Section 3.7 Noise

SECTION SUMMARY

This section addresses potential noise impacts associated with construction and operation of the Proposed Project. The study area includes sensitive receptors in the Project vicinity that might be affected by construction noise, on-site operational noise, or noise associated with traffic generated by the Proposed Project, and sensitive receptors along major transportation corridors that serve the Project area.

Section 3.7, Noise, provides the following:

- A description of environmental noise fundamentals and the existing environmental setting, including existing sound levels and noise-sensitive receptors in the surrounding area;
- A description of local, state, and federal regulations and policies that apply to the Proposed Project;
- A discussion regarding the methodology used to determine whether the Proposed Project would result in a significant adverse noise impact;
- An impact analysis of the Proposed Project; and
- A description of any mitigation measures proposed to reduce any potential impacts and residual impacts, as applicable.

Key Points of Section 3.7

Construction activities would cause noise levels that would exceed significance threshold levels at one noise-sensitive receptor. Mitigation measures NOI-1 and NOI-2 would reduce construction noise, but noise levels would remain above significance thresholds, and residual impacts of construction would be significant and unavoidable. Operational noise associated with the Proposed Project would not result in significant impacts. Vibration from construction and operations would not result in significant impacts.

3.7.1 Introduction

This section describes the fundamentals of noise, the existing environmental setting for noise, applicable regulations associated with noise, thresholds for signficant noise impacts, the sound levels that would result from the Proposed Project, and any necessary mitigation measures that would reduce these impacts. The analyses in this section focus on Project-specific impacts to human noise-sensitive receptors (cumulative noise impacts are evaluated in Chapter 4). The discussion of underwater noise impacts on wildlife is presented in Section 3.2, Biological Resources.

3.7.1.1 Noise Fundamentals

Sound is defined as any pressure variation in air that the human ear can detect. Noise may be described as an unwanted sound and is usually objectionable because it is disturbing or annoying. The objectionable nature of sound can be due to its pitch or its loudness. Pitch is related to the frequency of the vibrations by which sound is produced; in general, intermediate-pitched signals sound louder to humans than sounds with a lower or higher pitch. Loudness is the amplitude or intensity of sound waves combined with the reception characteristics of the ear; the higher the amplitude, the louder the sound.

Technical acoustical terms commonly used in this section are defined in Table 3.7-1. The fundamental model of acoustics consists of a sound (i.e., noise) source, a receptor, and the propagation path between the two. The loudness of the noise source and the obstructions or atmospheric factors, which affect the propagation path to the receptor, determine the sound level and the characteristics of the noise perceived by the receptor.

The amplitude of pressure waves from a noise source determines loudness. Sound pressure amplitude is measured in micropascals (mPa; Table 3.7-1), but because of the large range of values (from less than 100 to 100,000,000 mPa), a logarithmic scale, expressed as decibels (dB; Table 3.7-1), is typically used to describe sound pressure levels.

The dB scale alone does not adequately characterize how humans perceive noise. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, based on human sensitivity to those frequencies. The common measure is the A-weighted sound level (dBA; Table 3.7-1), which approximates the response of the average young ear to most ordinary sounds. Peoples' judgments regarding the relative loudness or annoyance of a sound tend to correlate well with the A-scale sound levels of those sounds.

Because decibels are logarithmic units, sound pressure levels cannot be added or subtracted through ordinary arithmetic. On the dB scale, a doubling of sound energy produces a 3-dB increase in sound level, so that when two identical sources are each producing equivalent sound energy, their combined sound level at a given distance would be 3 dB higher than either source under the same conditions. For example, if one excavator produces a sound pressure level of 80 dBA at a given listener location, two excavators at the same location would not produce 160 dBA at the listener location. Rather, they would combine to produce 83 dBA. The cumulative sound level of any number of sources, such as excavators, can be determined using logrithmic decibel addition. Typical noise levels in the human environment are presented in Figure 3.7-1.

