined as uses where one would typically find activities that are interrupted by noise, such as residential uses, schools, hospitals, churches, performing arts facilities, and hotels and motels. The City of Riverside deems residential uses particularly noise sensitive because families and individuals expect to use time in the home for quiet rest; intrusive noise can interfere with such pursuits (GP 2025, p. N-21). Although some variability in standards for noise sensitivity may apply to different densities of residential development, specifically infill and mixed use developments, single-family uses are frequently considered the most sensitive (GP 2025, p. N-21).

Groundborne Vibration

Groundborne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving, and operating heavy earth-moving equipment.

Vibration is an oscillatory motion which can be described in terms of the displacement, velocity, or acceleration. Displacement is the easiest descriptor to understand. For a vibrating floor, the displacement is simply the distance that a point on the floor moves away from its static position. The velocity represents the instantaneous speed of the floor movement and acceleration is the rate of change of the speed.

Although displacement is easier to understand than velocity or acceleration, it is rarely used for describing ground-borne vibration. Most transducers used for measuring ground-borne vibration use either velocity or acceleration. Furthermore, the response of humans, buildings,

and equipment to vibration is more accurately described using velocity or acceleration. The effects of ground-borne vibration include “feelable” movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. The rumble is the noise radiated from the motion of the room surfaces. In essence, the room surfaces act like a giant loudspeaker causing what is called ground-borne noise. In extreme cases, the vibration can cause damage to buildings.

There are several different methods used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings and is typically measured in inches per second. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the squared amplitude of the signal. The PPV and RMS velocity are normally described in inches per second in the United States. Although it is not universally accepted, decibel notation (VdB) is in common use for vibration.

Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of vibration. Man-made vibration issues are therefore, usually confined to short distances (i.e., 500 feet or less) from the source. Sensitive receptors for vibration include structures (especially older masonry structures); people (especially residents, the elderly, and the sick) and vibration sensitive equipment.

Existing Site and Surrounding Conditions

The Project site encompasses approximately 76 gross acres. The southern portion of the Project site is graded and relatively level. The Project site is located within the *Sycamore Canyon Business Park Specific Plan*. The Project site is surrounded by existing logistics, industrial, and business park uses to the east and south, single-family residences to the north and northwest, and the Sycamore Canyon Wilderness Park to the west (**Figure 3-2 – Location Map** and **Figure 5.1-1 – Surrounding Land Uses**). The GP 2025 Land Use Designations for the Project site and surrounding properties are shown on **Figure 3-4–Land Use Designation Map**.

As discussed in Section 3 – Project Description, the City adopted the *Sycamore Canyon Business Park Specific Plan* (SCBPSP) on April 10, 1984. The SCBPSP contains land use objectives and design guidelines to provide for planned industrial development such as the proposed Project within this area. The Project site has a General Plan land use designation of Business/Office Park (B/OP) as shown on **Figure 3-4 – Land Use Designation Map** and a zoning designation of Business Manufacturing Park and Specific Plan (Sycamore Canyon Business Park) Overlay Zones (BMP-SP) as shown on **Figure 3-5 – Zoning Map**.

Roadways that surround the Project site include Sycamore Canyon Boulevard, Dan Kipper Drive, Sierra Ridge Drive, and Box Springs Boulevard to the east; Fair Isle Drive is located to the north; and Eastridge Avenue and Eucalyptus Avenue are located to the southeast. Additionally, the Project site is located less than a mile from Interstate 215 (I-215)

Existing Noise Levels

The predominant noise sources characterizing the Project site and the surrounding area are residential noise, barking dogs, construction activity.[1] Vehicular noise from I-215 is audible, but not dominant. Occasional aircraft noise, noise from adjacent industrial land uses, aircraft, barking dogs, and bird song are also audible (KA, p. 9).

To determine ambient noise at the Project site, an American National Standards Institute (ANSI Section SI4 1979, Type 1) Larson Davis model LxT sound level meter was used. Ambient noise measurements were taken near existing noise sensitive areas surrounding the Project site at the northwest corner (Location ST2) and southeast corner (Location ST1) of the Project site as shown on **Figure 5.12-1 – Noise Measurement Locations**.

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[1] At the time ambient noise measurements were taken, the four industrial buildings located east of the Project site and north of Dan Kipper Drive (City Planning Division Case No. P14-1053 and P14-1054) were being constructed.

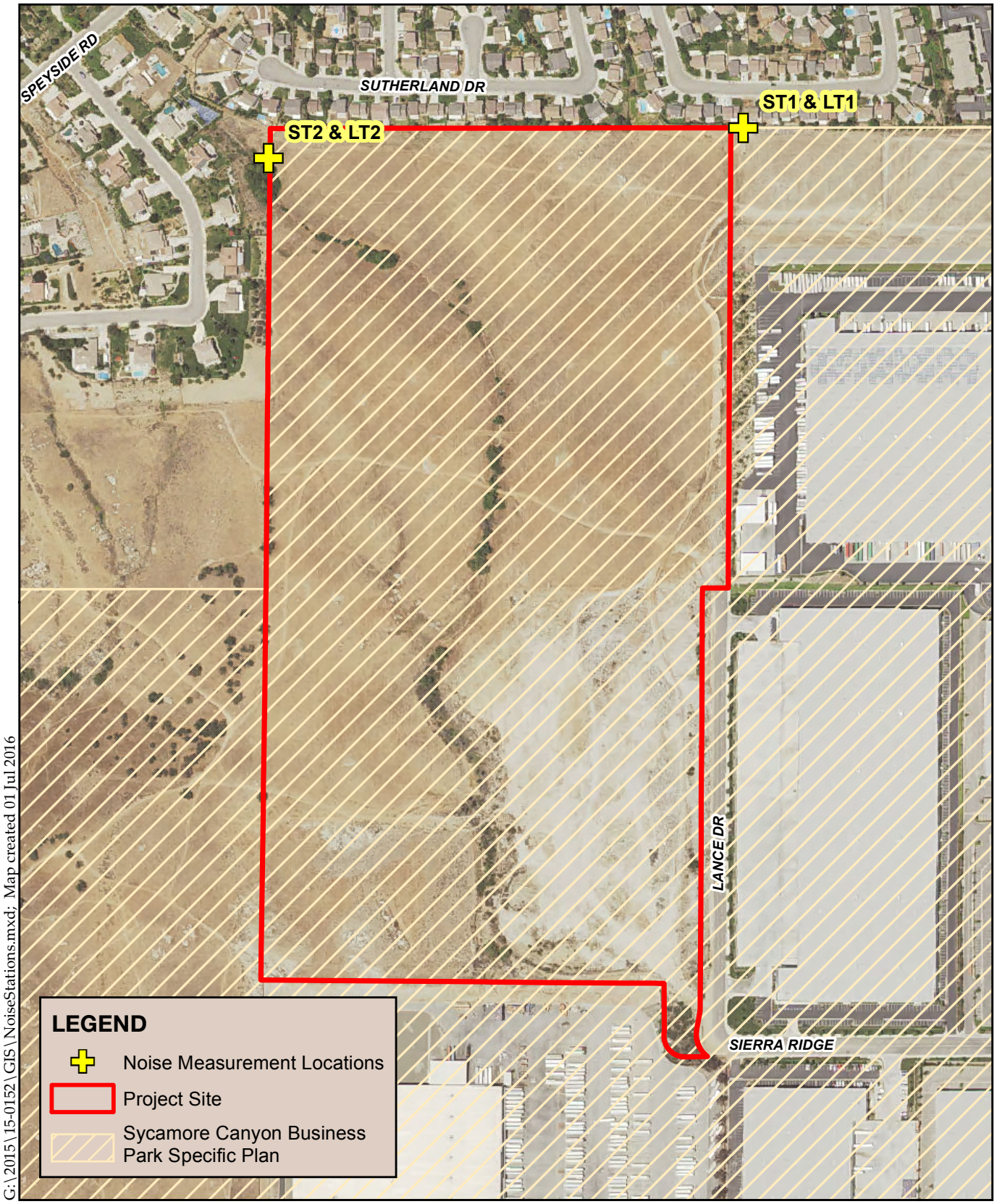

Figure 5.12-1 - Noise Measurement Locations

Sycamore Canyon Business Park Buildings 1 and 2 DEIR

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Both short-term and long-term ambient noise measurements were made. Short-term monitoring consisted of three 10-minute ambient daytime noise measurements; long-term monitoring consisted of two 24-hour periods. The dates, times, and results of the short-term ambient noise measurements are presented in **Table 5.12-B – Existing Noise Levels in Project Vicinity**. Monitoring locations are shown on **Figure 5.12-1**.

Table 5.12-B – Existing Noise Levels in Project Vicinity[a]

Noise Monitoring Position[b]	Date	Time Started	L_{eq}	L_{max}[c]	L_{min}[d]
ST1(Active Construction)	12/15/2015	2:13 pm	56.0	62.6	52.9
ST1 (Inactive Construction)	12/18/2015	6:59 pm	52.2	56.3	47.6
ST2	12/14/2015	5:23 p.m.	41.9	58.9	34.5
LT1	12/29/2015	2:00 p.m.	54.0	78.9	32.1
LT2	12/28/2015	9:00 a.m.	46.3	80.2	28.7

Notes:

[a] Source: Kunzman Associates, Inc., *Noise Impact Analysis for the Sycamore Canyon Business Park Warehouse*, August 1, 2016, Table 3, p. 10.

[b] Noise monitoring positions are shown on **Figure 5.12-1**.

[c] The single highest recorded noise level event during monitoring.

[d] The single lowest recorded noise level event during monitoring.

As shown in **Table 5.12-B,** none of the short term L_{eq} noise measurements exceeded the daytime exterior noise standard of 55 dBA (set forth in Riverside Municipal Code Table 7.25.010A) for residential property at the property line except for the measurement taken at ST1 during active construction of the industrial CT Realty project east of the Project site and north of Dan Kipper Road.

Ambient 24-hour noise levels were monitored from 2 p.m. to 11:00 p.m. on December 29, 2015, and from 12:00 a.m. to 1:00 p.m. on December 30, 2015 at location LT1. Ambient 24-hour noise levels were monitored from 9:00 a.m. to 11:00 p.m. on December 28, 2015, and from 12:00 a.m. to 8:00 a.m. on December 29, 2015 at the locations shown as LT1 and LT2 on **Figure 5.12-1**. Measurements were taken on different days for each location to facilitate the monitoring of ambient noise levels at multiple stations over a 24-hour period. The hourly measurements resulting from the 24-hour monitoring are presented in **Table 5.12-C – Existing 24-Hour Noise Levels in Project Vicinity**.

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Table 5.12-C – Existing 24-Hour Noise Levels in Project Vicinity[a]

Noise Monitoring Position[b]	Reading	Monitored Ambient Noise Level (dBA)		
		L_{eq}[c]	L_{max}[d]	L_{min}[e]
LT1	2:00 p.m.	50.0	78.9	37.1
	3:00 p.m.	42.4	61.6	33.1
	4:00 p.m.	45.1	70.9	32.1
	5:00 p.m.	45.9	66.5	32.8
	6:00 p.m.	44.6	59.2	32.5
	700 p.m.	46.6	64.5	35.0
	800 p.m.	45.8	63.4	38.7
	9:00 p.m.	47.0	60.1	41.0
	10:00 p.m.	**51.1**	61.4	46.2
	11:00 p.m.	**53.0**	62.9	47.4
	12:00 a.m.	**51.5**	64.2	46.5
	1:00 a.m.	**51.4**	60.2	46.5
	2:00 a.m.	**52.1**	64.3	46.2
	3:00 a.m.	**51.0**	60.1	46.0
	4:00 a.m.	**52.9**	58.9	46.4
	5:00 a.m.	**55.4**	60.4	51.0
	6:00 a.m.	**56.9**	66.5	53.0
	7:00 a.m.	**58.1**	64.1	54.3
	8:00 a.m.	**58.3**	63.7	54.3
	9:00 a.m.	54.5	65.1	49.5
	10:00 a.m.	**60.5**	78.1	46.6
	11:00 a.m.	**59.6**	76.6	41.8
	12:00 p.m.	48.4	69.5	39.3
	1:00 p.m.	50.6	68.7	40.6
LT2	9:00 a.m.	51.9	80.2	36.4
	10:00 a.m.	41.6	58.3	36.0
	11:00 a.m.	41.3	60.7	33.6
	12:00 p.m.	42.5	57.1	33.3
	1:00 p.m.	45.3	65.4	32.4
	2:00 p.m.	43.8	65.6	29.8

Noise Monitoring Position[b]	Reading	Monitored Ambient Noise Level (dBA)		
		L_{eq}[c]	L_{max}[d]	L_{min}[e]
	3:00 p.m.	38.8	53.8	28.7
	4:00 p.m.	42.1	55.6	29.3
	5:00 p.m.	46.7	59.5	38.1
	6:00 p.m.	44.5	66.9	37.4
	700 p.m.	44.1	62.5	33.3
	800 p.m.	41.1	55.6	34.1
	9:00 p.m.	47.1	57.2	41.7
	10:00 p.m.	**45.8**	61.8	40.7
	11:00 pm	43.8	50.0	34.9
	12:00 a.m.	39.8	48.8	32.2
	1:00 a.m.	41.0	54.2	34.5
	2:00 a.m.	44.6	51.4	39.1
	3:00 a.m.	43.2	48.7	38.1
	4:00 a.m.	**46.1**	54.6	39.5
	5:00 a.m.	**46.2**	56.6	38.2
	6:00 a.m.	**50.5**	54.8	47.1
	7:00 a.m.	**50.2**	60.9	47.2
	8:00 a.m.	51.9	70.8	45.5

Notes:

a Source: Kunzman Associates, Inc., Appendix C of the *Noise Impact Analysis for the Sycamore Canyon Business Park Warehouse*, August 1, 2016 (Appendix I).

b Noise monitoring positions are shown on **Figure 5.12-1**.

c Bolded numbers mean the measured Leq exceeds exterior noise standards for residential land uses set forth in Riverside Municipal Code Tables 7.25.010A and 7.25.010B.

d The single highest recorded noise level event during monitoring.

e The single lowest recorded noise level event during monitoring.

