5.10 Noise

5.10.1 INTRODUCTION

This section evaluates the potential noise impacts that would result from implementation of the Proposed Project. It discusses the existing noise environment within and around the Project site, as well as the regulatory framework for regulation of noise. This section analyzes the effect of the Proposed Project on the existing ambient noise environment during construction and operational activities, and evaluates the Proposed Project's noise effects for consistency with relevant local agency noise policies and regulations. This section includes data from the following City documents and reports prepared by LSA Associates, Inc.:

- *City of Los Angeles Municipal Code (2023)*
- *Port Master Plan,* Adopted September 2018 (POLA, 2018)
- *Noise and Vibration Impact Analysis,* LSA Associates, Inc., October 2022 (LSA, 2024b), Appendix I

Noise and Vibration Terminology

Various noise descriptors are utilized in this EIR analysis, and are summarized as follows:

dB: Decibel, the standard unit of measurement for sound pressure level.

dBA: A-weighted decibel, an overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

L_{eq}: The equivalent sound level, which is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The L_{eq} of a time-varying signal and that of a steady signal are the same if they deliver the same acoustic energy over a given time. The L_{eq} may also be referred to as the average sound level.

L_{max}: The instantaneous maximum noise level experienced during a given period of time.

L_{min}: The instantaneous minimum noise level experienced during a given period of time.

Lx: The sound level that is equaled or exceeded "x" percent of a specified time period. The "x" thus represents the percentage of time a noise level is exceeded. For instance, L50 and L90 represents the noise levels that are exceeded 50 percent and 90 percent of the time, respectively.

Ldn: Also termed the "day-night" average noise level (DNL), Ldn is a measure of the average of A-weighted sound levels occurring during a 24-hour period, accounting for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 p.m. and 7:00 a.m. is weighted by adding 10 dBA to take into account the greater annoyance of nighttime noises.

CNEL: The Community Noise Equivalent Level, which, similar to the Ldn, is the average A-weighted noise level during a 24-hour day that is obtained after an addition of 5 dBA to measured noise levels between the hours of 7:00 p.m. to 10:00 p.m. and after an addition of 10 dBA to noise levels between the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively.

The "ambient noise level" is the background noise level associated with a given environment at a specified time and is usually a composite of sound from many sources from many directions.

Effects of Noise

Noise is generally loud, unpleasant, unexpected, or undesired sound that is typically associated with human activity that is a nuisance or disruptive. The effects of noise on people can be placed into four general categories:

- Subjective effects (e.g., dissatisfaction, annoyance)
- Interference effects (e.g., communication, sleep, and learning interference)
- Physiological effects (e.g., startle response)
- Physical effects (e.g., hearing loss)

Although exposure to high noise levels has been demonstrated to cause physical and physiological effects, the principal human responses to typical environmental noise exposure are related to subjective effects and interference with activities. Interference effects refer to interruption of daily activities and include interference with human communication activities, such as normal conversations, watching television, telephone conversations, and interference with sleep. Sleep interference effects can include both awakening and arousal to a lesser state of sleep. With regard to the subjective effects, the responses of individuals to similar noise events are diverse and are influenced by many factors, including the type of noise, the perceived importance of the noise, the appropriateness of the noise to the setting, the duration of the noise, the time of day and the type of activity during which the noise occurs, and individual noise sensitivity.

In general, the more a new noise level exceeds the previously existing ambient noise level, the less acceptable the new noise level will be to those hearing it. With regard to increases in A-weighted noise levels, the following relationships generally occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived.
- Outside of the laboratory, a 3-dBA change in noise levels is considered to be a barely perceivable difference.
- A change in noise levels of 5 dBA is considered to be a readily perceivable difference.
- A change in noise levels of 10 dBA is subjectively heard as doubling of the perceived loudness.

Noise Attenuation

Stationary point sources of noise, including mobile sources such as idling vehicles, attenuate (lessen) at a rate of 6 dBA per doubling of distance from the source over hard surfaces to 7.5 dBA per doubling of distance from the source over soft surfaces, depending on the topography of the area and environmental conditions (e.g., atmospheric conditions, noise barriers [either vegetative or manufactured]). Thus, a noise measured at 90 dBA at 50 feet from the source would attenuate to about 84 dBA at 100 feet, 78 dBA at 200 feet, 72 dBA at 400 feet, and so forth. Widely distributed noise, such as a large industrial facility spread over many acres, would typically attenuate at a lower rate, approximately 4 to 6 dBA per doubling of distance from the source (LSA, 2023b).

Hard sites are those with a reflective surface between the source and the receiver, such as asphalt or concrete surfaces or smooth bodies of water. No excess ground attenuation is assumed for hard sites and the changes in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dBA (per doubling distance) is normally assumed for soft sites. Line sources (such as traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement (LSA, 2023b).

Fundamentals of Vibration

Vibration is energy transmitted in waves through the ground or man-made structures. These energy waves generally dissipate with distance from the vibration source. There are several different methods that are 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 but is not always suitable for evaluating human response (annoyance) because it takes some time for the human body to respond to vibration signals. The RMS amplitude is defined as the average of the squared amplitude of the signal and is most frequently used to describe the effect of vibration on the human body. Decibel notation (VdB) is commonly used to measure RMS. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receivers for vibration include structures (especially older masonry structures), people (especially residents, the elderly, and sick), and vibration-sensitive equipment (such as laboratory equipment and microelectronics manufacture).

The background vibration-velocity level in residential areas is generally 50 VdB. Ground-borne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. At 90 VdB vibration is distinctly felt by humans (LSA, 2023b).