Figure 3.7-1: Typical Noise Levels in the Environment

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
	120 dBA	
Jet fly-over at 984 ft		Rock concert
	110 dBA	
Pile driver at 100 feet	100 dBA	
		Night club with live music
	90 dBA	
Large truck passes by at 50 feet		
	80 dBA	Noisy restaurant
		Garbage disposal at 3 feet
Gas lawn mower at 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial/Urban area daytime		Normal speech at 3 feet
Suburban expressway at 300 feet	60 dBA	
Suburban daytime		Active office environment
	50 dBA	
Urban area nighttime		Quiet office environment
	40 dBA	
Suburban nighttime		
Quiet rural areas	30 dBA	Library
		Quiet bedroom at night
Wilderness area	20 dBA	
	10 dBA	Quiet recording studio
Threshold of human hearing	0 dBA	Threshold of human hearing

Source: Caltrans 2013

Environmental sounds are commonly described in terms of an average level that has the same acoustical energy as the summation of all the time varying events. This average level is referred to as the equivalent-continuous sound level, or Leq. A common averaging period is hourly, but the Leq can describe any series of noise events of any duration. The Leq and two additional noise metrics used in this report, the Ldn and CNEL, are defined in Table 3.7-1.

Table 3.7-1: Definitions of Acoustical Terms

	Definition
Sound	A vibratory disturbance created by a vibrating object, which when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism such as the human ear or a microphone.
Noise	Typically defined as sound that is undesirable.
Sound Pressure Level	Sound pressure level is the quantity that is measured directly by a sound level meter. Noise sources are often described using a sound pressure level in dBA at a specified distance.

Table 3.7-1: Definitions of Acoustical Terms

	Definition
Decibel (dB)	A unit describing the amplitude of sound equal to 20 times the logarithm to base 10 of the ratio of the pressure of the sound measured to a reference pressure. The reference pressure for air is 20 mPa.
Frequency, Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level (dBA)	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low- and very high-frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent-Continuous Sound Level (L_{eq})	The energy-averaged A-weighted noise level during the measurement period. The hourly L_{eq} is used for this report.
Community Noise Equivalent Level (CNEL)	The energy-averaged A-weighted noise level during a 24-hour day, which is obtained by adding 5 dB to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and 10 dB to sound levels between 10:00 p.m. and 7:00 a.m.
Day/Night Sound Level (L_{dn})	The energy-averaged A-weighted noise level during a 24-hour day, which is obtained by adding 10 dB to sound levels measured at night between 10:00 p.m. and 7:00 a.m.
Maximum Sound Level (Lmax)	The maximum A-weighted noise level measured during the measurement period.
Ambient Sound Level	The composite of sound from all sources near and far. The existing sound level of environmental noise at a given location.

Human Responses to Noise

It is widely accepted that a change of 3 dBA in the normal environment is barely detectable to most people; a change of 5 dBA is readily perceptible; and a change of 10 dBA is perceived as being twice as loud. Accordingly, a doubling of sound energy (e.g., doubling the volume of traffic on a highway), which would result in a 3 dB increase in sound, would generally be barely detectable.

A number of studies have linked excessive noise exposure with health effects, including hearing impairment and sleep disturbance (Babisch 2006). Potential health effects appear to be caused by both short and long-term exposure to very loud noises and long-term exposure to lower levels of sound (chronic exposure). Acute exposure to sound levels greater than 120 dBA (equivalent to a rock concert) can cause mechanical damage to the ear and hearing impairment (Babisch 2006).

According to the World Health Organization (Berglund et al. 2000) and the U.S. Environmental Protection Agency (USEPA 1974) L_{eq} 70 dBA is a safe daily average noise level for the ear. However, even this level may cause disturbance to sleep and concentration and be linked to chronic health impacts such as hypertension and heart disease (Babisch, 2006). Research into these potential effects is still in its early stages, and there is not yet enough information to permit an evaluation of an individual project's impacts on public health. Accordingly, this summary is provided as an acknowledgement that such impacts could occur, but that the possibility cannot be evaluated for the Proposed Project.

3.7.1.2 Groundborne Vibration Fundamentals

Groundborne vibration is an oscillatory motion of the soil with respect to the equilibrium position. As with sound, the frequencies of vibration are described in hertz (Hz). The amplitude of vibration is typically described either as peak particle velocity (PPV) in units of inches per second (in/sec) or in decibels of vibration velocity, abbreviated as VdB.