Conditions during monitoring were typical to the site, Noise sources included noise from adjacent industrial uses, residential noise, dogs barking, traffic, aircraft noise, and bird song. Construction activities were active and audible and are therefore included in the results.

For location LT1 (the northeast corner of the Project site), the results of the 24-hour ambient noise measurements (**Table 5.12-C**), indicate that daytime (7:00 a.m. to 10 p.m.) noise levels ranged between 42.4 dBA L_{eq} (at 3:00 p.m.) and 60.5 dBA L_{eq} (at 10:00 a.m.). The daytime residential standard of 55 dBA was exceeded at 8:00 a.m., 10:00 a.m., and 11:00 a.m. Nighttime (10:00 p.m. to 7:00 a.m.) noise levels measured at location LT1 ranged from 51.0 dBA to 58.1 dBA and exceeded the nighttime residential standard of 45 dBA for all hours.

Based on the 24-hour ambient measurements taken at this location the CNEL is 60 dBA. It is important to note that there is an existing wooden fence along the residential property line at location LT1 and the noise meter was placed on the Project side of the property line; thus, the noise level on the residential side may be lower.

For location LT2 (the northwest corner of the Project site), the results of the 24-hour ambient noise measurements (**Table 5.12-C**), indicate that daytime noise levels ranged between 38.8 dBA L_{eq} (at 1:00 p.m.) and 51.9 dBA L_{eq} (at 8:00 a.m. and 9:00 a.m.). Measured nighttime noise levels at location LT2 ranged from 39.8 dBA to 50.5 dBA. The nighttime residential standard of 45 dBA was exceeded at 10:00 p.m. and from 4:00 a.m. – 7:00 a.m. Based on the 24-hour ambient measurements taken at this location the CNEL is 52 dBA. There are no fences or barriers between the Project site and the residential lots to the west.

Noise in the Project area also results from vehicles using area streets. Existing vehicular-sourced noise was modeled using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model FHWA-RD-77-108. Traffic noise levels are calculated at 50 feet from the roadway centerline and are presented in **Table 5.12-D – Existing Noise Levels at 50 Feet from Centerline.** It is important to note, that this modeling is theoretical and does not take into account any existing barriers, structures, and/or topographical features that may further reduce noise levels. Therefore, these levels are presented for comparative purposes only to show the difference in vehicular-sourced noise with and without the proposed Project.[2]

Table 5.12-D – Existing Noise Levels at 50 Feet from Centerline[a]

Roadway Segment	ADT[b]	CNEL at 50 feet (dBA)
Fair Isle Drive-Box Springs Road		
Sycamore Canyon Boulevard to I-215 Freeway NB On-Ramps	12,690	60.5
Dan Kipper Drive		
w/o Sycamore Canyon Boulevard	40	39.9
Sierra Ridge Drive		
w/o Sycamore Canyon Boulevard	2,530	58.0
Eastridge Avenue		
Sycamore Canyon Boulevard to Box Springs Boulevard	13,080	62.6
Box Springs Boulevard to I-215 Ramps	15,030	63.2

[2] Noise impacts associated with Project-generated vehicular traffic is discussed under Threshold C.in Section 5.12.5

Roadway Segment	ADT[b]	CNEL at 50 feet (dBA)
Sycamore Canyon Boulevard		
Fair Isle Drive to I-215 SB Ramps	15,155	64.5
I-215 SB Ramps to Dan Kipper Drive	13,390	64.0
Dan Kipper Drive to Box Springs Boulevard	12,925	63.8
Box Springs Boulevard to Sierra Ridge Drive	9,940	62.7
Sierra Ridge Drive to Eastridge Avenue	11,220	63.2

Notes:

a Source: Kunzman Associates, Inc., *Noise Impact Analysis for the Sycamore Canyon Business Park Warehouse*, August 1, 2016, Table 7 (Appendix I).

b Average daily trips

Of the roadways identified in **Table 5.12-D**, only Dan Kipper Drive and Sierra Ridge Drive are within 50-feet of the Project site. However, because none of these streets are within 50 feet of receptor locations ST1/LT1 or ST2/LT2, vehicular noise is not considered a significant contributor to ambient noise levels at these locations.

5.12.2 Related Regulations

Federal

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce;
- Assisting State and local abatement efforts; and
- Promoting noise education and research.

The Federal Office of Noise Abatement and Control was initially tasked with implementing the Noise Control Act. However, the Office of Noise Abatement and Control has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and interagency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The United States Department of Transportation assumed a significant role in noise control through its various operating agencies. The Federal Aviation Administration regulates noise of aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration and Federal Highway Administration (FHWA). Finally, the federal government actively advocates that local jurisdictions use their land use regulatory authority to arrange new development in such a way that “noise sensitive” uses are either prohibited from being sited adjacent to a highway or, alternately, that the developments are planned and constructed in such a manner that potential noise impacts are minimized.

Since the federal government has preempted the setting of standards for noise levels that can be emitted by the transportation sources, the City is restricted to regulating the noise generated by the transportation system through nuisance abatement ordinances and land use planning.

The proposed Project will comply with the appropriate OSHA regulations relative to worker exposure to noise during Project construction and operation.

State

State of California General Plan Guidelines 2003

Through not adopted by law, the State of California General Plan Guidelines 2003, published by the California Governor's Office of Planning and Research (OPR) (OPR Guidelines), provide guidance for the computability of projects within areas of specific noise exposure. The OPR Guidelines identify the suitability of various types of construction relative to a range of outdoor noise levels and provide each local community some flexibility in setting local noise standards that allow for the variability in community preferences. Findings presented in the Levels of Environmental Noise Document (EPA 1974) influenced the recommendation of the OPR Guidelines, most importantly in the choice of noise exposure metrics (i.e. L_{dn} or CNEL) and in the upper limits for the Normally Acceptable outdoor exposure of noise-sensitive uses. The OPR Guidelines include a Noise and Land Use Compatibility Matrix identifies acceptable and unacceptable community noise exposure limits for various land use categories. The City of Riverside has utilized the State's noise/land use compatibility matrix as a model to create their own.

Noise Insulation Standards

The California Commission of Housing and Community Development officially adopted noise standards in 1974. In 1988, the Building Standards Commission revised the noise standards (California Noise Insulation Standards).

The proposed Project will comply with the appropriate noise insulation standards.

California Government Code

California Government Code Section 65302 mandates the legislative body of each county and city in California adopt a noise element as part of its comprehensive general plan. The local noise element must recognize the land use compatibility guidelines published by the State Department of Health Services. The guidelines rank noise land use compatibility in terms of normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable. The City's GP 2025 contains a noise element that ranks land use compatibility as required by the California Government Code. The GP 2025 Noise Element is discussed below.

Local

General Plan 2025 Noise Element

In compliance with California Government Code Section 65302, the GP 2025 Noise Element identifies noise and land use compatibility criteria that identifies "Normally Acceptable," "Conditionally Acceptable," "Normally Unacceptable," and "Conditionally Unacceptable" noise exposure ranges for various land uses as shown in **Figure 5.12-2 – Noise/Land Use Compatibility Criteria** (Figure N-10 of the GP 2025).

These standards are primarily used for planning purposes such as determining a project's compatibility with a proposed site with regard to existing and future acoustical impacts upon a project site sourced from the surrounding environment. In other words, the noise impacts *from* existing surrounding land uses *to* a proposed project.

The "Normally Acceptable" range is defined as: specific land use is satisfactory, based on the assumption that any building is of normal conventional construction, without any special noise insulation requirements.

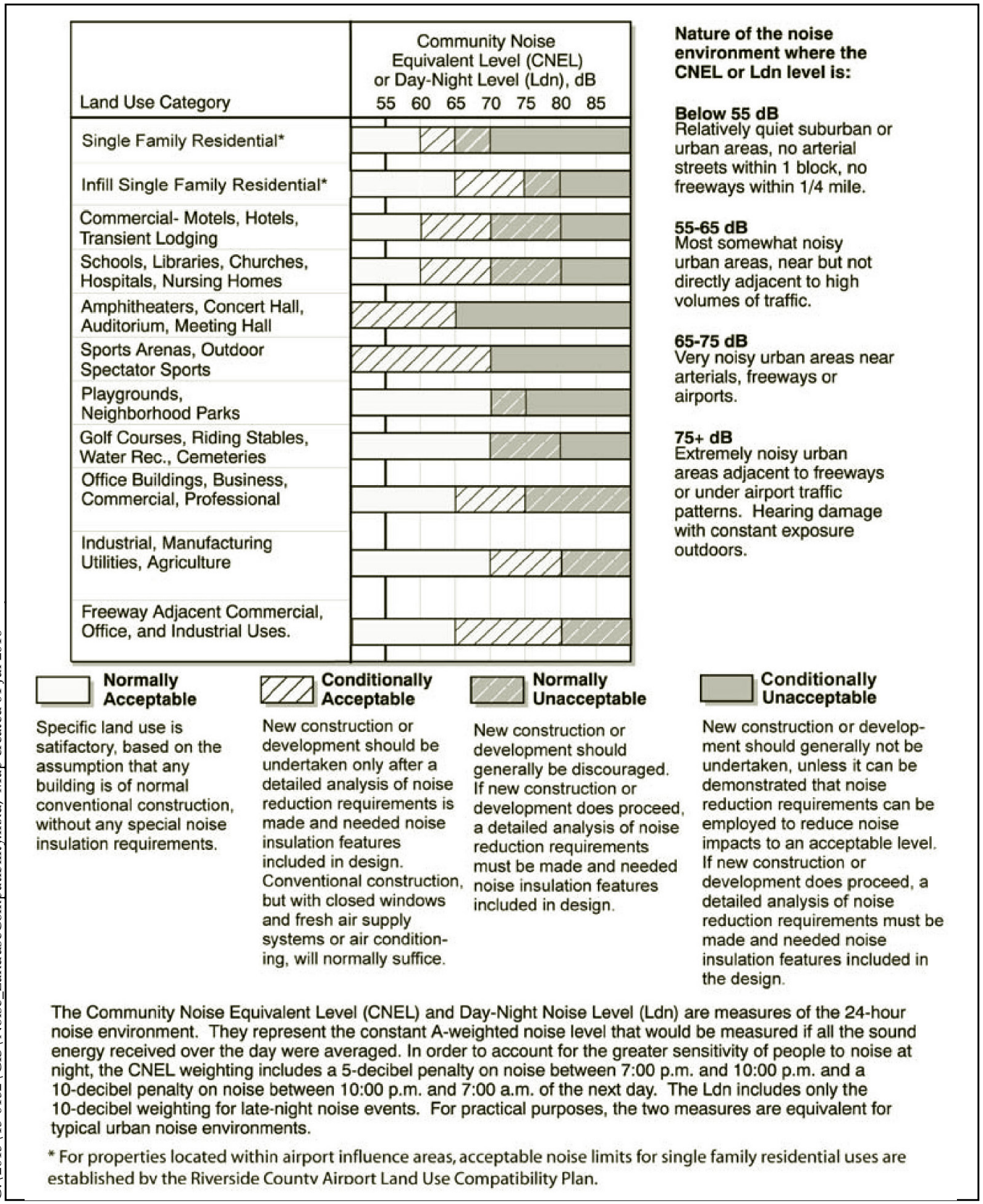
The "Conditionally Acceptable" range is defined as: new construction or development should be undertaken only after a detailed analysis of noise reduction requirements is made and needed noise insulation features included in design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.

The "Normally Unacceptable" range is defined as: new construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in design.

The "Conditionally Unacceptable" range is defined as: new construction or development should generally not be undertaken, unless it can be demonstrated that noise reduction requirements can be employed to reduce noise impacts to an acceptable level. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.

The City includes industrial uses in two different land use categories as shown on **Figure 5.7-5**, "Industrial, Manufacturing Utilities, Agriculture," and "Freeway Adjacent Commercial, Office, and Industrial Uses." Because the proposed Project is not adjacent to the I-215 freeway, it fits within the "Industrial, Manufacturing Utilities, Agriculture" land use category. Noise levels for industrial uses in this land use category are shown as being "Normally Acceptable" ranging up to 70 dBA CNEL/L_{dn}, "Conditionally Acceptable" ranging from 70 to 80 dBA CNEL/L_{dn} and "Normally Unacceptable" starting from 80 dBA CNEL/L_{dn}.

The highest allowable noise level for the category of "Industrial, Manufacturing Utilities, Agriculture" in the most stringent "Normally Acceptable" range is 70 dBA CNEL/L_{dn}.



G:\2015\15-0152\GIS\Noise_LanduseCompatibility.mxd; Map created 01 Jul 2016

Source: Riverside General Plan 2025, Nov. 2007, Figure N-10

Figure 5.12-2 - Noise/Land Use Compatibility Criteria

Sycamore Canyon Business Park Buildings 1 and 2 DEIR

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As shown on **Figure 5.12-2 – Noise/Land Use Compatibility Criteria,** noise levels for single family residential uses, which the proposed Project is adjacent to, are shown as being "Normally Acceptable" ranging up to 60 dBA CNEL/L_{dn}, "Conditionally Acceptable" ranging from 60 to 65 dBA CNEL/L_{dn} and "Normally Unacceptable" ranging from 65 to 70 dBA CNEL/L_{dn}. Noise levels in excess of 70 dBA CNEL/L_{dn} are shown as "Conditionally Unacceptable".

The City of Riverside General Plan Noise Element lists several Policies that can "minimize noise levels from point sources throughout the community, and wherever possible, mitigate the effects of noise to provide a safe and healthful environment." Appendix M of this DEIR summarizes the Project's consistency with the applicable GP 2025 policies.