5.10.2 REGULATORY SETTING

5.10.2.1 Federal Regulations

There are no federal regulations concerning noise or vibration impacts that are applicable to the Project. However, the Federal Transit Administration (FTA) has adopted noise and vibration criteria for use in evaluating noise and vibration impacts from construction activities.

FTA Detailed Assessment Construction Noise Criteria

The FTA Detailed Assessment Construction Noise Criteria are used to assess the potential impact of construction noise on sensitive receptors, such as residential areas, schools, and hospitals. The criteria are based on the equivalent sound level (L_{eq}) measured in decibels (dBA). Table 5.10-1 lists the daytime construction noise level limits for activities that occur within the exempted hours.

Table 5.10-1: Detailed Assessment Construction Noise Criteria

Receptor (Location)	Daytime 1-hour Leq (dBA)[1]
Residential	80
Commercial	85
Industrial	90

Source: Transit Noise and Vibration Impact Assessment Manual (FTA, 2018).
[1]This analysis conservatively assumes that the hourly Leq calculated could occur for 8 hours in a given work day.
dBA = A-weighted decibels
Leq = equivalent continuous sound level

FTA Construction Vibration Damage Criteria

The FTA Vibration Damage Criteria Guidelines provide a framework for assessing the potential for vibration-induced damage to buildings and other structures from transit projects. The guidelines are based on national and international standards, as well as experience on human response to building vibration. They are used to determine whether vibration levels from a transit project are likely to cause damage to nearby structures. As suggested in the FTA Manual, the guidelines are as shown below in Table 5.10-2.

Table 5.10-2: Construction Vibration Damage Criteria

Building Category	Peak Particle Velocity (PPV) (in/sec)
Reinforced concrete, steel, or timber (no plaster)	0.50
Engineered concrete and masonry (no plaster)	0.30
Industrial Non-engineered timber and masonry buildings	0.20
Buildings extremely susceptible to vibration damage	0.12

Source: Transit Noise and Vibration Impact Assessment Manual (FTA, 2018).
in/sec = inch/inches per second

5.10.2.2 State Regulations

There are no State regulations concerning noise or vibration impacts that are applicable to the Proposed Project. However, the Governor's Office of Planning and Research (OPR) has established guidelines for evaluating the compatibility of various land uses as a function of community noise exposure, as shown below in Table 5.10-3.

5.10.2.3 Local Regulations

City of Los Angeles General Plan

The primary focus of the Noise Element within the General Plan is to provide policymakers with guidance when making decisions about land use and when implementing noise regulations to minimize the extent to which citizens are exposed to high levels of noise (City of Los Angeles, 1999). The subsequent objectives and policies, which pertain to the Proposed Project, are derived from the Noise Element outlined in the City's General Plan and are as follows:

Objective 2 (**Non-airport**). Reduce or eliminate non-airport related intrusive noise, especially relative to noise-sensitive uses.

Policy 2.1 Enforce and/or implement applicable City, State, and federal regulations intended to mitigate proposed noise producing activities, reduce intrusive noise and alleviate noise that is deemed a public nuisance.

Objective 3 (**Land Use Development**). Reduce or eliminate noise impacts associated with proposed development of land and changes in land use.

According to the City's Noise Element, an exterior noise environment up to 70 dBA CNEL is "conditionally acceptable" for noise sensitive uses (e.g., residential, hotel, school). In addition, noise levels up to 75 dBA CNEL are "normally unacceptable", while noise levels at 75 dBA CNEL and above are "clearly unacceptable" for residential. Table 5.10-3 provides the exterior noise standard associated with various land uses, and summarizes the Noise Element guidelines, which are based on OPR guidelines from 1990.

Table 5.10-3: City of Los Angeles Noise Land Use Compatibility

Land Use Category	Day-Night Average Exterior Sound Level (CNEL dB)						
	50	55	60	65	70	75	80
Residential Single Family, Duplex, Mobile Home	A	C	C	C	N	U	U
Residential Multi-Family	A	A	C	C	N	U	U
Transient Lodging, Motel, Hotel	A	A	C	C	N	U	U
School, Library, Church, Hospital, Nursing Home	A	A	C	C	N	N	U
Auditorium, Concert Hall, Amphitheater	C	C	C	C/N	U	U	U
Sports Arena, Outdoor Spectator Sports	C	C	C	C	U/C	U	U
Playground, Neighborhood Park	A	A	A	A/N	N	N/U	U
Golf Course, Riding Stable, Water Recreation, Cemetery	A	A	A	A	N	A/N	U
Office Building, Business, Commercial, Professional	A	A	A	A/C	C	C/N	N
Agriculture, Industrial, Manufacturing, Utilities	A	A	A	A	A/C	C/N	N

Source: Noise Element of the Los Angeles City General Plan.
A: Normally acceptable. Specified land use is satisfactory, based upon assumption buildings involved are conventional construction, without any special noise insulation.
C: Conditionally acceptable. New construction or development only after a detailed analysis of noise mitigation is made and needed noise insulation features are included in project design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning normally will suffice.
N: Normally unacceptable. New construction or development generally should be discouraged. A detailed analysis of noise reduction requirements must be made and noise insulation features included in the design of a project.
U: Clearly unacceptable. New construction or development generally should not be undertaken. 1 Based on the Governor's Office of Planning and Research, "General Plan Guidelines," 1990. To help guide determination of appropriate land use and mitigation measures vis-à-vis existing or anticipated ambient noise levels.