It can be a serious concern for nearby neighbors of activities that cause buildings to shake and rumbling sounds to be heard, but it is unusual for vibration from sources such as buses and trucks on smooth roads to be perceptible, even in nearby locations. Most perceptible indoor vibration is caused by sources within buildings, such as equipment operation, movement of people, or slamming doors. Typical outdoor sources are heavy construction equipment and activities (such as blasting and pile driving), steel-wheeled trains, and heavy trucks on rough roads.

3 summarizes common sources of groundborne vibration velocity levels (measured in decibel units [VdB]) and average response to vibration by a person at rest in quiet surroundings (tolerance to vibration increases considerably during physical activity). The duration of the vibration event affects human response, as does its frequency of occurrence: increases in both result in decreased tolerance. Typical background vibration levels in residential areas are usually 50 VdB or lower, well below the threshold (65 VdB) of perception for most humans.

Groundborne noise is a secondary phenomenon of groundborne vibration. When a building or structure vibrates, noise radiates into the building, possibly producing rattling of windows, doors, stacked dishes, etc. Low-frequency vibration can produce groundborne noise perceived as a low rumble. Groundborne noise is quantified by the A-weighted sound level (dBA; Table 3.7-1) inside the building, and is generally 25 to 40 dBA lower than the vibration velocity level in VdB. Groundborne vibration levels of 65 VdB can result in groundborne noise levels up to 40 dBA, which can disturb sleep. Groundborne vibration levels of 85 VdB can result in groundborne noise levels up to 60 dBA, which can be annoying to daytime noise sensitive land uses such as schools (Federal Transit Administration 2018).

Table 3.7-3: Typical Levels of Groundborne Vibration

Human or Structural Response	Vibration Velocity Level (VdB)	Typical Sources (50 feet from source)
Threshold for minor cosmetic damage to fragile buildings	100	Blasting, pile driving, vibratory compaction equipment
Difficulty with tasks such as reading a video or computer screen	90	Heavy tracked vehicles (bulldozers, cranes, drill rigs)
Threshold for residential annoyance for infrequent events (e.g., commuter rail)	80	Freight rail, typical Commuter rail, upper range
	70	Rapid transit, upper range
Threshold for residential annoyance for frequent events (e.g., rapid transit)	60	Commuter rail, typical Bus or truck over bump or on rough roads
Approximate threshold for human perception of vibration Limit for vibration sensitive equipment	50	Bus or truck over bump or on rough roads. Rapid transit, typical
		Typical bus or truck on public road
		Typical background vibration

Source: Federal Transit Administration (2018).

3.7.2 Environmental Setting

3.7.2.1 General Noise Sources in the Project Vicinity

The Project site, located at Berths 191-194, occupies approximately 6.1 acres adjacent to the East Basin of Los Angeles Harbor, and is generally bounded by the Vopak liquid bulk terminal to the north and west, and the University of California (USC) Boathouse and the East Basin to the south and east. The general vicinity of the Project site is characterized by industrial and Port-related facilities, visitor-serving commercial areas, marine service and support facilities, limited residential areas, and open space and recreational areas. The acoustical environment at the Project site and vicinity is composed of a background of traffic and Port-related noise.

In general, average sound levels in an area are directly determined by the proximity to the various noise-generating activities. Unless such activities in the area change dramatically, average sound levels also do not change appreciably over time. For example, a doubling of noise generating activity of the same or similar type (e.g., traffic with the same or similar distribution of vehicular types) results in a 3 dBA increase in noise levels, which as discussed above, would be considered barely detectable to most people. Therefore, ambient sound level measurements tend to be reasonably consistent over time provided there has been no substantial change in noise-generating activity.

3.7.2.2 Noise-Sensitive Receptors

For the purposes of noise impact analysis, the study area includes those sensitive receptors closest to the Project site that might be affected by construction noise, on-terminal operational noise, or noise associated with traffic generated by the Proposed Project or an alternative.