Riverside Municipal Code

Title 7 of the Riverside Municipal Code, described below, establishes noise performance criteria to guard against exposure of residential and other noise-sensitive uses to loud industrial-related noise. The City has determined that certain noise levels are detrimental to public health, safety and welfare; and are therefore contrary to public interest. In order to control unnecessary, excessive and/or annoying noise in the City, minimize noise levels, and mitigate the effects of noise so as to provide a safe and healthy living environment (Title 7, Section 7.05.010), Title 7 Noise Control, of the Riverside Municipal Code provides general regulations with regard to noise that is produced in the City.

Noise impacts projected onto adjacent properties from the Project are regulated by Sections 7.25.010 and 7.35.010 of the Riverside Municipal Code. These sections provide general regulations with regard to noise that is produced and projected onto surrounding land uses. These limits are applicable to noise generated as a result of the Project's temporary construction and ongoing operational activities.

The maximum noise levels that can be emitted from the Project site upon the nearest point of neighboring land uses (per the Riverside Municipal Code) are shown in **Tables 5.12-E – Riverside Municipal Code Exterior Nuisance Sound Level Limits**.

Table 5.12-E – Riverside Municipal Code Exterior Nuisance Sound Level Limits[a]

Land Use Category	Time Period	Noise Level Limit
Residential	Night (10 p.m. to 7 a.m.)	45 dBA
	Day (7 a.m. to 10 p.m.)	55 dBA
Office/Commercial	Any Time	65 dBA

Land Use Category	Time Period	Noise Level Limit
Industrial	Any Time	70 dBA
Public Recreation Facility	Any Time	65 dBA

Notes:
[a] Source: City of Riverside, Riverside Municipal Code, Title 7 Noise Control, Table 7.25.010A

Section 7.25.010 of the Riverside Municipal Code also provides criteria that apply to any exceedance of the limits present in **Table 5.12-E**, above. These criteria are primarily used for the purposes of code enforcement, but are provided here to outline the parameters by which a noise exceedance would be evaluated. The applicable criteria state:

A. Unless a variance has been granted as provided in this chapter, it shall be unlawful for any person to cause or allow the creation of any noise which exceeds the following:

   1. The exterior noise standard of the applicable land use category, up to 5 decibels, for a cumulative period of more than 30 minutes in any hour; or
   2. The exterior noise standard of the applicable land use category, plus 5 decibels, for a cumulative period of more than 15 minutes in any hour; or
   3. The exterior noise standard of the applicable land use category, plus 10 decibels, for a cumulative period of more than 5 minutes in any hour; or
   4. The exterior noise standard of the applicable land use category, plus 15 decibels, for the cumulative period of more than 1 minute in any hour; or
   5. The exterior noise standard for the applicable land use category, plus 20 decibels or the maximum measured ambient noise level, for any period of time.

B. If the measured ambient noise level exceeds that permissible within any of the first four noise limit categories, the allowable noise exposure standard shall be increased in five decibel increments in each category, as appropriate, to encompass the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

C. If possible, the ambient noise level shall be measured at the same location along the property line with the alleged offending noise source inoperative. If for any reason the alleged offending noise source cannot be shut down, then the ambient noise must be estimated by performing a measurement in the same general area of the source but at a sufficient distance that the offending noise is

inaudible. If the measurement location is on the boundary between two different districts, the noise shall be the arithmetic mean of the two districts.

With regard to interior sound level limits, which are set forth in **Table 5.12-F – Riverside Municipal Code Interior Nuisance Sound Level Limits**, Section 7.30.015 states:

A. No person shall operate or cause to be operated, any source of sound indoors which cause the noise level, when measured inside another dwelling unit, school or hospital, to exceed:

   1. The interior noise standard for the applicable land category area, up to five decibels, for a cumulative period of more than five minutes in any hour;
   2. The interior noise standard for the applicable land use category, plus five decibels, for a cumulative period of more than one minute in any hour;
   3. The interior noise standard for the applicable land use category, plus ten decibels or the maximum measured ambient noise level, for any period of time.

B. If the measured interior ambient noise level exceeds that permissible within the first two noise limit categories in this section, the allowable noise exposure standard shall be increased in five decibel increments in each category as appropriate to reflect the interior ambient noise level. In the event the interior ambient noise level exceeds the third noise limit category, the maximum allowable interior noise level under said category shall be increased to reflect the maximum interior ambient noise level.

C. The interior noise standard for various land use districts shall apply, unless otherwise specifically indicated, within structures located in designated zones with windows opened or closed as is typical of the season.

Table 5.12-F – Riverside Municipal Code Interior Nuisance Sound Level Limits[a]

Land Use Category	Time Period	Noise Level Limit
Residential	Night (10 p.m. to 7 a.m.)	35 dBA
	Day (7 a.m. to 10 p.m.)	45 dBA
School	Any Time	45 dBA
Hospital	Any Time	45 dBA

Notes:
a Source: City of Riverside, Riverside Municipal Code, Title 7 Noise Control, Table 7.30.015(C)

Chapter 7.35 of the Riverside Municipal Code provides general noise regulations. Section 7.35.010(B) states:

It is unlawful for any person to make, continue, or cause to be made or continued any disturbing, excessive or offensive noise which causes discomfort or annoyance to reasonable persons of normal sensitivity. The following acts,[3] among others, are declared to be disturbing, excessive, and offensive noises in violation of this section:

4. Loading and Unloading: Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects, or permitting these activities between the hours of 10:00 p.m. and 7:00 a.m. in such a manner as to cause a noise disturbance across a residential property line or at any time exceeds the maximum permitted noise level for the underlying land use category.
5. Construction: Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, grading or demolition work between the hours of 7 p.m. and 7 a.m. on week days and between 5 p.m. and 8 a.m. on Saturdays or at any time on Sunday or federal holidays such that the sound therefrom creates a noise disturbance across a residential or commercial property line or at any time exceeds the maximum permitted noise level for the underlying land use category, except for emergency work or by variance. This section does not apply to the use of domestic power tools.

Exemptions to the regulations in Title 7 of the Riverside Municipal Code are identified in Section 7.35.020. Included among the exempted activities is work within City rights-of-way per Section 7.35.020(E), which states:

> The provisions of this Title shall not apply to any work performed in the City right-of-ways [sic] when, in the opinion of the Publics Works Director or his designee, such work will create traffic congestion and/or hazardous or unsafe conditions.

Noise level increases resulting from Project-related increases in traffic volumes on area roadways are not regulated by the Riverside Municipal Code; thus, there are no standards for this type of noise. Therefore, a clearly perceptible increase in noise exposure (i.e., 5 dBA) at sensitive receptor locations will be considered significant with regard to Project-specific traffic-sourced noise increases on area roadways (GP 2025 FPEIR, p. 5.11-26).

5.12.3 Thresholds of Significance

The City of Riverside has not established local CEQA significance thresholds as described in Section 15064.7 of the State *CEQA Guidelines*. Therefore, significance determinations utilized in this section are from Appendix G of the State CEQA Guidelines. A significance impact will occur if implementation of the proposed Project will:

[3] Paragraphs 1, 2, and 3 of Riverside Municipal Code 7.35.010(B) relate to noise produced from televisions, radios, musical instruments, use of amplified sound, and animal noise and are not applicable to the proposed Project.

- (Threshold A) exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- (Threshold B) exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;
- (Threshold C) a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- (Threshold D) a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- (Threshold E) for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels;
- (Threshold F) for a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels.

5.12.4 Project Design Features

Design considerations refer to ways in which the proposed Project will limit or mitigate for potential impacts through the design of the Project. The Project proposes a 6-foot high concrete masonry wall to be constructed at the northern boundary and that portion of the western boundary adjacent to residential uses to provide separation between the Project site and the adjacent residences to the north and west. The analysis in this section is based on an 8-foot high two-sided decorative masonry wall along the northern boundary and that portion of the western boundary adjacent to the residential uses as required by mitigation measure **MM AES 1**.

Due to the proximity of the homes north of the Project site, the Project proposes 64-feet of landscaping along the northern boundary. Building 2 does not propose any dock doors or parking on the north side of the building, so as to locate those activities away from the Sycamore Highlands neighborhood. As shown on **Figure 3-10 – Site Plan**, all of docks and truck parking associated with Building 2 are located south of the building. Vehicular parking is located on the east and west of Building 2. The proposed Project will be designed to allow for right-in, right-out at all Project driveways in order to limit the amount of vehicles (both cars and trucks) from using Dan Kipper Drive.

With regard to construction, any on-site rock crushing shall take place at the southeastern corner of the Project site and no blasting shall occur.

5.12.5 Environmental Impacts before Mitigation

Threshold A: *Would the Project cause the exposure of persons to or the generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

According to the *City of Riverside General Plan 2025 Final Program Environmental Impact Report* (the GP 2025 FPEIR), the City relies on the noise compatibility matrix in the GP 2025 Noise Element (**Figure 5.12-2 – Noise/Land Use Compatibility Criteria**) to determine if a future development project will be subject to significant noise impacts, whether self-created or from the existing environment (GP 2025 FPEIR, p. 5.11-26).

Impacts for this threshold are evaluated from the perspective of noise impacts to the Project and noise impacts from the Project (construction noise and operational noise). Vehicular noise from Project-generated trips is discussed under Threshold C.

Noise Impacts to the Project

According to the *City of Riverside General Plan 2025 Final Program Environmental Impact Report* (the GP 2025 FPEIR), the City relies on the noise compatibility matrix in the GP 2025 Noise Element (**Figure 5.12-2 – Noise/Land Use Compatibility Criteria**) to determine if a future development project will be subject to significant noise impacts, whether self-created or from the existing environment. Therefore, a significant noise impact to the proposed Project may occur if noise at the Project site produced by surrounding sources, including Project-generated traffic, will exceed 80 CNEL, which is the highest "Conditionally Acceptable" noise level for Industrial, Manufacturing, Utilities, and Agriculture land uses (**Figure 5.12-2**).

Noise sources affecting the Project site will be sourced primarily from operations at surrounding logistics/distribution uses (specifically the Big 5 and Flexsteel distribution centers to the west and Ralph's distribution center to the south) and vehicular traffic travelling along roadways in proximity to the Project site. Noise from Project generated traffic, traffic from ambient growth, and traffic from cumulative development projects will be less than 70 CNEL (see **Table 5.12-L – Change in Future Noise Levels at 50 Feet from Centerline (Existing Plus Ambient Plus Cumulative Plus Project Condition**).[4] Additionally, according to the GP 2025 FPEIR, for year 2025 conditions, the Project site is not located within a 70 dBA CNEL contour associated with roadway noise, freeway noise, or rail noise (GPA 2025 FPEIR, Figures 5.11-6 through 5.11-8). According to the 2014 Riverside County Airport Land Use Compatibility Plan (MARB/IPA LUCP), the proposed Project is also outside the 65 to 75 dB CNEL noise contours associated with projected activity levels for the March Air Reserve Base/Inland Port Airport (MARB/IPA LUCP, Volume 2, Chapter W7, Exhibit MA-4). For these reasons**, noise impacts to the Project will be less than significant**.

[4] Traffic noise is discussed under Threshold C.

Noise Impacts from the Project

Implementation of the proposed Project will result in short-term noise generated by Project construction activities and long-term noise generated by on-site operations and vehicular traffic on area streets. Because the City does not have a noise standard for vehicular-sourced noise, these impacts are discussed under Threshold C.

Construction Noise

Construction noise is considered temporary and short-term because once construction is completed this noise source ceases. Construction noise will result from the transport of workers, the movement of construction material to and from the Project site, ground clearing, excavation, grading, and building activities. Project generated construction noise will vary depending on the construction process, type of equipment involved, location of the construction site with respect to sensitive receptors, the schedule proposed to carry out each task (e.g., hours and days of the week) and the duration of the construction work. Site preparation is expected to produce the highest sustained construction noise levels. (KA, p. 18)

Table 5.7-G – Construction Equipment and Predicted Construction Noise Levels, identifies typical noise levels associated with equipment that will be used during the site grading phase of Project construction. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. (KA, p. 18)

Table 5.7-G – Construction Equipment and Predicted Construction Noise Levels[a]

Type of Equipment	Suggested Maximum Sound Levels (L_{max}) in dBA at 50 feet	Acoustical Use Factor (%)
Rock Drills	85	20
Jack Hammers	85	20
Pneumatic Tools	85	50
Pumps	77	50
Dozers	85	40
Scrapers	85	40
Haul Trucks	88	40
Cranes	85	16
Generators	82	50
Rollers	85	20
Tractors	84	40
Front-End Loaders	80	40
Excavators	85	40
Graders	85	40
Air Compressors	80	40

Type of Equipment	Suggested Maximum Sound Levels (L_{max}) in dBA at 50 feet	Acoustical Use Factor (%)
Water Truck (Dump truck)	84	40

Notes:

a Source: Kunzman Associates, Inc., *Noise Impact Analysis for the Sycamore Canyon Business Park Warehouse*, August 1, 2016, Table 5 (Appendix I).

Because of the topographical differences between the Project site and the location of sensitive receptors, the SoundPLAN Noise Model[5] was used to calculate a worst-case construction noise scenario. The scenario modeled assumes the use of a grader, a rubber tired dozer, a D10 dozer, two water trucks (modeled as dump trucks), two loaders, and 10 scrapers all operating between 40 and 444 feet from the nearest sensitive receptors. Because the Project site contains large rocks, an active rock crusher was also modeled in the southeastern corner of the Project site. (KA, p. 18) As shown on **Figure 5.12-3 – Worst Case Construction Noise Scenario (L_{eq}) with No Temporary Barrier**, unmitigated noise levels may reach up to 80 dBA L_{eq} at the nearest single-family detached residential dwelling units north of the Project site. According to Table 7.25.010A (**Table 5.12-E – Riverside Municipal Code Exterior Nuisance Sound Level Limits)**, the daytime exterior noise standard for residential property is 55 dBA. Because construction noise will exceed 55 dBA at the property lines of the residential units adjacent to the Project site, this impact is considered **significant** and feasible mitigation is required.