City of Los Angeles Municipal Code

Chapter XI, Noise Regulation, of the City of Los Angeles Municipal Code (LAMC) establishes acceptable ambient sound levels. Its purpose is intended to regulate intrusive noises (e.g., stationary mechanical equipment and vehicles other than those traveling on public streets) within specific land use zones. In addition, the Noise Regulation provides procedures and criteria for the measurement of the sound level of noise sources. These procedures recognize and account for differences in the perceived level of different types of noise and/or noise sources. The subsequent regulations, which pertain to the Proposed Project, are derived from the City's Municipal Code and are as follows:

Section 111.02. The LAMC provides procedures and criteria for the measurement of the sound level of "offending" noise sources. In accordance with the LAMC, a noise source that causes a noise level increase of 5 dBA over the existing average ambient noise level as measured at an adjacent property line creates a noise violation. This standard applies to radios, television sets, air conditioning, refrigeration, heating, pumping and filtering equipment, powered equipment intended for repetitive use in residential areas, and motor vehicles driven on-site. To account for people's increased tolerance for short-duration noise events, the Noise Regulations provide a 5 dBA allowance for a noise source that causes noise lasting more than 5 but less than 15 minutes in any one-hour period, and an additional 5 dBA allowance (for a total of 10 dBA) for a noise source that causes noise lasting 5 minutes or less in any one-hour period.

Section 111.03. The LAMC provides that in cases where the actual ambient conditions are not known, the City's presumed daytime (7:00 AM to 10:00 PM) and nighttime (10:00 PM to 7:00 AM) minimum ambient noise levels should be used. The presumed ambient noise levels for these areas where the actual ambient conditions are not known as set forth in the LAMC are provided in Table 5.10-4.

Table 5.10-4: City of Los Angeles Presumed Ambient Noise Levels

Zone	Presumed Ambient Noise Level (dBA)	
	Day	Night
A1, A2, RA, RE, RS, RD, RW1, RW2, R1, R2, R3, R4, and R5	50	40
P, PB, CR, C1, C1.5, C2, C4, C5, and CM	60	55
M1, MR1, and MR2	60	55
M2 and M3	65	65

Source: City of Los Angeles Municipal Code (2023)
dBA = A-weighted decibels

Section 41.40. The LAMC prohibits construction noise between the hours of 9 p.m. and 7 a.m. on any given day. In addition, the code prohibits noise from construction equipment within 500 feet of a residential zone before 8 a.m. or after 6 p.m. on any Saturday or national holiday or at any time on Sunday.

Section 112.05. The LAMC requires that between the hours of 7 a.m. and 10 p.m., in any residential zone of the City or within 500 feet thereof, no person shall operate or cause to be operated any powered equipment or tool that produces a maximum noise level exceeding the following noise limits at a distance of 50 feet therefrom:

a) 75 dB(A) for construction, industrial, and agricultural machinery including crawler-tractors, dozers, rotary drills and augers, loaders, power shovels, cranes, derricks, motor graders, paving machines, off-highway trucks, ditchers, trenchers, compactors, scrapers, wagons, pavement breakers, compressors and pneumatic or other powered equipment;
b) 75 dB(A) for powered equipment of 20 HP or less intended for infrequent use in residential areas, including chain saws, log chippers and powered hand tools; or
c) 65 dB(A) for powered equipment intended for repetitive use in residential areas, including lawn mowers, backpack blowers, small lawn and garden tools and riding tractors.

The noise limits for particular equipment listed above in (a), (b), and (c) shall be deemed to be superseded and replaced by noise limits for such equipment from and after their establishment by final regulations adopted by the United States Environmental Protection Agency (EPA) and published in the Federal Register.

However, the noise limitations above would not apply where compliance is deemed to be technically infeasible, which means that said noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers, and/or other noise reduction device or techniques during the operation of the equipment. The aforementioned limitations apply only to construction in residential zones or within 500 feet thereof.

5.10.3 ENVIRONMENTAL SETTING

To assess the existing noise level environment, 24-hour noise level measurements were taken at two locations, which are shown in Figure 5.10-1. The noise level measurements were positioned as close to the nearest sensitive receiver locations as possible to assess the existing ambient hourly noise levels. The background ambient noise levels in the vicinity of the Project site are dominated by transportation-related noise. This includes the auto and heavy truck activities on study area roadways. A description of these locations and the existing noise levels are provided in Table 5.10-5.

Table 5.10-5: Long-Term 24-Hour Ambient Noise Monitoring Results

Location[1]		Daytime Noise Levels[1] (dBA L_{eq})	Evening Noise Levels[2] (dBA L_{eq})	Nighttime Noise Levels[3] (dBA L_{eq})	Average Daily Noise Levels (dBA CNEL)
LT-1	Northeast property line of 2001 John S. Gibson Blvd #1, San Pedro, CA 90731 on a fence bordering the Project site.	57.8 – 61.3	56.4 – 58.7	53.0 – 60.2	63.9
LT-2	Northeast of John S. Gibson Boulevard and Harry Bridges Boulevard at a park near a tree.	67.1 – 71.2	65.9 – 67.9	63.0 – 67.7	72.4

Source: LSA, 2024b (EIR Appendix I)
[1] See Figure 5.10-1 for the noise level measurement locations.
[2] Energy (logarithmic) average levels. The long-term 24-hour measurement worksheets are included in Appendix I
"Daytime" = 7:00 a.m. to 7:00 p.m.; "Evening" = 7:00 p.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

Existing Vibration

Aside from periodic construction work that may occur in the vicinity of the Project area, other sources of groundborne vibration include heavy-duty vehicular travel (e.g., refuse trucks and delivery trucks) on area roadways. Trucks typically generate groundborne vibration velocity levels of around 0.076 in/sec PPV at a distance of 25 feet (FTA, 2018).