Noise-sensitive receptors considered in this Draft Environmental Impact Report (EIR) include residences in the community of Wilmington, marinas (specifically liveaboard residents), a community center, and a motel. The nearest residential area to the Project site is located along Broad Avenue in Wilmington, about 0.7 miles (3,620 feet) to the north, and the marinas on the East Basin, approximately 1,015 feet to the east. Banning's Landing Community Center is approximately 1,020 feet northwest of the Project site and the Monterey Inn is approximately 2,900 feet north of the site.

3.7.2.3 Existing Baseline Noise Environment

A noise monitoring survey was conducted in November 2022 to quantify existing ambient sound levels in the Project vicinity. The noise monitoring survey was conducted by Illingworth & Rodkin, Inc. (2022) in support of a proposed project at the adjacent Vopak terminal; to avoid duplication of effort, the study was designed to measure existing ambient noise levels for the proposed Orcem project as well as for the proposed Vopak project. The measurements were taken using Class 1 sound level meters (Larson Davis LxT) that were field calibrated immediately prior to the measurements. The microphones were fitted with acoustically neutral windscreens and set at approximately 12 feet above the ground.

Five long-term (LT; 24 hours) noise measurements were taken at locations representing sensitive receptors nearest to the Project site (Figure 3.7-2, Table 3.7-4). More details regarding the long-term noise measurements, including methodology and graphs of hourly noise levels, are presented in Appendix D.

Measured CNEL levels at one location (LT-V2) representing Banning's Landing Community Center exceeded 70 dBA (Table 3.7-4), which is considered conditionally

acceptable for an Industrial zone, as defined in the City of Los Angeles General Plan Noise Element (1999) (see Table 3.7-10) for General Plan definitions).

Figure 3.7-2. Noise Sound Level Measurement (SLM) Locations

Source: Illingworth & Rodkin, Inc., 2022. Modified to show Orcem Project site.

Table 3.7-4: Baseline Conditions: Long-Term Noise Monitoring (dBA)

Tag	Location	Date and Time	CNEL	Hourly Leq 7 a.m – 9 p.m.	Hourly Leq 9 p.m. – 7 a.m.	Nearest Noise-Sensitive Receptor
LT-V1	Westernmost finger pier at the California Yacht Harbor	Nov 21, 2022, 4:05 pm–Nov 22, 2022, 4:14 pm	59	47-66	42-50	Liveaboards
LT-V2	Banning's Landing Community Center	Nov 21, 2022, 2:32 pm–Nov 22, 2022, 3:28 pm	71	60-68	59-70	Banning's Landing Community Center
LT-V3	Entry/parking area of Fire Station 49	Nov 21, 2022, 1:42 pm–Nov 22, 2022, 2:29 pm	64	53-62	53-58	Liveaboards, Banning's Landing Community Center
LT-V4	Orcem property, northwest edge of site along Yacht Street	Nov 21, 2022,1:22pm – Nov 22, 2022, 2:20pm	62	50-62	51-57	Liveaboards
LT-V5	Vopak property, between Canal Street and Berth 188	Nov 21, 2022,2:05pm – Nov 22, 2022, 3:15pm	67	57-66	55-63	Banning's Landing Community Center

Notes: See Table 3.7-1 for definitions of L_x terms. Additional L_x values presented in Appendix D.
See Appendix D-2, Tables 1, 2, 3, 4, and 5 for measurement data. CNEL derived from measured hourly Leq values.
Time periods per Los Angeles CEQA Guidelines.

3.7.3 Applicable Regulations and Policies

3.7.3.1 Federal Regulations and Policies

U.S. Federal Transit Administration

The U.S. Federal Transit Administration (FTA) has adopted vibration criteria for assessment of vibration from construction and operational activities, both for human perception and damage to structures (FTA 2018). The criteria are summarized in tables 3.7-4 and 3.7-5.

Table 3.7-5. FTA Construction Vibration Damage Criteria

Building Category/Structural Category	PPV, in/sec	Approximate LV (VdB re 1 µin/sec rms)
I. Reinforced concrete, steel or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

Table 3.7-6. FTA Indoor Ground-Borne Vibration Impact Criteria for General Vibration Assessment

Land Use Category	Ground-Borne Vibration Impact Levels (VdB re 1 µin/sec rms)		
	Frequent Events[a)]	Occasional Events[b)]	Infrequent Events[c)]
Category 1: Buildings where vibration would interfere with interior operations	65 VdB[d)]	65 VdB[d)]	65 VdB[d)]
Category 2: Residences and buildings where people normally sleep	72 VdB	75 VdB	80 VdB
Category 3: Institutional land uses with primarily daytime use	75 VdB	78 VdB	83 VdB

a) More than 70 events per day
b) 30-70 events per day
c) Fewer than 30 events per day
d) From FTA 2018: "This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes."