The Sycamore Canyon Wilderness Park is located west of the Project site and as such will be exposed to construction noise. According to Riverside Municipal Code Table 7.25.010A (**Table 5.12-E)**, the exterior noise standard for public recreation facilities is 65 dBA. Since the construction equipment will be in use throughout the entire Project site, unmitigated construction noise levels at the property line between the Park and the Project site may also reach up to 80 dBA L_{eq}. **This impact is considered significant and feasible mitigation is required**.

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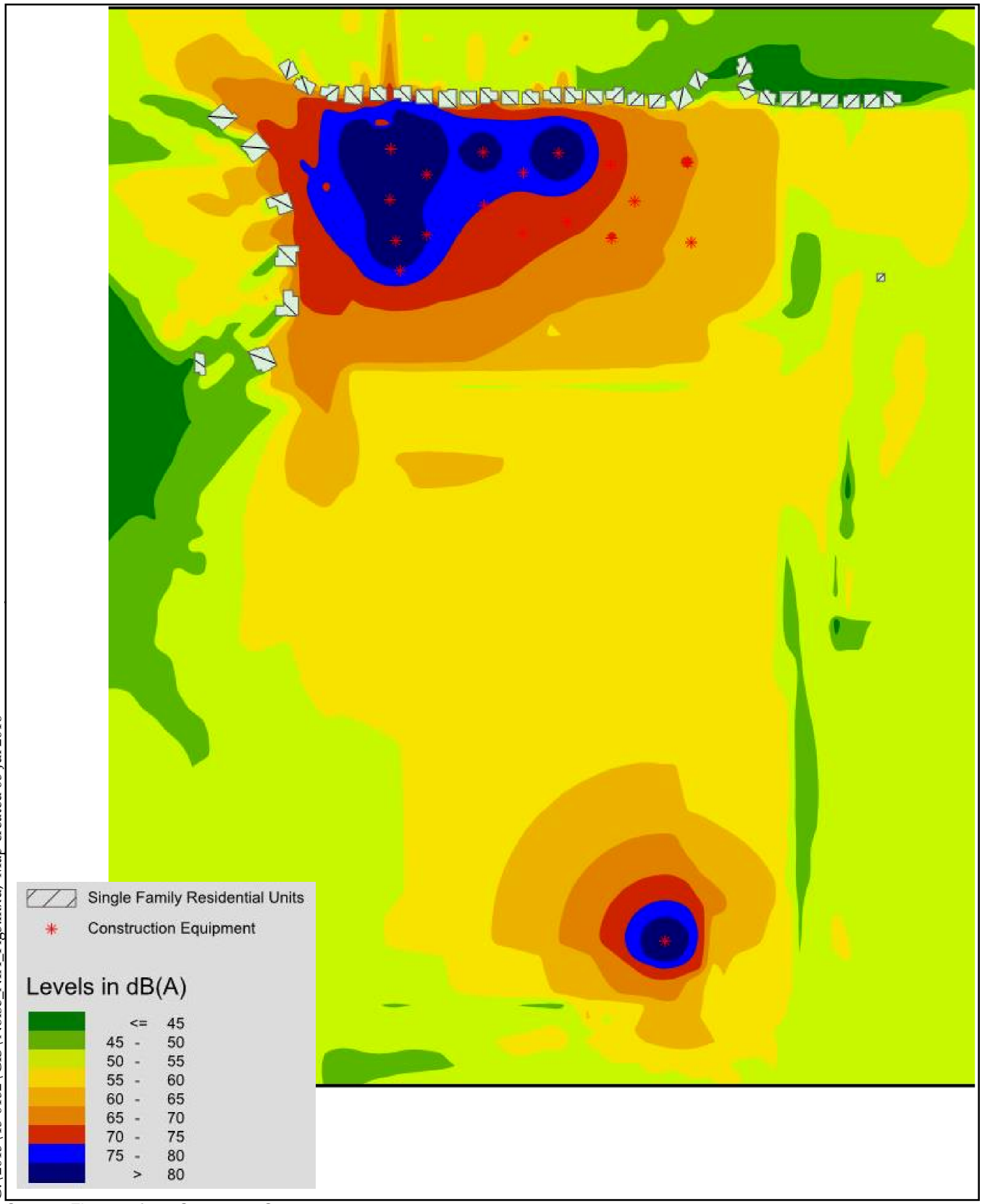
[5]The SoundPLAN Noise Model was used for this analysis as this model can consider differences in topography between a noise source and a receptor.



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Source: Figure 5 from Sycamore Canyon Business Park Warehouse Noise Imapct Analysis (Draft), June 2016; Kunzman Assoc.

NOT TO SCALE

Figure 5.12-3 - Worst Case Construction Noise Scenario (Leq) with No Temporary Barrier

Sycamore Canyon Business Park Buildings 1 and 2 DEIR

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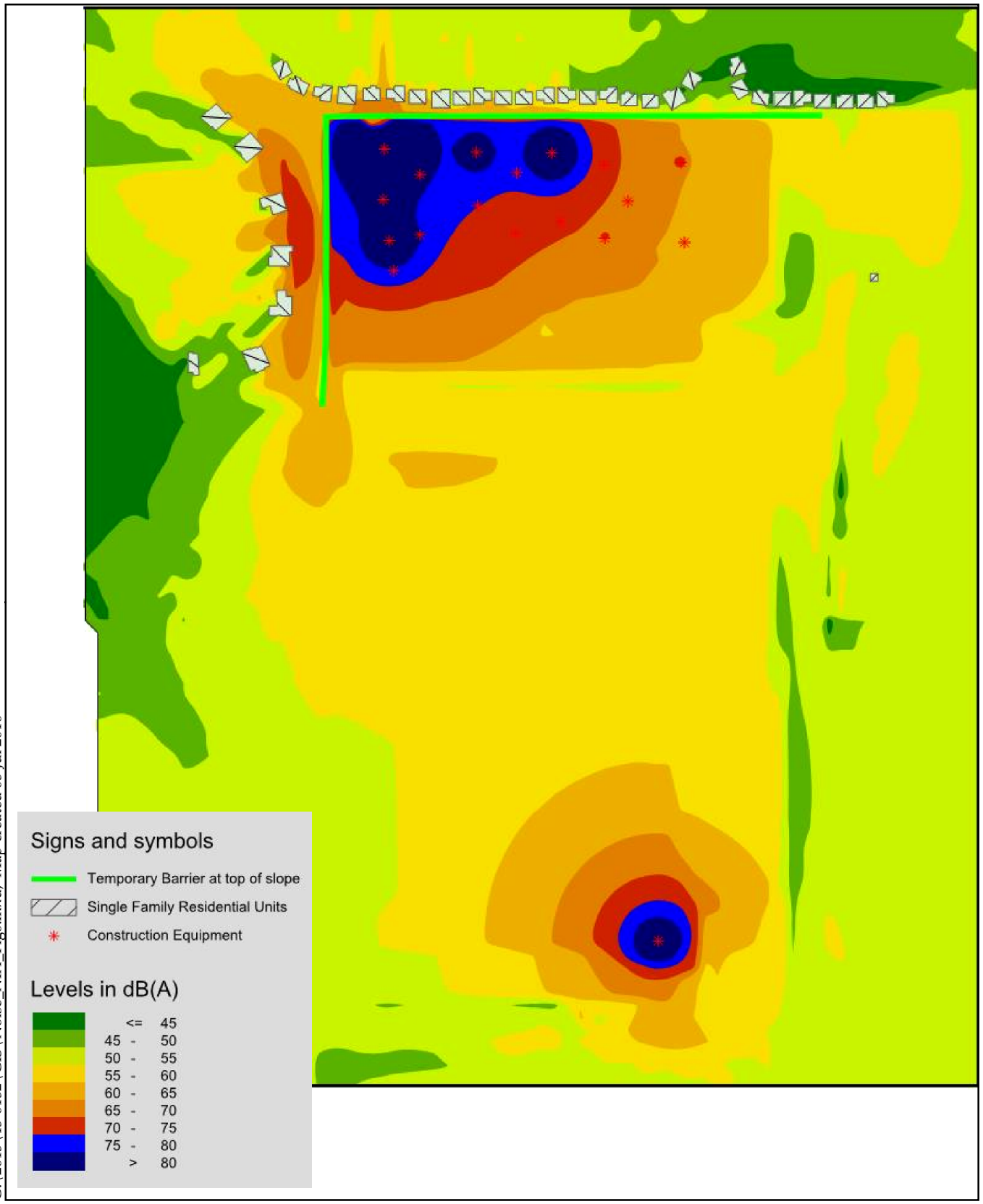
Mitigation measure **MM NOI 1** requires the installation of a 12-foot high temporary noise barrier at the Project site's northern and western boundaries. As shown on **Figure 5.12-4 – Worst Case Construction Noise Scenario (L_{eq}) with 12-Foot High Temporary Barrier**, construction noise levels at the residential property lines at the northern and western boundaries of the Project site are not expected to exceed 70 dBA. (KA, pp. 18, 29 (Figure 5), 30 (Figure 6)) Because some of these noise levels exceed 55 dBA, additional mitigation is required to further reduce construction noise. Thus, the Project will implement mitigation measures **MM NOI 2** through **MM NOI 12**. These measures require: the use of heavy grade rubber mats within the bed of trucks; properly operating mufflers on all construction equipment; placement of stationary construction equipment away from the residential uses; no idling of equipment when not in use; staging of equipment at the greatest distance feasible from the sensitive receptors; prohibition of music or amplified sound on the Project site during construction; limiting haul truck deliveries to the same hours for construction equipment; limiting the use of heavy equipment, vibratory roller, and soil compressors to the greatest degree possible, shielding of jackhammers, pneumatic equipment, and all other portable stationary noise sources to direct noise away from sensitive receptors. Signage will also be placed on the project site with a contact phone number for complaints. Implementation of **MM NOI 1** through **MM NOI 12** is expected to yield up to an additional 10 dBA in noise reduction to minimize maximum noise events (KA, p. 18). **Even with implementation of feasible mitigation measures, temporary impacts from construction noise on the adjacent residences and Sycamore Canyon Wilderness Park will be significant and unavoidable**.

Operational Noise

Sensitive receptors that may be affected by the Project's operational noise include the surrounding single-family detached residential dwellings units adjacent to and in the vicinity of the Project site. (KA, p. 18) Although not considered a sensitive receptor, portions of the Sycamore Canyon Wilderness Park will also be exposed to operational noise from the Project.

The noisiest hour on-site Project operational noise was modeled utilizing the SoundPLAN model. Existing and proposed elevation lines and points on the Project site and adjacent residential uses were uploaded into the model in order to take into account the effects of topography. (KA, p. 19)

Project operations will generate noise from vehicle movements within the proposed parking areas, idling trucks, loading and unloading activities, trash compactors and rooftop HVAC systems. The dominant operational noise will generally include noise associated with semi-trucks (tractor-trailers) entering and exiting the Project site and accessing dock areas, removal and hook-up of trailers, occasional truck air brakes, and vehicles associated with employees.. The dock doors and trailer parking areas were modeled as area sources with a sound pressure level of 65 to 67 dBA. (KA, p. 19)



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Source: Figure 6 from Kunzman Assoc., 2016.

Figure 5.12-4 - Worst Case Construction Noise Scenario (Leq) with 12-Foot High Temporary Barrier

Sycamore Canyon Business Park Buildings 1 and 2 DEIR

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Parking lot noise was modeled by dividing peak hour trip generation by the number of parking stalls in each area. Noise associated with parking lots include but are not limited to idling cars, doors closing, and starting engine noise. SoundPLAN reference sound power levels for parking areas include automobile and heavy truck movements, vehicles starting, and doors being shut. (KA, p. 19)