Sensitive Receptors

Noise sensitive receivers are generally defined as locations where people reside or where the presence of unwanted sound could otherwise adversely affect the use of the land. Noise-sensitive land uses are generally considered to include residences, schools, hospitals, and recreation areas. There are no sensitive receptors within a 1,000-foot radius of the Project site. The closest sensitive receptors to the Project site are single-family homes located southwest of the Project site, approximately 1,366 feet from the western-most point of the Project property line. The closest receptor for vibration is the Ports of America insurance company located approximately 25 feet southwest of the Project site.

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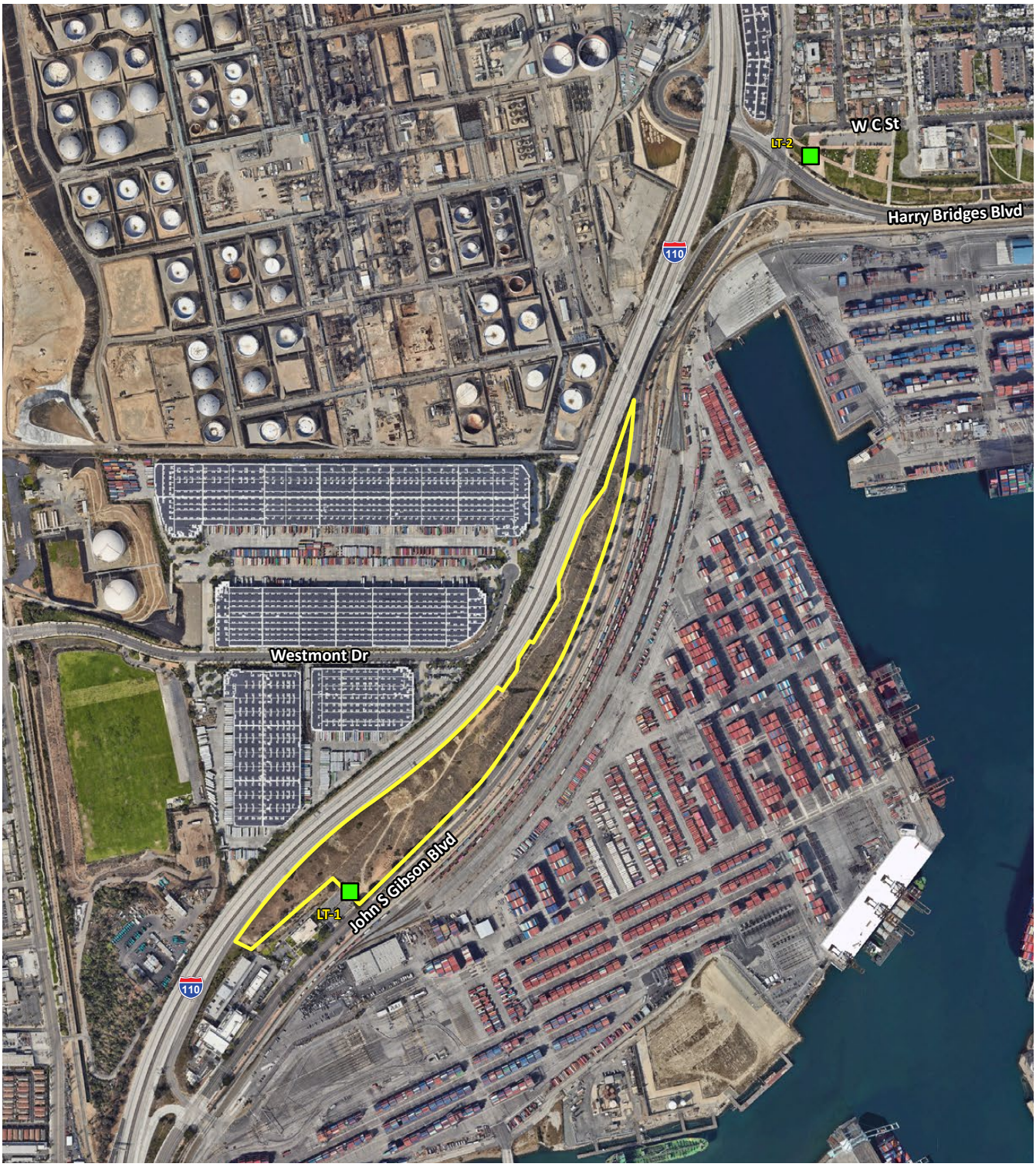
Noise Monitoring Locations



- Project Site Boundary

LT-1 - Long-term Noise Monitoring Location

John S. Gibson Truck & Chassis Parking Lot Project
Los Angeles Harbor Department

Figure 5.10-1

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5.10.4 THRESHOLDS OF SIGNIFICANCE

Appendix G of State CEQA Guidelines indicates that a project could have a significant effect if it were to:

NOI-1 Generate a substantial temporary or permanent increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

NOI-2 Generate excessive groundborne vibration or groundborne noise levels;

NOI-3 For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

The Initial Study documented that the Proposed Project would have no impacts related to Threshold NOI-3 and no further assessment of this impact is required in this EIR.

Construction Noise Thresholds

Construction noise impacts would occur if Project-related construction activities:

- Occur between the hours of 9:00 P.M. and 7:00 A.M. Monday through Friday, 6:00 P.M. and 8:00 A.M. on Saturday and National Holidays, and at any time on Sunday (i.e., construction is allowed Monday through Friday between 7:00 A.M. to 9:00 P.M.; and Saturdays and National Holidays between 8:00 A.M. to 6:00 P.M.) (LAMC Section 41.40); or
- Create noise levels at the nearby sensitive receiver locations which exceed the LAMC noise level thresholds of 75 dBA (LAMC Section 112.05); or
- Create a noise level increase of 5 dBA over the existing average ambient noise level at the adjacent property lines (LAMC Section 111.02).