3.7.3.2 State Regulations and Policies

California Government Code Title 7, Division 1, Chapter 3, section 65302, encourages each local government entity to implement a noise element as part of its general plan. In addition, the California Governor's Office of Planning and Research has developed guidelines for preparing noise elements, which include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure. The City of Los Angeles, Los Angeles County, and the neighborhood of Wilmington have developed guidelines that are described below.

3.7.3.3 Regional Regulations and Policies

City of Los Angeles Municipal Code (LAMC)

Applicable standards for operational and construction noise are established in the City of Los Angeles Municipal Code (City of Los Angeles 2022; LAMC; Chapter IV, Article 1, Section 41.40; Chapter XI, Article 2, Sections 112.04 and 112.05).

For construction noise, Section 112.05 limits construction equipment noise levels to a maximum noise level of 75 dBA at 50 feet if the equipment is located within 500 feet of any residential zone of the City. Further, construction in districts zoned for industrial uses, as is the Project site, is exempt from all noise provisions (as stated in Chapter IV, Article 1, Section 41.40(b), which Chapter XI, Article 2, Section 112.03 refers to).

For operational noise, Section 112.04 provides that noise from equipment and machinery affecting the premises of an occupied residential property may not exceed the ambient noise level by more than 5 dBA. Ambient levels may be established either with sound level measurements at representative locations in the project vicinity or by using the Presumed Ambient Noise Levels set forth in LAMC Section 111.03, Exhibit I.1-1 (7).

City of Los Angeles General Plan Noise Element

The City of Los Angeles General Plan Noise Element City of Los Angeles 1999) establishes standards for exterior sound levels based on land use categories (8). The Noise Element indicates that the maximum acceptable outdoor sound level for residential areas and schools is below 70 dBA CNEL. For the industrial land uses that surround the Project site (City of Los Angeles zoning classification [Q] M3-1 (Qualified Heavy Industrial)), the maximum acceptable level is below 80 dB CNEL. Chapter 3 of the Noise Element has three objectives related to reducing noise impacts and intrusive noise; Objective 1, "Reduce airport and harbor related noise impacts," establishes a policy of reducing the incompatibility of land uses near airports but does not establish a policy related to ports. Chapter 4 describes the implementation of Chapter 3 policies in general terms related to the incorporation of noise compatibility measures into community plans and permitting activities.

Table 3.7-7. City of Los Angeles Presumed Ambient Noise Level (dBA)

Zone	Day (7:00 a.m. to 10:00 p.m.)	Night (10:00 p.m.to 7:00 a.m.)
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

Table 3.7-8: City of Los Angeles General Plan - Guidelines for Noise Compatible Land Uses

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	C/U	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

Notes:

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 Proposed 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.

3.7.4 Impacts and Mitigation Measures

3.7.4.1 Methodology

Details about the methodology used for the analysis of noise effects of the Proposed Project and alternatives are presented in Appendix D-1.

CEQA Baseline

As described in Section 2.6, the California Environmnental Quality Act (CEQA) Guidelines Section 15125 requires EIRs to include a description of the physical environmental conditions in the vicinity of a project that exist at the time of the Notice of Preparation (NOP). Since the NOP for the Proposed Project was released in early 2022, and consistent with the Los Angeles Harbor Department (LAHD) practice, the baseline for this Draft EIR is the conditions in calendar year 2021.