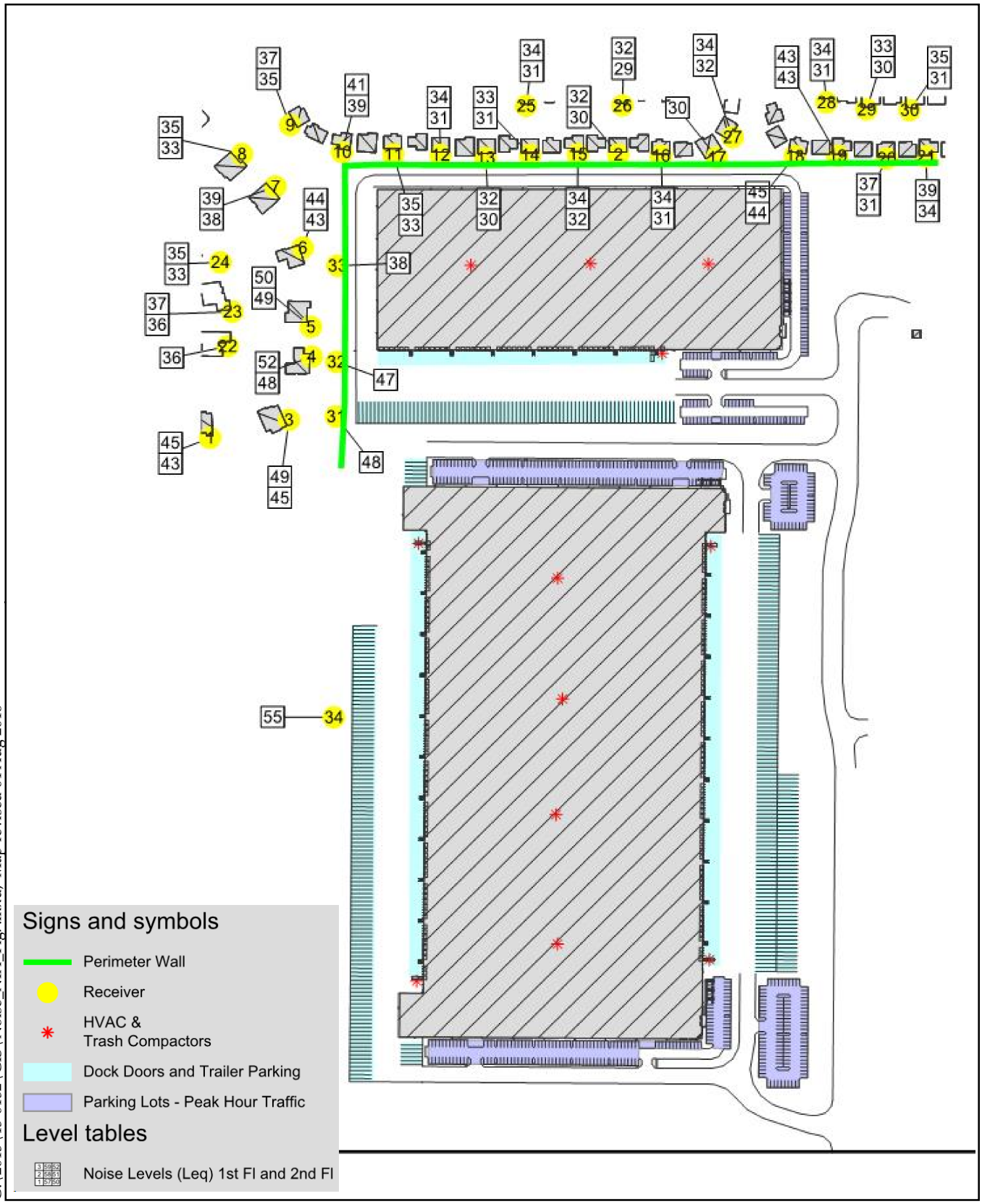
The rooftop HVAC equipment was modeled as a point source and was placed on-top of the structures' roofs. For modeling purposes, SoundPLAN's reference sound power level of 85 dB was used. Five trash compactors as shown on the Project's site plan (**Figure 3-10 – Proposed Site Plan**) were modeled using a sound pressure level of approximately 67.9 dBA at a distance of 10 feet, was utilized to represent each trash compactor. Usage factors were applied to the trash compactors as they are not expected to be utilized more than once an hour. (KA, p. 19)

To thoroughly evaluate the proposed Project's operational noise impacts on the surrounding residences, a total of 30 receptors were modeled. The location of the receptors and the unmitigated noise levels are shown on **Figure 5.12-5 – Operational Noise Levels (L_{eq}) No Mitigation**. As shown on **Figure 5.12-5**, noise levels at the first floor of the receptors north of the Project site range from 30 to 44 dBA L_{eq}. Assuming noisiest conditions, noise levels at the second floor of these receptors range from 32 to 45 dBA L_{eq}. The noise levels at all of these receptors are less than the daytime exterior noise standard of 55 dBA L_{eq}. The noise levels at all of the receptors north of the Project site are less than the nighttime exterior noise standard of 45 dBA L_{eq}.

As also shown on **Figure 5.12-5**, assuming noisiest conditions noise levels at the first floor of the receptors adjacent to the northwestern boundary of the Project site range from 33 to 49 dBA L_{eq}. Noise levels at the second floor of these receptors range from 35 to 52 dBA L_{eq}. The noise levels at all receptors adjacent to the northwestern boundary of the Project site are less than the daytime noise standard of 55 dBA L_{eq}. The noise levels at all receptors adjacent to the northwestern boundary of the Project site are less than the nighttime exterior noise standard of 45 dBA L_{eq} except for receptor nos. 3 and 4.

The operational noise level at the property line between the Project site and the Sycamore Canyon Wilderness Park is 55 dBA L_{eq} (see **Figure 5.12-5**). Because this noise level is less than the Municipal Code noise standard for public recreational facilities (65 dBA L_{eq}), **operational noise impacts to the Sycamore Canyon Wilderness Park are less than significant.**

Without mitigation, project operational noise levels are expected to range between 30 and 52 dBA L_{eq} at nearby sensitive receptors and up to 55 along the property line. Unmitigated operational noise will not exceed the daytime noise standards of 55 dBA L_{eq}. However, they will exceed the nighttime 45 dBA L_{eq} along the western project boundary and at the single-family detached residential dwelling units adjacent to the northwest corner of the site.



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Source: Figure 7 from
Kunzman Assoc., August 2016.

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Figure 5.12-5 - Operational Noise Levels (Leq)
No Mitigation

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As shown on **Figure 5.12-6 – Operational Noise Levels (L_{eq}) with Mitigation**, in order to mitigate nighttime project operational noise levels to the nighttime standard of 45 dBA L_{eq} at affected sensitive receptors (i.e., receptor nos. 3 and 4) a ten-foot noise barrier is required along the perimeter of the outdoor use areas (KA. p. 19) per mitigation measure **MM NOI 16**. In addition to the noise barrier, the loading area and trailer parking located just south of Building 2 and within 360 feet of the western property line, as shown on **Figure 5.12-6 – Operational Noise Levels (L_{eq}) with Mitigation,** will be limited as indicated in mitigation measure **MM NOI 15**. Because the affected homes are of newer construction, they are expected to provide at least 10 dB of exterior to interior noise reduction with their windows open (Caltrans). Therefore, with construction of the aforementioned ten-foot barrier, interior noise levels at the affected single-family detached residential dwelling units are not expected to exceed the City's interior noise standard of 35 dBA L_{eq}.

The ten-foot tall barriers are required at the eastern edge of the residential lots identified as receptor nos. 3 and 4, not at the property line at the bottom of the slope. These residences are private property that are not owned or controlled by the Project proponent or the City. If the private owners do not allow the noise barrier to be constructed across the properties, mitigation measure **MM NOI 16** cannot be implemented. Because the implementation of mitigation measure **MM NOI 16** is dependent on the private property owners, the mitigation is considered infeasible and **operational noise impacts are considered significant**.

In addition to the "base" daytime and nighttime noise standards identified in **Tables 5.12-E and 5.12-F**, the City's Noise Ordinance also includes several other noise level criteria that are based on the percentage of time a particular noise level is exceeded over a measurement period. These criteria are represented by the L_{max}, L_{50}, L_{25}, L_8 and L_2 criteria. Because the Project is unlikely to exceed the City's most strict noise standard which is the L_{eq} standard, it is also unlikely that the, L_{max}, L_{50}, L_{25}, L_8 and L_2 criteria would be exceeded. Activities that may violate these shorter time/louder criteria thresholds as presented in Municipal Code Section 7.25.010 include back-up warning beepers, trash compactor and loading activities. The maximum exterior noise level standards (L_{max}) for residential uses are 75 dBA for daytime hours and 65 dBA for nighttime hours. [6] Normal construction with windows open will provide 10 dBA of exterior to interior noise reduction (Caltrans). Two potential on-site operational activities may violate these shorter time/louder criteria presented in Municipal Code Section 7.25.010 — refrigeration units and back-up warning beepers.

With regard to refrigeration units, as described in mitigation measure **MM AQ 14**, electrical hookups shall be installed at all loading docks to allow transport refrigeration units (TRUs) with electric standby capabilities to plug in when TRUs are in use. Trucks incapable of using the

[6] Per Section 7.25.010 A.5 of the Riverside Municipal Code, the maximum noise event shall not exceed the standard for the applicable land use plus 20 dBA. The daytime and nighttime exterior residential standards per Table 5.25.010A are 55 dBA and 45 dBA, respectively. Thus the maximum daytime and nighttime standards are 75 DBA and 65 dBA respectively.

electrical hookups shall be prohibited from accessing the site as set forth in the lease agreement. Therefore, noise from refrigeration units will be reduced to less than significant.

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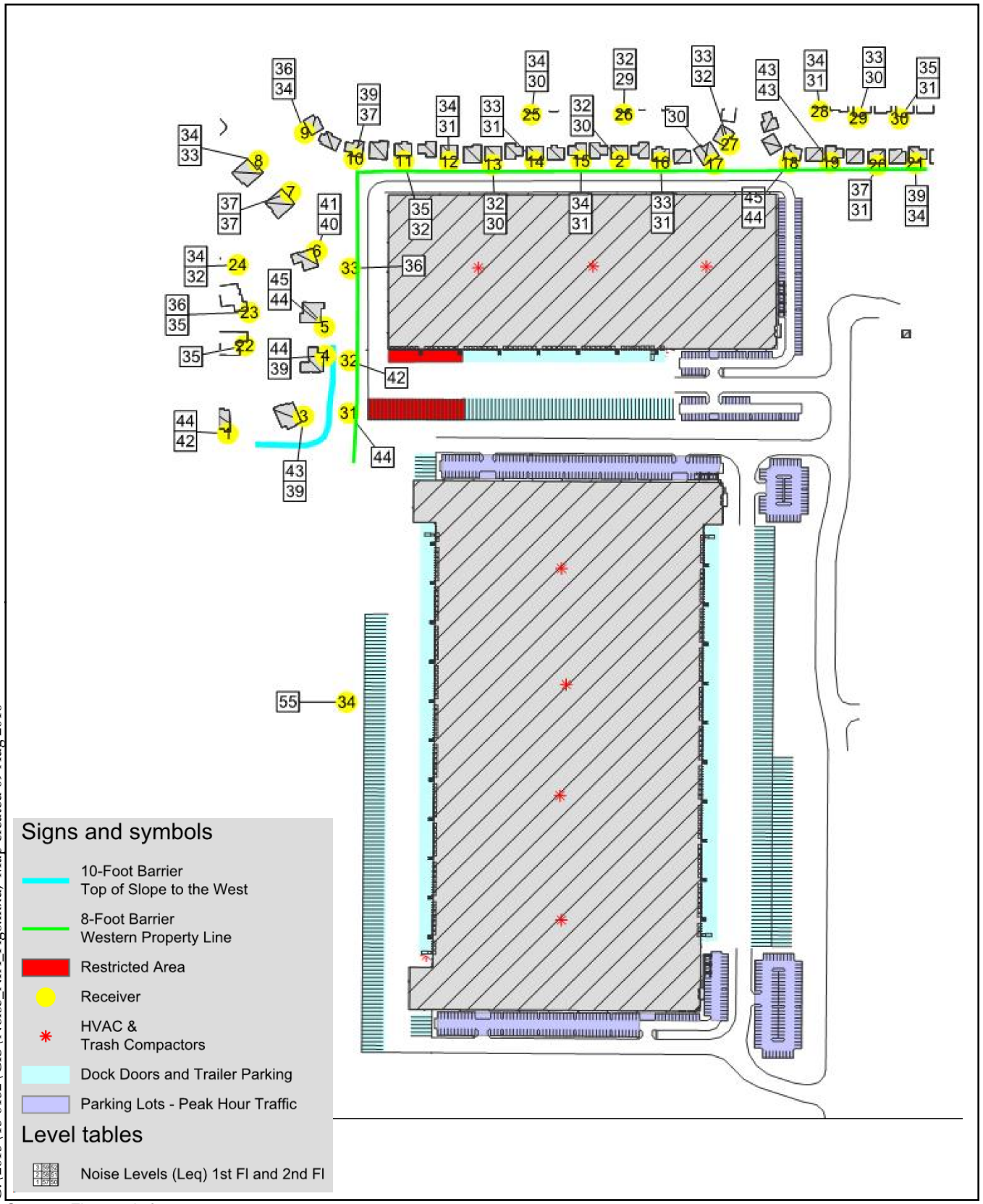

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Source: Figure 7b from
Kunzman Assoc., August 2016.

Figure 5.12-6 - Operational Noise Levels (Leq) with Mitigation

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Noise levels generated by back up warning beepers may vary depending on the manufacturer and use of the beeper. A maximum noise event associated with a warning beeper situated in the loading area closest to sensitive receptors to the west was modeled in SoundPLAN.[7] As shown on **Figure 5.12-7 – Back Up Beeper Operational Noise Levels (L_{max}) with No Mitigation**, noise associated a back-up beeper could be up to 55 dBA L_{max} at the second floor of the nearest residence (receptor no. 4). This noise level is less than both the maximum exterior daytime noise standard of 75 dBA L_{max} and the maximum exterior nighttime noise standard of 65 dBA L_{max} as set forth in Section 7.25.010 A.5 of the Riverside Municipal Code. [8]

With construction of a ten-foot barrier at the top of the slope to the west as outlined in **MM NOI 16**, noise levels associated with the back up beeper are expected to reach up to 44 dBA L_{max} at the top of the slope to the west of the project site. (KA, Figure 8b). Even without construction of the ten-foot barrier at the top of the slope west of the project site, back up beeping noise will not exceed the daytime noise standard of 75 dBA L_{max} or the nighttime maximum noise standard of 65 dBA L_{max}.

Assuming 10 dB of noise reduction with windows open, the noise levels from back-up beepers at the interior of adjacent residences will be approximately 44 dBA L_{max}, which will not exceed the City's maximum daytime or nighttime interior noise standards of 55 dBA L_{max} and 45 dBA L_{max}, respectively, as set forth in Section 7.35.010 A.5.[9] Nonetheless, in order to minimize noise associated with use of back-up beepers at the Project site, the Project will implement mitigation measure **MM NOI 13,** which requires the use of ambient-sensitive self –adjusting or manually-adjustable back up alarms.

Trash compactors typically generate maximum instantaneous noise levels of 70 to 75 dBA L_{max} at a distance of 50 feet. A trash compactor with a sound power level of 120 dB was modeled at the two nearest proposed locations. (KA, Figures 9a, 9b, 10a, 10b). Unmitigated noise levels associated with Trash Compactor A may reach up to 59 dBA L_{max}. (KA, Figure 9a). With construction of a ten-foot barrier at the top of the slope to the west as outlined in **MM NOI 16**, noise levels associated with the back up beeper are expected to reach up to 58 dBA L_{max} at the top of the slope to the west of the project site. (KA, Figure 9b) Unmitigated noise levels associated with Trash Compactor B may reach up to 62 dBA L_{max}. (KA, Figure 10a).