Construction Vibration Thresholds

Construction vibration impacts would occur to buildings (assumes industrial non-engineered timber and masonry buildings) if Project-related construction activities generate vibration levels which exceed the FTA Transit Noise and Vibration Impact Assessment Manual vibration threshold of 0.20 PPV in/sec at receiver locations (see Table 5.10-2). The FTA threshold at which vibration levels would result in human annoyance would be 78 VdB for daytime residential uses, 84 VbD for office uses, and 90 VbD for industrial uses.

On-Site Operational Noise Thresholds

Operational noise impacts would occur if Project-related operational noise levels:

- Create a noise level increase of 5 dBA over the existing average ambient noise level at the adjacent property lines (LAMC Section 111.02); or
- Create a noise level above the 50 dBA daytime and 40 dBA nighttime ambient noise levels for residential zones (see Table 5.10-4); or
- Create a noise level above 60 dBA anytime and 55 or 65 dBA nighttime ambient noise levels for commercial and industrial zones (see Table 5.10-4).

Off-Site Traffic Noise Thresholds

The City of Los Angeles and Los Angeles Harbor Department have not established noise standards for traffic-related noise; therefore, for purposes of this CEQA analysis, standards from the Federal Interagency Committee on Noise (FICON) are used to evaluate the significance of Project-related traffic noise (LSA,

2023b). Although the FICON recommendations were specifically developed to assess aircraft noise impacts, these recommendations are often used in environmental noise impact assessments involving the use of cumulative exposure metrics, such as the average-daily noise level (i.e., CNEL). The CNEL is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. For example, if the ambient noise environment is very quiet and a new noise source substantially increases localized noise levels, a perceived impact may occur even though the numerical noise threshold might not be exceeded. Therefore, significant noise impacts from off-site traffic would occur when the noise levels at existing and future noise-sensitive land uses (e.g., residential, etc.):

- Are less than 60 dBA CNEL and the Project creates a *readily perceptible* 5 dBA CNEL or greater project-related noise level increase; or
- Range from 60 to 65 dBA CNEL and the Project creates a *barely perceptible* 3 dBA CNEL or greater project-related noise level increase; or
- Already exceeds 65 dBA CNEL, and the Project creates a community noise level impact of greater than 1.5 dBA CNEL.

Significant impacts would also occur when the off-site traffic noise levels at existing and future non-sensitive land uses (e.g., industrial, etc.):

- Already exceeds 70 dBA CNEL, and the Project creates a *barely perceptible* 3 dBA CNEL or greater project-related noise level increase.

Operational Vibration Thresholds

Operational vibration impacts would occur if:

- Project-related operational activities generate vibration levels which exceed the FTA Transit Noise and Vibration Impact Assessment Manual vibration threshold for building damage of 0.20 PPV in/sec at receiver locations (see Table 5.10-2 - Industrial Non-engineered timber and masonry buildings). The threshold at which vibration levels would result in annoyance would be 78 VdB for daytime residential uses, 84 VbD for office uses, and 90 VbD for industrial uses.

5.10.5 METHODOLOGY

Construction Noise

To identify the temporary construction noise contribution to the existing ambient noise environment, the construction noise levels anticipated from usage of construction equipment needed to implement the Proposed Project were combined with the existing ambient noise level measurements at the nearest sensitive receiver locations and compared against the FTA's thresholds. Construction is completed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. The noise analysis utilizes reference construction equipment noise levels and usage factors to estimate composite noise levels at 50 feet. Once composite noise levels at 50 feet are calculated, reference noise levels are adjusted for distance to the noise sensitive receptors. The construction noise levels are compared against the FTA's threshold to assess the level of significance associated with temporary construction noise level impacts.

Operational Noise

The primary source of noise associated with the operation of the Proposed Project would be from vehicular and truck trips. The expected roadway noise level increases from vehicular/truck traffic were calculated

using the Federal Highway Administration (FHWA) traffic noise prediction model and the average daily traffic volumes from the Traffic Impact Analysis, included as Appendix J, prepared for the Proposed Project.

As detailed in Section 5.11, *Transportation,* the Proposed Project is anticipated to generate approximately 1,808 daily trips, 225 a.m. peak hour trips and 100 p.m. peak hour trips (based on the Horizon Year [2040]; see Table 5.11-3). The increase in noise levels generated by the vehicular/truck trips have been quantitatively estimated and compared to the applicable noise standards and thresholds of significance listed previously.

Secondary sources of noise would include on-site vehicle and truck movement at the new parking facility. The increase in noise levels generated by these activities have been quantitatively estimated and compared to the applicable noise standards listed previously. Noise levels generated by delivery trucks would be similar to noise readings from trucks during the parking process, which generate a noise level of 76.3 dBA L8 at 20 ft based on measurements taken by LSA for the Richmond Wholesale Meat Distribution Center (LSA, 2016). During this process, noise levels are associated with the truck engine noise, air brakes, and back-up alarms. These noise levels would occur for a shorter period of time (less than 5 minutes). To present a conservative assessment, it is assumed that truck arrivals and departure activities could occur at 20 stalls in a given hour.

Vibration

Aside from noise levels, groundborne vibration would also be generated by various construction-related activities and equipment; and could be generated by truck traffic traveling to and from the Project site. Operational vibration could be generated from on-site parking lot truck activities and truck traffic accessing and leaving the site. The potential ground-borne vibration levels resulting from Proposed Project construction and operations equipment were estimated using data published by the FTA. Thus, the groundborne vibration levels generated have been quantitatively calculated and compared to the applicable thresholds of significance listed previously.

5.10.6 ENVIRONMENTAL IMPACTS

IMPACT NOI-1: WOULD THE PROJECT RESULT IN GENERATION OF A SUBSTANTIAL TEMPORARY OR PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN THE VICINITY OF THE PROJECT IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL PLAN OR NOISE ORDINANCE, OR APPLICABLE STANDARDS OF OTHER AGENCIES?

Construction

Less-than-Significant Impact. Noise generated by construction equipment would occur from two types of short-term noise impacts. The first short-term impact relates to construction crew commutes and the transport of construction equipment and materials to the site for the Proposed Project would incrementally increase noise levels on access roads leading to the site. As stated in the Noise and Vibration Impact Analysis (provided as EIR Appendix I), the existing traffic volume on the adjacent John S. Gibson Boulevard is approximately 18,425 daily vehicles (LADOT, 2017). The site preparation and grading phases of construction for the Proposed Project would generate approximately an additional 291 passenger car equivalent (PCE) trips consisting of worker and hauling trips. For reference, one 4+ axle truck is equivalent to approximately 3 passenger trips in PCE. Although a high single-event noise-exposure potential causing intermittent noise nuisance (i.e., passing trucks at 50 ft would generate up to 84 dBA L_{max}) may occur, the effect on the ambient noise levels (as shown in Table 5.10-5) would be small compared to existing daily traffic volumes and resulting traffic noise levels on John S. Gibson Boulevard. As determined in the Noise and Vibration Impact Analysis, construction related vehicle trips would generate an approximate 0.1 dBA CNEL noise increase. This increase would be less than 3 dBA and would not be perceptible. Therefore,

construction-related impacts associated with worker commute and equipment transport to the Project site would be less-than-significant.

The second short-term impact relates to noise generated during Project construction activities consisting of site preparation, grading, paving, and architectural coating on the site. No pile driving would be necessary for Proposed Project construction. Construction noise would be temporary in nature as the operation of each piece of construction equipment would not be constant throughout the construction day, and equipment would be turned off when not in use. Section 41.40 of the LAMC states noise sources associated with construction activities are exempt from noise regulations as long as the activities do not occur between the hours of 9:00 P.M. and 7:00 A.M. Monday through Friday, 6:00 P.M. and 8:00 A.M. on Saturday and National Holidays, and at any time on Sunday. The Proposed Project's construction activities would occur pursuant to these regulations. Thus, the construction activities would be in compliance with the City's construction-related noise standards.

Moreover, noise levels from construction equipment would range from approximately 77 dBA L_{max} to 85 dBA L_{max} at 50 feet from the noise source. Table 5.10-6 below shows the hourly noise impact for each piece of equipment anticipated to be used during construction.

Table 5.10-6: Construction Reference Noise Levels

Equipment Description	Acoustical Usage Factor (%)[1]	Maximum Noise Level at 50 Feet (dBA L_{max})[2]
Backhoes	40	80
Compressor	40	80
Dozers	40	85
Excavators	40	85
Flat Bed Trucks	40	84
Front-end Loaders	40	80
Graders	40	85
Paver	50	77
Pneumatic Tools	50	85
Pumps	50	77
Rollers	20	85
Scrapers	40	85
Tractors	40	84

Source: LSA, 2024b (Appendix I, Table I)
[1] Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.
[2] Maximum noise levels were developed based on Specification 721.560 from the Central Artery/Tunnel Program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.

Each piece of construction equipment operates as an individual point source and a composite noise level can be calculated when multiple sources of noise operate simultaneously. As calculated in the Noise and Vibration Impact Analysis, the 50-foot composite noise levels would range from 74 dBA L_{eq} to 88 dBA L_{eq}, (Appendix I, Appendix B – Construction Noise Level Calculations), which would occur during the site preparation and grading phases. As it relates to nearest sensitive uses to the Project site and their distance from the boundary of construction activities, the composite noise level of 88 dBA was adjusted as shown in Table 5.10-7.

Table 5.10-7: Construction Noise Level Compliance

Receptor (Location)	Composite Noise Level at 50 ft (dBA L_{eq})[1]	Distance from Edge of Construction Activities (ft)	Composite Noise Level (dBA L_{eq})[2]	Threshold[2]	Threshold Exceeded?
Residential (West)	88	1,366	60	75	No

Source: LSA, 2024b (Appendix I, Table I)
[1] Highest construction noise level calculations based on distance from the construction noise source activity to nearby receiver locations as shown on Figure 5.10-1.
[2] Construction noise level thresholds correspond to the noise sensitive receiver land use per LAMC Section 112.05.

As shown on Table 5.10-7, construction noise from the Proposed Project at the nearby sensitive receiver locations would reach 60 dBA L_{eq}. As such, construction-related noise impacts would be well below the 75 dBA construction noise level thresholds for daytime construction noise levels as established by the LAMC for residential uses. Therefore, impacts related to construction noise would be less-than-significant.

Operation

Less-than-Significant Impact. This analysis assumes the Proposed Project would be operational 24 hours a day, seven days per week. Business operations would include parking of trucks and loaded and unloaded chassis. As such, the onsite industrial use-related noise sources are expected to include truck movements and parking of trucks. As described previously, the Project site is in a commercial and industrial area, with the nearest noise-sensitive receptors (residences) located over 1,366 feet to the west. The Noise Impact Analysis (Appendix I) calculated the operational source noise levels that would be generated by the Proposed Project and the noise increases that would be experienced at the closest sensitive receptor locations.