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[7] Modeling was performed in SoundPLAN using a sound pressure level of 66.4 dBA at a distance of 50 feet (KA, p. 20).

[8] Per Section 7.25.010 A.5 of the Riverside Municipal Code, the maximum noise event shall not exceed the standard for the applicable land use plus 20 dBA. The daytime and nighttime exterior residential standards per Table 5.25.010A are 55 dBA and 45 dBA, respectively. Thus the maximum daytime and nighttime standards are 75 DBA and 65 dBA respectively.

[9] Per Section 7.35.010 A.5 of the Riverside Municipal Code, the maximum noise event shall not exceed the standard for the applicable land use plus 10 dBA. The daytime and nighttime interior residential standards per Table 5.30.015A are 45 dBA and 35 dBA, respectively. Thus the maximum daytime and nighttime standards are 55 DBA and 45 dBA respectively.

With construction of a ten-foot barrier at the top of the slope to the west as outlined in **MM NOI 16**, noise levels associated with the trash compactors are expected to reach up to 52 dBA L_{max} at the top of the slope to the west of the project site. (KA, Figure 10b) Even without construction of the ten-foot barrier at the top of the slope west of the project site, trash compactor noise will not exceed the daytime noise standard of 75 dBA L_{max} or the nighttime maximum noise standard of 65 dBA L_{max}.

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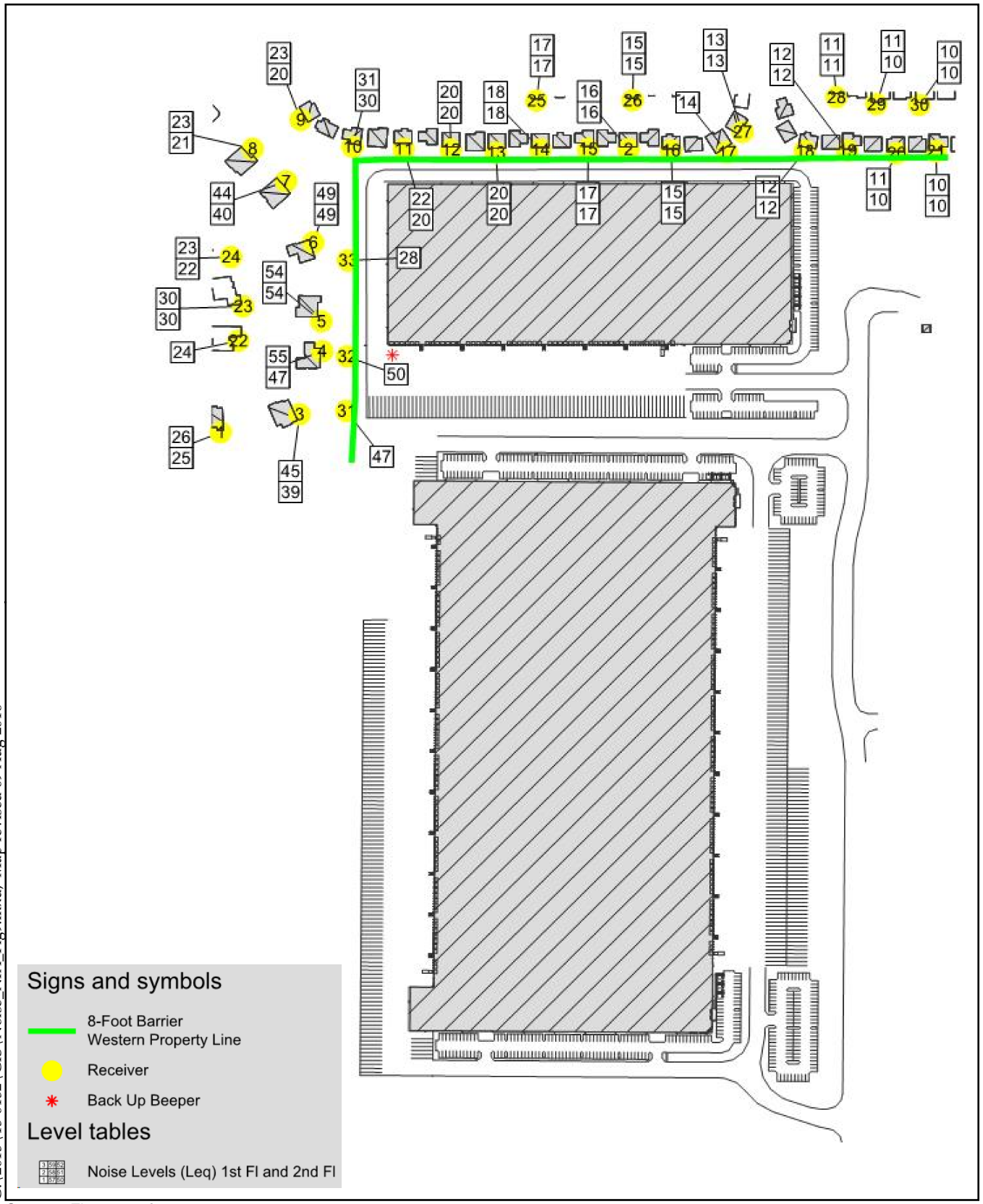

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Source: Figure 8a from Kunzman Assoc., August 2016.

Figure 5.12-7 - Back Up Beeper Operational Noise Levels (Lmax) with No Mitigation

Sycamore Canyon Business Park Buildings 1 and 2 DEIR

NOT TO SCALE

ALBERT A. WEBB ASSOCIATES

Unmitigated maximum noise events associated with the proposed loading dock areas (i.e., trailer un-hooking) could reach up to 73 dBA L_{max} at 50 feet. A sound power level of 104 was used to model this noise event in SoundPLAN. As shown on **Figure 5.12-8 – Dock Areas Operational Noise Levels (L_{max}) with No Mitigation**, maximum noise events, without mitigation could reach up to 63 dBA L_{max} at the nearest sensitive receptor which would not exceed daytime or nighttime exterior maximum noise standards.

With construction of a ten-foot barrier at the top of the slope to the west as outlined in **MM NOI 16**, maximum noise levels associated with dock areas are expected to reach up to 52 dBA L_{max} at the top of the slope to the west of the project site. (KA Figure 11b). Even without construction of the ten-foot barrier at the top of the slope west of the project site, maximum noise events associated with loading and unloading will not exceed the daytime noise standard of 75 dBA L_{max} or the nighttime maximum noise standard of 65 dBA L_{max}.

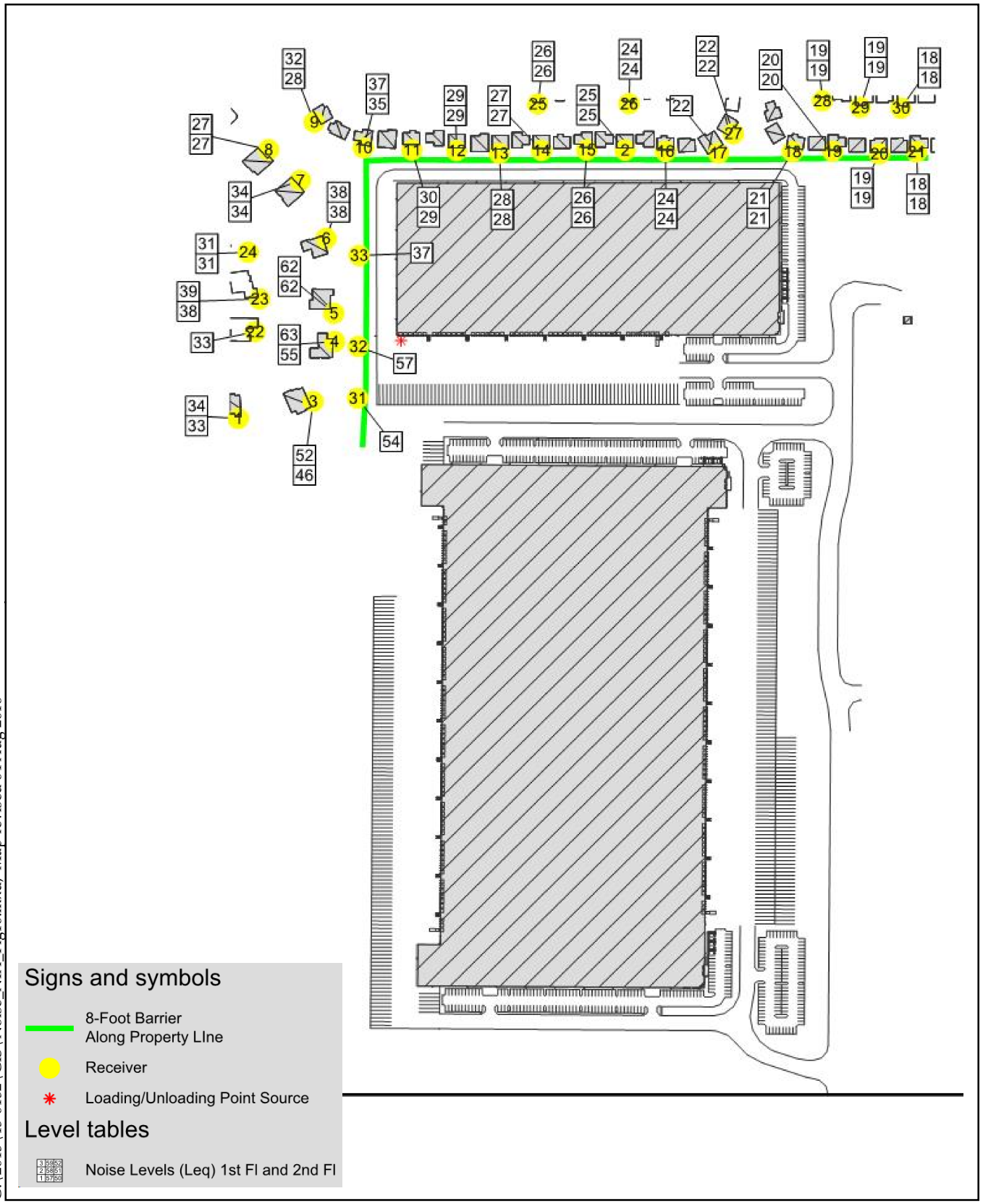
Assuming a 10 dB reduction for a windows open condition, noise resulting from trailer un-hooking would exceed the maximum nighttime interior noise standard of 35 dBA L_{max}. However, with implementation of mitigation measure **MM NOI 15**, which limits the use of the loading area and trailer parking located just south of Building 2 and within 360 feet of the western property line as shown on **Figure 5.12-6 – Operational Noise Levels (L_{eq}) with Mitigation**, there will be no exceedance of the maximum interior noise standard.

Project-Related Vehicular Noise

Because noise level increases resulting from new Project-related traffic on area roadways are not regulated by the Riverside Municipal Code, there are no standards for this type of noise. Project-related vehicular noise is evaluated under Threshold C.

Conclusion

Even with implementation of feasible mitigation measures **MM NOI 1** through **MM NOI 12,** which will reduce construction noise by approximately 10 dBA (KA, p. 18), Project-related construction activities will result in temporary and periodic exposure of persons to and generation of noise levels in excess of standards established in the Riverside Municipal Code. Even with implementation of feasible mitigation measures, temporary impacts from construction noise on the adjacent residences and Sycamore Canyon Wilderness Park will be **significant and unavoidable**. Unmitigated operational noise will not exceed the daytime noise standard of 55 dBA L_{eq}. However, it will exceed the nighttime noise standard of 45 dBA L_{eq} along the western project boundary and at certain residential units adjacent to the northwest corner of the Project site. Implementation of **MM NOI 13** through **MM NOI 16** will reduce operational noise impacts; however, because the noise barrier outlined in **MM NOI 16** would be on private properties, the Project proponent does not have control over construction of the noise barrier. For this reason, **impacts are significant** even with incorporation of feasible mitigation.



G:\2015\15-0152\GIS\Noise_NIA_Fig10.mxd; Map revised 04 Aug 2016

Source: Figure 10 from
Kunzman Assoc., August 2016.

Figure 5.12-8 - Dock Areas Operational Noise Levels (Leq) with No Mitigation

Sycamore Canyon Business Park Buildings 1 and 2 DEIR

NOT TO SCALE

ALBERT A. WEBB ASSOCIATES

Threshold B: *Would the Project cause the exposure of persons to or the generation of excessive groundborne vibration or groundborne noise levels?*

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods employed. Operation of construction equipment causes ground vibrations that spread through the ground and diminish in strength with distance. Buildings founded on the soil in the vicinity of the construction site respond to these vibrations, with varying results ranging from no perceptible effects at the lowest levels, low rumbling sounds and perceptible vibrations at moderate levels, and slight damage at the highest levels. Ground vibrations from construction activities do not often reach the levels that can damage structures, but they can achieve the audible and feelable/perceptible ranges in buildings very close to the site. (FTA, p. 12-10) **Table 5.12-H – Typical Human Reaction and Effect on Buildings Due to Groundborne Vibration,** displays some of the common human reactions to various levels of groundborne vibration (expressed in PPV) and its effect on buildings.

Table 5.12-H – Typical Human Reaction and Effect on Buildings Due to Groundborne Vibration[a]

Vibration Level (PPV[b]) (inches/second)	Human Reaction	Effect on Buildings
0.006-0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibration readily perceptible	Recommended upper level of vibration to which ruins ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of "architectural" (i.e., not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to "architectural" damage to normal dwelling – houses with plastered walls and ceilings
0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Notes:

a Source: Kunzman Associates, Inc., *Noise Impact Analysis for the Sycamore Canyon Business Park Warehouse*, August 1, 2016, Table 2, p.7.

b PPV = Peak Particle Velocity.