Operational Noise Standard Compliance

The Noise and Vibration Impact Analysis based the following measurements on the Operational Noise Impact Analysis for Richmond Wholesale Meat Distribution Center (LSA, 2016), as similar noise levels from large heavy-duty truck movements would occur for Proposed Project operations. To present a conservative assessment, it is assumed that truck arrivals and departure activities could occur at 20 stalls in a given hour (represents 5% of the total number of stalls). During this process, noise levels are associated with the truck engine noise, air brakes, and back-up alarms. These noise levels would occur for a period of time less than 5 minutes. Noise generated by 20 trucks would equate to 89.3 dBA L_{eq}. While it is possible that one truck event could occur at a closer distance to surrounding uses, because the 20 truck movements are assumed to be spread over the entire Project site in an average condition, the center of the site is considered an appropriate average distance from which to assess potential impacts. At an average distance of 3,500 feet from the center of the site to the nearest sensitive uses to the west, noise levels would approach 39.4 dBA L_{eq}. As previously stated, the City has a residential daytime standard of 50 dBA L_{eq} and nighttime standard of 40 dBA L_{eq}. Similarly, at an average distance of 1,475 ft to the nearest office use to the southwest, noise levels would approach 52 dBA L_{eq}, which would not exceed the City's commercial and industrial zone daytime and nighttime standards of 60 dBA L_{eq} and 55 dBA L_{eq}, respectively. As a result, noise levels generated by truck activities would meet the City's noise standards for stationary sources. Thus, operational impacts from the Proposed Project would be less-than-significant.

Off-Site Traffic Noise

The Proposed Project would generate traffic-related noise from operation. As described in Section 3.0, *Project Description*, the Proposed Project would be accessed from John S. Gibson Boulevard. To identify the potential of traffic from the Proposed Project to generate noise impacts, modeling of vehicular noise on area

roadways was conducted as part of the Noise and Vibration Impact Analysis (Appendix I). As stated in the Noise and Vibration Impact Analysis, the guidelines included in the FHWA Highway Traffic Noise Prediction Model were used to evaluate highway traffic-related noise conditions along roadway segments in the Project vicinity. Table 5.10-8 provides the traffic noise levels for the opening year (2025) with and without Project scenarios, and horizon year (2040) with and without Project scenarios. The Opening Year without Project exterior traffic noise levels are expected to be approximately 65.0 dBA CNEL. The Opening Year with Project off-site traffic noise level increase would be approximately 1.0 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Section 5.10.4, land uses adjacent to the study area roadway segments would experience less-than-significant noise level impacts due to Project-related traffic noise levels.

Table 5.10-8: Traffic Noise Levels Without and With Proposed Project

Roadway Segment	Opening Year 2025 – Without Project		Opening Year 2025 – With Project			Horizon Year 2040 – Without Project		Horizon Year 2040 – With Project		
	Average Daily Trips (ADT)	CNEL (dBA) 50 ft from Centerline of Nearest Lane	ADT	CNEL (dBA) 50 ft from Centerline of Nearest Lane	Increase from 2025 (dBA)	ADT	CNEL (dBA) 50 ft from Centerline of Nearest Lane	ADT	CNEL (dBA) 50 ft from Centerline of Nearest Lane	Increase from 2040 (dBA)
John S. Gibson Blvd	11,510	65.0	14,422	66.0	1.0	14,570	66.1	19,966	67.4	1.3

Source: LSA, 2024b (EIR Appendix I)
1 Noise levels represent worst-case scenario, which assumes no shielding.
2 Without and with project scenario traffic volumes (ADT) obtained from the Traffic Impact Analysis (EIR Appendix J).
"ft" = feet

For the Horizon Year without Project, exterior noise levels are expected to be 66.1 dBA CNEL, without accounting for any noise attenuation features such as noise barriers or topography. The Horizon Year with Project conditions would be 67.4 dBA CNEL. Table 5.10-8 shows that the Project off-site traffic noise level increase would be approximately 1.3 dBA CNEL. Based on the significance criteria for off-site traffic noise presented in Section 5.10.4, land uses adjacent to the study area roadway segments would experience less-than-significant noise level impacts due to Project-related traffic noise levels. Therefore, traffic noise impacts would be less-than-significant.

IMPACT NOI-2: WOULD THE PROJECT RESULT IN GENERATION OF EXCESSIVE GROUNDBORNE VIBRATION OR GROUNDBORNE NOISE LEVELS?

Construction

Less-than-Significant Impact. Construction activities for development of the Project would include site preparation, grading, and paving activities, which have the potential to generate low levels of groundborne vibration. People working in close proximity to the Project site could be exposed to the generation of excessive groundborne vibration or groundborne noise levels related to construction activities. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to structural damage at the highest levels. Ground vibrations from on-site construction activities very rarely reach the levels that can damage structures, but they can be perceived in the audible range and be felt in buildings very close to a construction site.

Site preparation, grading, and paving activities are required for implementation of the Proposed Project and can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. Based on the reference vibration levels provided by the

FTA, a large bulldozer represents the peak source of vibration with a reference velocity of 0.089 in/sec PPV at 25 feet, as shown in Table 5.10-9.

Table 5.10-9: Vibration Source Levels for Construction Equipment

Equipment	PPV (in/sec) at 25 feet
Loaded Trucks	0.076
Large bulldozer	0.089

Source: LSA, 2024b (Appendix I).
[1] Equipment shown in bold is expected to be used on site.

Table 5.10-10 presents the expected Project-related vibration levels at the nearby building or sensitive receiver locations. At distances ranging from 25 feet to 1,366 feet from construction activities (at the construction site boundaries), construction vibration levels are expected to approach 0.089 in/sec PPV (at 25 feet). Therefore, construction activities would not exceed the Caltrans threshold for building damage of 0.20 in/sec PPV threshold at any sensitive receiver locations.

Table 5.10-10: Construction Vibration Damage Levels

Receptor (Location)	Reference Vibration Level (PPV) at 25 ft[1]	Distance (ft)[2]	Vibration Level (PPV)	Thresholds PPV (in/sec)[3]	Threshold Exceeded?
Industrial (North)	0.089	200	0.004	0.20	No
Industrial (South and Southeast)		275	0.002		No
Office (Southwest)		25	0.089		No
Residence (West)		1,366	<0.001		No

Source: LSA, 2024b (Appendix I)
[1] The reference vibration level is associated with a large bulldozer, which is expected to be representative of the heavy equipment used during construction.
[2] Distance from receiver building façade to Project construction boundary (Project site boundary).
[3] Caltrans Transportation and Construction Vibration Guidance Manual, April 2020, Table 19, p. 38.
"PPV" = Peak Particle Velocity

Table 5.10-11 presents the expected Project-related vibration annoyance levels at the nearby receiver locations. At distances ranging from 25 feet to 1,366 feet from construction activities, construction vibration annoyance levels are expected to approach 80 VdB at the nearest commercial use to the west and 28 VdB at the nearest residence to the west.

Table 5.10-11: Construction Vibration Annoyance Levels

Receptor (Location)	Reference Vibration Level (VdB) at 25 ft[1]	Distance from Center of Construction Activities (ft)[2]	Vibration Level (VdB) [3]	Thresholds VdB (in/sec)	Threshold Exceeded?
Industrial (North)	87	200	53	90	No
Industrial (South and Southeast)		275	49	90	No
Office (Southwest)		25	80	84	No
Residence (West)		1,366	28	78	No

Source: LSA, 2024b (EIR Appendix I)
[1] The reference vibration level is associated with a large bulldozer, which is expected to be the representative of the heavy equipment used during construction
[2] Distance from receiver building facade to center of construction activities.
[3] Includes a conservative 7 dB coupling loss for 1-2 story heavy structures
"VdB" = Vibration Velocity Decibels

As a result, site preparation and grading construction activities would not exceed the FTA daytime 78 VdB residential threshold at any sensitive receiver locations, 84 VdB office threshold, or 90 VdB industrial threshold. Therefore, impacts related to construction vibration would be less-than-significant.

Operation

Less-than-Significant Impact. Vibration levels generated from Project-related traffic are dependent on vehicle characteristics, load, speed, and pavement conditions. Operation of the Proposed Project would include short-term truck and chassis parking to support ship offloading and loading activities occurring at POLA container yards. Due to the nature of the Proposed Project, loaded trucks are expected to be used during operation of the Proposed Project, which have a reference vibration level of 0.076 in/sec PPV at 25 feet. As such, structures approximately 20 feet from the roadways that contain Proposed Project trips would experience vibration levels below the most conservative standard for vibration damage of 0.12 in/sec PPV. As a result, truck movements onsite and on adjacent roadways would produce vibration levels at nearby sensitive receivers less than Caltrans's vibration standard of 0.12 in/sec PPV. Further, sensitive receivers that could experience vibration annoyance from Proposed Project activities would be located farther away from onsite truck movements, and the associated off-site truck routes already experience potential vibration associated with heavy-duty truck movements in relation to POLA activities. As such, truck movements would not result in vibration annoyance. Therefore, vibration-related damage and annoyance impacts would be less-than-significant.

5.10.7 CUMULATIVE IMPACTS

Cumulative noise assessment considers development of the Proposed Project in combination with ambient growth and other known or foreseeable development projects within the vicinity of the Project area, as shown on Figure 5-1. As noise is a localized phenomenon, and drastically reduces in magnitude as distance from the source increases, only projects and ambient growth in the nearby area could combine with the Proposed Project to result in cumulative noise impacts.

Development of the Proposed Project in combination with other related projects would result in an increase in construction-related, operational onsite, and traffic-related noise. However, per the City's Municipal Code Section 41.40, noise sources associated with construction activities are limited to less sensitive daytime hours (7:00 A.M. to 9:00 P.M. Monday through Friday, 8:00 A.M. to 6:00 P.M. on Saturday and national holidays, and at no time on Sunday). Also, construction noise and vibration is localized in nature and decreases substantially with distance. Consequently, in order to achieve a substantial cumulative increase in construction

noise and vibration levels, more than one source emitting high levels of construction noise would need to be in close proximity to the Proposed Project construction. As shown on Figure 5.1, there are no cumulative projects adjacent to or within hearing distance of the Project site. The closest cumulative project is the Berths 121-131 Container Terminal Improvements (No. 16), which is located at 2001 John S. Gibson Boulevard in the West Basin of the Port of Los Angeles, approximately 1,500 feet east of the Project site. Thus, construction noise and vibration levels from the Proposed Project would not combine and therefore would not be cumulatively considerable.

Cumulative mobile source noise impacts would occur primarily as a result of increased traffic on local roadways due to the Proposed Project and related projects within the study area. Therefore, cumulative traffic-generated noise impacts have been assessed based on the contribution of the Proposed Project in the opening year and horizon year cumulative traffic volumes on the roadways in the Project vicinity. The noise levels associated with these traffic volumes with the Proposed Project were identified previously in Table 5.10-8. As shown, cumulative development along with the Proposed Project would increase local noise levels by a maximum of 1.3 dBA CNEL. As the increase is below the 3 dBA threshold, cumulative impacts associated with traffic noise would not be cumulatively considerable.

5.10.8 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements, Impacts NOI-1 and NOI-2 would be less-than-significant.

5.10.9 MITIGATION MEASURES

None required.

5.10.10 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Compliance with existing regulatory requirements ensures impacts related to noise would be less-than-significant. No significant and unavoidable noise impacts would occur.

5.10.11 REFERENCES

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