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 as shown in **Table 5.12-I – Vibration Source Levels for Construction Equipment**. In this table, a crest factor of 4 (representing a PPV to RMS difference of 12 VdB) has been used to calculate the

approximate RMS vibration velocity levels from the PPV values. 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 provide a reasonable estimate for a wide range of soil conditions.

Table 5.12-I – Vibration Source Levels for Construction Equipment[a]

Equipment	PPV at 25 feet (inches/second)	RMS[b] at 25 feet
Large Bulldozer	0.089	87
Caisson Drill	0.089	87
Loaded Truck	0.076	86
Jackhammer	0.35	79
Small Bulldozer	0.003	58

Notes:

[a] Source: Kunzman Associates, Inc., *Noise Impact Analysis for the Sycamore Canyon Business Park Warehouse*, August 1, 2016, Table 1, p.6 and Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

[b] RMS velocity in decibels (VdB) re 1 micro-inch/second.

Regarding impacts from ground-borne vibration, the Federal Transit Administration (FTA) has published guidance in their document titled *Transit Noise and Vibration Impact Assessment*. According to the FTA, buildings can be exposed to ground-borne vibration levels of 0.5 PPV without experiencing structural damage. Additionally, the FTA has determined that humans can experience vibration levels up to 80 VdB (RMS) before being adversely affected by vibration.

As shown above in **Table 5.12-I,** use of heavy construction equipment (e.g., a large bulldozer) generates vibration levels of 0.089 PPV or 87 RMS at a distance of 25 feet. According to **Table 5.12-I** this vibration level will be perceptible at 25 feet but is not considered annoying and would not damage modern structures.

Sensitive receptors that may be affected by Project construction-related vibration include the existing residences to the north and west of the Project site. The nearest residential structure west of the Project site is approximately 74 feet from the property line and 81 feet from the area to be graded. The nearest residential structure north of the Project site is approximately 14 feet from the property line and 46 feet from the area to be graded.

Ground-borne vibration attenuates quickly with distance and the PPV level from heavy equipment would be approximately 0.044 PPV at 40 feet. The majority of construction activity will be more than 40 feet from these residential structures and would not be considered annoying.

Additionally, the Project will comply with Section 7.35.010 of the Municipal Code, which prohibits construction, drilling, repair, alteration, grading, or demolition work that would result

in sound creating a noise disturbance across a residential or commercial property line between the hours of 7:00 p.m. and 7:00 a.m. on week days, between 5:00 p.m. and 8:00 a.m. on Saturdays, and at any time on Sunday or a federal holiday. Compliance with this regulatory requirement would further minimize potential impacts due to construction-related vibration. Therefore, potential impacts upon persons or structures due to construction-related vibration are **less than significant.**

Threshold C: *A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.*

According to the *City of Riverside General Plan 2025 Final Program Environmental Impact Report* (the GP 2025 FPEIR), the City does not have an established standard that ties a specific increase in ambient noise to a significance determination. Although the City relies on the noise compatibility matrix in the GP 2025 Noise Element (**Figure 5.12-2 – Noise/Land Use Compatibility Criteria**) to determine if a future development project will be subject to significant noise impacts, whether self-created or from the existing environment, this threshold related to ambient noise levels is not addressed by that approach. (GP 2025 FPEIR, p. 5.11-26).

The term "substantial," as used in this regard, is not defined in most environmental compliance guidelines. For reference, noise analysis methodology is accurate only to the nearest whole decibel and most people only notice a change in the noise environment when the difference in noise levels is around 3 dBA CNEL. A 5 dBA change (i.e., increase or decrease) in noise levels is required before any noticeable change in community response would be expected (GP 2025 FPEIR, p. 5.11-26). Therefore, for purposes of this threshold, a clearly perceptible increase (+5 dB) in noise exposure of sensitive receptors is considered substantial.

Potential permanent or long-term noise impacts associated with the Project include on-site sources from typical Project operations (discussed under Threshold A) and off-site sources such as Project-specific traffic increases on area roadways.

On-Site Noise

As discussed under Threshold A, Project operations will generate noise from vehicle movements within the proposed parking areas, idling trucks, loading and unloading activities, and rooftop HVAC systems. The dominant operational noise will generally include noise associated with truck diesel engines, exhaust systems, braking, and forklifts. Parking lot noise includes idling cars, doors closing, and starting engine noise. To determine the increase in ambient noise resulting from Project operations, the existing ambient noise at noise monitoring locations ST1/LT1 and ST2/LT2 as shown on **Figure 5.12-1 – Noise Measurement Locations**) was compared to mitigated operational noise levels at receptors 18, 10, and 6 as shown on **Figure 5.12-6 – Operational Noise Levels with Mitigation**. These receptors were selected for comparison because they are the nearest sensitive receptors to the monitored locations.

In order compare the pre- and post-Project noise levels, the 24-hour ambient noise measurements and the operational noise levels with mitigation were converted to CNEL.

Assuming the proposed Project operates 24-hours a day, the projected increase in noise levels range from 2 dBA to 7 dBA as shown in **Table 5.12-J – Pre- and Post-Project Noise Levels (in CNEL)**. Receptor 18 and 19 in the table below were selected because they will experience the highest mitigated operational noise levels of the properties north of the Project site. All of the receptors that share the Project site's westerly property line are included in Table 5.12-K. receptors 3, 4, 5, and 6 represent the top of the slope of those residences. Receptors 31, 32, and 33 represent a point 10 feet east of the western property line. Receptor 34 is 10 feet east of the western property line and represents the Sycamore Canyon Wilderness Park.

Table 5.12-J – Pre- and Post-Project Noise Levels (in CNEL)

Monitored Location[a]	Measured Noise Level (CNEL[b]) In dBA	Receptor No.[c]	Mitigated Operational Noise Level (CNEL[c]) In dBA	Difference In dBA	Substantial Increase?
ST1/LT1	60	18 (1st floor)	51	-9	No
		18 (2nd floor)	52	-8	No
		19 (1st floor)	50	-10	No
		19 (2nd floor)	50	-10	No
ST2/LT2	52	6 (1st floor)	47	-5	No
		6 (2nd floor)	48	-4	No
		5 (1st floor)	51	-1	No
		5 (2nd floor)	52	0	No
		4 (1st floor)	46	-6	No
		4 (2nd floor)	51	-1	No
		3 (1st floor)	46	-6	No
		3 (2nd floor)	50	-2	No

Monitored Location[a]	Measured Noise Level (CNEL[b]) In dBA	Receptor No.[c]	Mitigated Operational Noise Level (CNEL[c]) In dBA	Difference In dBA	Substantial Increase?
ST2/LT2	52	10 Feet West of the Project Site's Western Property Line			
		31	51	-1	No
		32	49	-3	No
		33	43	-9	No
		34	62	10	**Yes**

Notes:

a Location as shown on **Figure 5.12-1 – Noise Measurement Locations**

b CNEL calculated using the hourly measured rates from **Table 5.12-C – Existing 24-Hour Noise Levels in Project Vicinity** and the Ldn, Lden, CNEL Community Noise Calculators at https://www.noisemeters.com/apps/ldn-calculator.asp. (NMI)

c Location as shown on **Figure 5.12-6 – Operational Noise Levels with Mitigation**

d CNEL calculated assuming 24-hour operations at the mitigated noise levels shown on **Figure 5.12-6** and the Ldn, Lden, CNEL Community Noise Calculators at https://www.noisemeters.com/apps/ldn-calculator.asp. (NMI)

As shown in Table **Table 5.12-J – Pre- and Post-Project Noise Levels (in CNEL)** changes in mitigated operational noise levels in comparison to the measured ambient noise levels range from negative 10 dBA (i.e. with the proposed Project the CNEL will be lower) to 10 dBA. It is important to note that the only receptor location that will experience a CNEL increase of 5 dBA or greater is located approximately 10 feet east of the westerly Property line in the Sycamore Canyon Wilderness Park. Because the change in noise levels resulting from Project operations will be perceptible (i.e. 5 dBA or greater at certain receptors), this is considered a substantial increase. However, this increase is not a significant impact, because there are no sensitive receptors at receptor location 34, which is the Sycamore Canyon Wilderness Park and the Project's mitigated noise levels are within the GP 2025 "Normally Acceptable" compatibility criteria (55-70 dBA) for neighborhood park land uses (**Figure 5.12-2 – Noise/Land Use Compatibility Criteria**).

Off-Site Noise

Off-site noise levels from Project-generated traffic were modeled using the FHWA Traffic Noise Prediction Model along roadway segments in the Project vicinity. Project-specific increases in noise levels at a distance of 50 feet from roadway centerline was used to provide a direct comparisons of potential increases or decreases in noise levels based upon various traffic scenarios. It is important to note that at this distance from the roadway centerline, no specific noise standard necessarily applies. The change in noise levels is the focus of this analysis, rather than the resulting independent noise level for any one segment.

As discussed in Section 5.16 – Transportation/Traffic, the Project will generate approximately 2,409 new trips per day (WEBB, Table 4-2, p. 4-2). As shown in **Table 5.12-K – Change in Existing Noise Levels at 50 Feet from Centerline (Existing Plus Project Condition)**, increases to noise levels resulting from these additional trips rates are projected to be less than 1 dBA, which is not considered perceptible, at all affected roadway segments except Dan Kipper Drive and Sierra Ridge Drive. Project-related noise is expected to result in an approximate 2.7 dBA increase along Sierra Ridge Drive west of Sycamore Canyon Boulevard, which is not considered substantial. Project-generated traffic is projected to result in an approximate 7.2 dBA increase along Dan Kipper Drive west of Sycamore Canyon Boulevard. Although this increase is greater than 5 dBA and, as such, substantial, this impact is less than significant because noise levels will not exceed the 70 dBA GP 2025 "Normally Acceptable" compatibility criteria for Industrial and Manufacturing land uses (**Figure 5.12-2)**. In addition, the GP 2025 FEIR states that "a clearly perceptible increase (+5 dB) in noise exposure of sensitive receptors could be considered significant". While the increase is greater than 5 dBA, there are no sensitive receptors adjacent to this road segment, therefore the increase would not be considered significant.

Table 5.12-K – Change in Existing Noise Levels at 50 Feet from Centerline (Existing Plus Project Condition)[a]

Roadway Segment	CNEL at 50 Feet in dBA			
	Existing without Project	Existing plus Project	Change in Noise Level	Substantial Increase?
Fair Isle Drive-Box Springs Road				
Sycamore Canyon Boulevard to I-215 Freeway NB On-Ramps	60.5	60.6	0.1	No
Dan Kipper Drive				
w/o Sycamore Canyon Boulevard	39.9	47.2	7.2	**Yes**
Sierra Ridge Drive				
w/o Sycamore Canyon Boulevard	58.0	60.7	2.7	No
Eastridge Avenue				
Sycamore Canyon Boulevard to Box Springs Boulevard	62.6	63.0	0.5	No
Box Springs Boulevard to I-215 Ramps	62.3	63.6	0.4	No

Roadway Segment	CNEL at 50 Feet in dBA			
	Existing without Project	Existing plus Project	Change in Noise Level	Substantial Increase?
Sycamore Canyon Boulevard				
Fair Isle Drive to I-215 SB Ramps	64.5	64.6	0.1	No
I-215 SB Ramps to Dan Kipper Drive	64.0	64.1	0.1	No
Dan Kipper Drive to Box Springs Boulevard	63.8	63.9	0.1	No
Box Springs Boulevard to Sierra Ridge Drive	62.3	62.8	0.1	No
Sierra Ridge Drive to Eastridge Avenue	63.2	63.9	0.7	No

Notes:

[a] Source: Kunzman Associates, Inc., *Noise Impact Analysis for the Sycamore Canyon Business Park Warehouse*, August 1, 2016, Table 9 (Appendix I).

As shown in **Table 5.12-L – Change in Future Noise Levels at 50 Feet from Centerline (Existing Plus Ambient Plus Cumulative Plus Project Traffic Condition)**, the Project's contribution to future noise levels on area roadways is less than 1 dBA for all roadway segments except for Sierra Ridge Drive west of Sycamore Canyon Road. Project-related noise is expected to result in a 2.6 dBA increase along Sierra Ridge Drive west of Sycamore Canyon Boulevard, which is not substantial.

Table 5.12-L – Change in Future Noise Levels at 50 Feet from Centerline (Existing Plus Ambient Plus Cumulative Plus Project Condition)[a]

Roadway Segment	CNEL at 50 Feet in dBA			
	Existing plus Ambient Growth Plus Cumulative (2018)	Existing plus Ambient Growth Plus Cumulative Plus Project (2018)	Change in Noise Level	Substantial Increase?
Fair Isle Drive-Box Springs Road				
Sycamore Canyon Boulevard to I-215 Freeway NB On-Ramps	61.3	61.3	0.0	No
Dan Kipper Drive				
w/o Sycamore Canyon Boulevard	65.2	65.3	0.1	No

Roadway Segment	CNEL at 50 Feet in dBA			
	Existing plus Ambient Growth Plus Cumulative (2018)	Existing plus Ambient Growth Plus Cumulative Plus Project (2018)	Change in Noise Level	Substantial Increase?
Sierra Ridge Drive				
w/o Sycamore Canyon Boulevard	58.4	60.9	2.5	No
Eastridge Avenue				
Sycamore Canyon Boulevard to Box Springs Boulevard	63.2	63.4	0.4	No
Box Springs Boulevard to I-215 Ramps	64.1	64.5	0.4	No
Sycamore Canyon Boulevard				
Fair Isle Drive to I-215 SB Ramps	65.2	65.3	0.1	No
I-215 SB Ramps to Dan Kipper Drive	64.7	64.8	0.1	No
Dan Kipper Drive to Box Springs Boulevard	64.6	64.7	0.1	No
Box Springs Boulevard to Sierra Ridge Drive	63.6	63.7	0.1	No
Sierra Ridge Drive to Eastridge Avenue	64.1	64.7	0.6	No

Notes:

[a] Source: Kunzman Associates, Inc., *Noise Impact Analysis for the Sycamore Canyon Business Park Warehouse*, August 1, 2016, Table 10 (Appendix I).

Conclusion

Project implementation will result in noise level increases of 5 CNEL or greater above ambient noise levels from both on-site (Project operations) and off-site (Project-generated traffic) sources. The noise increase from Project operations is not considered a significant impact because while the change in noise levels resulting from post-Project mitigated noise levels[10] will be greater than 5 dBA for the Sycamore Canyon Wilderness Park, the noise levels will be within the GP 2025 "Normally Acceptable" compatibility criteria (55-70 dBA) for neighborhood park land uses. The noise increase from Project-generated traffic is not considered significant because although Project-generated traffic is projected to result in an approximate 7.2 dBA increase along Dan Kipper Drive west of Sycamore Canyon Boulevard, noise levels will not exceed the GP 2025 "Normally Acceptable" compatibility criteria for industrial and

[10] The mitigated operational noise levels assume implementation of mitigation measures **MM NOI 13 through MM NOI 16**.

manufacturing land uses and there are no sensitive receptors adjacent to this road segment. For these reasons, impacts with regard to a substantial permanent increase in ambient noise levels in the project vicinity are **less than significant with mitigation**.

Threshold D: *Would the proposed Project cause substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?*

The temporary increase in ambient noise resulting from Project construction is discussed under Threshold A. **Impacts were determined to be significant and unavoidable with feasible mitigation incorporated**.

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

The Project site is located within the March Air Reserve Base / Inland Import Airport Land Use Compatibility Plan (MARB/IPA LUCP). The Riverside County Airport Land Use Commission (ALUC) determined the proposed Project is consistent with the MARB/IPA LUCP on December 10, 2015 (ALUC Minute Order, ALUC Staff Report).

Approximately 46 acres of the Project site, consisting of Building 1, is located within Zone C1; while a small portion of Building 1 and the entirety of Building 2, approximately 28 acres, is located within Zone D of the LUCP (see **Figure 5.8-1b – Site Plan with MARB/IPA Land Use Compatibility Zones).** Zone C is the Primary Approach/Departure Zone and Zone D is the Flight Corridor Buffer. Noise impacts within Zone C1 are considered moderate to high because this zone is within or near the 60 CNEL contour and single-event noise may be disruptive to noise sensitive activities Noise impacts within Zone D are considered moderate to low because the this zone is mostly within the 55 CNEL contour. (MARB/IPA LUCP, Table MA-1, p. 3)

Single-event noise exposure levels from the planes using MARB/IPA will vary dependent upon the type of aircraft and flight track flown. Even through only a portion of the Project site is located within the 60 CNEL contour and the Project is not expected to include noise sensitive uses, mitigation measure **MM HAZ 3** will be implemented to ensure potential tenants and building owners are aware of the potential for disruptive noise events. Mitigation measure **MM HAZ 3** requires a deed notice and disclosure text to be provided to all potential purchasers and tenants of buildings within the Project site. Therefore, **impacts with regard to the exposure of people to excessive airport noise will be less than significant with mitigation**.

Threshold F: *Would the Project be located within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?*

There are no private airstrips located within the City, its Sphere of Influence, or in the area surrounding the Project site (GP 2025 FPEIR, p. 5.7-35; TFA). Therefore, **no impact** will occur

5.12.6 Proposed Mitigation Measures

An Environmental Impact Report is required to describe feasible mitigation measures which could minimize significant adverse impacts (State *CEQA Guidelines*, Section 15126.4).

Construction

In addition to adherence to the construction hours identified in the Municipal Code, the Project shall implement the following mitigation measures during construction.

MM NOI 1: To reduce noise impacts to the surrounding residences and Sycamore Canyon Wilderness Park, prior to any Project-related construction or site preparation, a 12-foot tall temporary noise barrier shall be installed along the Project site's northern and western property line. The barrier shall be continuous without openings, holes or cracks and shall reach the ground. The barrier may be constructed with1-inch plywood and provide a transmission loss of at least 23 dBA to ensure construction noise levels do not exceed 75 dBA at single-family residential units located near the proposed project. Other materials providing the same transmission loss shall also be permitted with the approval of the City Planning Division.

MM NOI 2: To attenuate initial impact noise generated when an excavator drops rock and debris into a truck bed, heavy grade rubber mats/pads shall be placed within the bed of the trucks. These mats shall be maintained and/or replaced as necessary.

MM NOI 3: During all Project-related excavation and grading, construction contractors shall equip all construction equipment, fixed and mobile, with properly operating and maintained mufflers, consistent with manufacturer standards.

MM NOI 4: All stationary construction equipment shall be located so that emitted noise is directed away from the residences to the north and west and from the Sycamore Canyon Wilderness Park to the west.

MM NOI 5: All construction equipment shall be shut off and not left to idle when not in use.

MM NOI 6: All equipment staging during all phases of construction shall be located in areas that will create the greatest distance between construction-related noise/vibration sources and the residences to the north and west and the Sycamore Canyon Wilderness Park to the west.

MM NOI 7: The use of amplified music or sound is prohibited on the Project site during construction.

MM NOI 8: Haul truck deliveries shall be limited to the same hours specified for construction equipment.

MM NOI 9: It is acknowledged that some soil compression may be necessary along the Project boundaries; however, the use of heavy equipment or vibratory rollers and soil compressors along the Project site's north and western boundaries shall be limited to the greatest degree feasible.

MM NOI 10: Jackhammers, pneumatic equipment, and all other portable stationary noise sources shall be shielded and noise shall be directed away from the residences to the north and west and Sycamore Canyon Wilderness Park to the west.

MM NOI 11: For the duration of construction activities, the construction manager shall serve as the contact person should noise levels become disruptive to local residents A sign shall be posted at the Project site with the contact phone number.

MM NOI 12: No blasting shall take place on the Project site.

Operation

The following mitigation measures, in addition to **AQ MM 14** and **MM HAZ 3** (restated below) shall be implemented during Project operations.

MM NOI 13: To reduce noise associated with the use of back-up alarms, either ambient-sensitive self-adjusting backup alarms or manually adjustable alarms shall be used on all equipment in use on the Project site that requires a backup alarm. Ambient-sensitive self-adjusting backup alarms increase or decrease their volume based on background noise levels. The alarm self-adjusts to produce a tone that is readily noticeable over ambient noise levels (a minimum increment of 5 decibels is typically considered readily noticeable), but not so loud as to be a constant annoyance to neighbors. Close attention shall be given to the alarm's mounting location on the machine in order to minimize engine noise interference, which can be sensed by the alarm as the ambient noise level. These alarms shall be mounted as far to the rear of the machine as possible. An alarm mounted directly behind a machine radiator will sense the cooling fan's noise and adjust accordingly.

If manually-adjustable alarms are used, each alarm shall be set at the beginning of each day and night shift. The manual setting feature eliminates the machine mounting location problem of the ambient-sensitive self-adjustable backup alarms. Alternatively, back-up movements can be supervised with a guide and flagging system.

MM NOI 14: To reduce operational noise at the residences located west of the Project site, no trucks shall use the northern access road or regular sized vehicle sized parking areas at Building 2 for site access, parking, queuing, or idling.

MM NOI 15: A restriction of nighttime use between the hours of 10:00 PM to 7:00 AM shall be implemented for the portion of the loading area and trailer parking located just south of Building 2 and within 360 feet of the western property line as shown on **Figure 5.12-6 – Operational Noise Levels (L_{eq}) with Mitigation**.

MM NOI 16: Prior to finalization of building permit, the temporary 12-foot noise barrier shall be removed and the Project applicant shall work with City Design Review staff and the property owners of receptor location 3 (6063 Bannock) and receptor location 4 (6066 Cannich) to determine the design and materials for a noise barrier that is mutually acceptable to the Project Applicant, City Design Review staff, and the property owners. The noise barrier shall be ten-foot high installed at the top of the slope of the residential properties west of the Project site. The designed noise screening will only be accomplished if the barrier's weight is at least 3.5 pounds per square foot of face area without decorative cutouts or line-of-site openings between the shielded areas and the project site. Noise control barrier may be constructed using one, or any combination of the following materials: masonry block; stucco veneer over wood framing (or foam core), or 1-inch thick tongue and groove wood of sufficient weight per square foot; glass (1/4 inch thick), or other transparent material with sufficient weight per square foot; or earthen berm.

Prior to the issuance of a Certificate of Occupancy for the Project, the Project applicant shall construct said noise barrier provided all of the property owners upon whose property the barrier is proposed to be constructed provide written authorization for such construction. The Project applicant shall provide written notice to the property owners of its intent to commence wall construction at least 90-days prior to the anticipated construction date. If all of the property owners do not authorize the construction of the wall in writing, including providing the applicant with all requisite legal access to the affected properties, within 60 days of applicant's written notice, the applicant shall instead pay to the property owners the equivalent cost to construct the wall, based on applicants good faith estimate.

MM AQ 14: Electrical hookups shall be installed at all loading docks to allow transport refrigeration units (TRUs) with electric standby capabilities to plug in when TRUs are in use. Trucks incapable of using the electrical hookups shall be prohibited from accessing the site as set forth in the lease agreement. The City shall verify electrical hookups have been installed prior to occupancy and shall confirm lease agreement language.

MM HAZ 3: The following deed notice and disclosure text shall be provided to all potential purchasers of the Project site property and tenants of the buildings:

> NOTICE OF AIRPORT IN VICINITY. This property is presently located in the vicinity of an airport, within what is known as an airport influence area. For that reason, the property may be subject to some of the annoyances or inconveniences associated with proximity to airport operations (for example: noise, vibration, or odors). Individual sensitivities to those annoyances can vary from person to person. You may wish to consider what airport annoyances, if any, are associated with the property before you complete your purchase and

determine whether they are acceptable to you. Business & Professions Code Section 11010 (b) (13)(A)

5.12.7 Environmental Impacts after Mitigation Measures are Implemented

Mitigation measures **MM NOI 1 through MM NOI 12** are expected to reduce construction noise by 10 BA; however, because construction noise at the residential lots will exceed 55 dBA, **impacts associated with Project construction remain significant**.

Mitigation measures **MM NOI 13 through MM NOI 16,** and **MM AQ 14** will reduce operational noise to acceptable levels for all receptors except at two residences located northwest of the Project site. With the installation of a ten-foot tall noise barrier at the locations where the property owners will permit, operational noise will not exceed the City's nighttime noise standard of 45 dBA. However, because the noise barrier outlined in **MM NOI 16** would be on private property, the installation of this mitigation measure is dependent on the individual property owner, not the Project proponent. For this reason, i**mpacts are significant** even with mitigation. Therefore with regard to exceeding a City standard **impacts associated with Project operations remain significant and unavoidable with feasible mitigation**.

Project implementation will result in noise level increases of 5 CNEL or greater above ambient noise levels from both on-site (Project operations) and off-site (Project-generated traffic) sources with implementation of operational mitigation measures **MM NOI 13** through **MM NOI 16**. The noise levels will be within the GP 2025 "Normally Acceptable" compatibility criteria (55-70 dBA) for neighborhood park land uses. The noise increase from Project-generated traffic noise levels will not exceed the GP 2025 "Normally Acceptable" compatibility criteria for industrial and manufacturing land uses and there are no sensitive receptors adjacent to the affected road segment. For these reasons, impacts with regard to a substantial permanent increase in ambient noise levels in the project vicinity are **less than significant with mitigation**.

Impacts with regard to a permanent substantial increase in ambient noise and exposure to aircraft noise from a private airstrip are **less than significant**.

Impacts with regard to exposure to aircraft noise from a public airport will be **less than significant with implementation of mitigation measure MM HAZ 3**.

5.12.8 References

In addition to other documents, the following references were used in the preparation of this section of the DEIR:

ALUC Minute Order — Riverside County Airport Land Use Commission, *Minute Order, December 10, 2015* (Available at http://www.rcaluc.org/Portals/0/PDFGeneral/minutes/2015/12-10-2015_Minutes.pdf?ver=2016-01-15-133622-730, accessed May 11, 2016.)

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Caltrans — California Department of Transportation, Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013. (Available at http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf, accessed August 1, 2016.)

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GP 2025 — City of Riverside, *Riverside General Plan 2025*, certified November 2007 with subsequent amendments to various elements. (Available at City of Riverside and at http://www.riversideca.gov/planning/gp2025program/general-plan.asp, accessed January 13, 2016.)

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KA — Kunzman Associates, Inc., *Noise Impact Analysis for the Sycamore Canyon Business Park Warehouse*, August 1, 2016. (Appendix I)

MARB/IPA LUCP — Riverside County Airport Land Use Commission, *March Air Reserve Base / Inland Port Airport Land Use Compatibility Plan*, adopted November 13, 2014. (Available at http://www.rcaluc.org/filemanager/plan/new//17%20-%20Vol.%201%20March%20Air%20Reserve%20Base%20Final.pdf, accessed June 24, 2015.)

NMI — NoiseMeters Inc., *Ldn, Lden, CNEL – Community Noise Calculators* website. (Available at https://www.noisemeters.com/apps/ldn-calculator.asp, accessed July 16, 2016.)

TFA — Riverside County Public and Private Airports, California, website. (Available at http://www.tollfreeairline.com/california/riverside.htm, accessed June 25, 2016.)

Title 7 — City of Riverside, *City of Riverside Municipal Code, Title 7 Noise Control.* (Available at City of Riverside and at http://www.riversideca.gov/municode/title7.asp, accessed January 2016.)

WEBB Albert A. Webb Associates, *Revised Traffic Impact Analysis Sycamore Canyon Industrial Buildings 1 & 2 (P14-1072)*, May 2016. (Appendix J)