3.7.4.2 Thresholds of Significance

The Port, as a City Department, uses guidance provided in the CEQA Guidelines Appendix G, in conjunction with significance thresholds identified in the City of Los Angeles CEQA Thresholds Guide (City of Los Angeles 2006) to evaluate the potential for a project to result

in significant noise impacts on sensitive receptors, including the residential areas adjacent to the Port in the communities of San Pedro and Wilmington. The Appendix G guidance criteria do not include quantitative thresholds, whereas the City's CEQA thresholds, which effectively incorporate the LAMC noise limits, are quantitative. Accordingly, for operational noise (i.e., CEQA criterion NOI-1c), this analysis uses the City's noise significance thresholds to evaluate noise impacts. While the City's thresholds address noise quantitatively, they do not establish numerical threholds for vibration and do not address proximity to airports.

In the case of construction (NOI-1a and NOI-1b), although construction would occur more than 500 feet from any residential zone and in a district zoned for industrial uses, and would therefore not be subject to LAMC limits or consideration of impacts under the City's CEQA thresholds guidance. This assessment applies the significance criteria established in the City's CEQA Thresholds Guide to provide a conservative assessment of construction noise impacts.

For both construction and operational vibration (NOI-2), this analysis uses the thresholds set in FTA (2018; see Section 3.7.3.1.).

The NOP/Initial Study (IS) (Appendix A) concluded that because the Project site is not located within two miles of a public airport or private use airport, the Proposed Project would have no impact under the following threshold; therefore, this significance criterion was not carried forward for detailed analysis:

- For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

In accordance with the CEQA Guidelines Appendix G criteria, a project may result in a significant effect on the environment with respect to noise or vibration if it would result in:

NOI-1: 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.

Environmental review of major projects in the City of Los Angeles rely on the City of Los Angeles' CEQA thresholds of significance, which are:

> **a) Daytime construction activities lasting more than 10 days in a 3-month period that would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive/receptor;**
>
> **b) Construction activities could result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9:00 p.m. and 7:00 a.m., Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday; and**
>
> **c) For operational noise, a significant noise impact would occur if project operations cause the ambient noise level measured at the property line of affected uses (i.e., sensitive receptors) to increase by 3 dBA in CNEL to or within the 'normally unacceptable' or 'clearly unacceptable category,' or any increase in CNEL 5 dBA or greater.**

The City's CEQA Thresholds Guide CNEL guidelines are provided in Table 3.7-9.

Table 3.7-9: L.A. CEQA Thresholds Guide Land Use Noise Compatibility Guidelines

Land Use	Community Noise Exposure CNEL, dB			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Single-Family, Duplex, Mobile Homes	50–60	55–70	70–75	above 70
Multifamily Homes	60–65	60–70	70–75	above 70
Schools, Libraries, Churches, Hospitals, Nursing Homes	50–70	60–70	70–80	above 80
Playgrounds, Neighborhoods Parks	50–70	—	67–75	above 72
Golf Courses, Riding Stables, Water, Recreation, Cemeteries	50–75	—	70–80	above 80

Normally Acceptable: Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction and without any special noise insulation requirements.

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

Normally Unacceptable: New construction or development generally should be discouraged. If new construction or development does proceed, a detailed analysis of the noise-reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable: New construction or development generally should not be undertaken.

Source: City of Los Angeles, 2006.

NOI-2: Generation of excessive groundborne vibration or groundborne noise levels.

The L.A. CEQA Thresholds Guide does not include thresholds for vibration from either construction or operations. This analysis uses the thresholds set in FTA (2018), as summarized in Section 3.7.3.1.

3.7.4.3 Impact Determination

Proposed Project

Impact NOI-1: Would the Proposed 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?

NOI-1a: Daytime construction activities lasting more than 10 days in a 3-month period that would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive/receptor.

Construction of the Proposed Project would take place over approximately 18 months and would involve the elements described in Section 2.5. Construction of each of the elements would last more than 10 days in a 3-month period. Construction is assumed to take place 5 days per week (Monday through Friday) except national holidays.

The Port implements best management practices (BMPs) during construction on Port projects through standards and other requirements contained in construction bid specifications for contractors. For example, BMPs that pertain to noise control include the following:

- For on-road trucks, restriction of idling to a maximum of 5 minutes when not in use;
- Requirement that, for off-road construction equipment, engines on construction equipment shall be shut down when not in use for more than 5 minutes;
- Appointment of a construction relations officer to act as a community liaison concerning on-site construction activity; and
- Construction activities would occur consistent with the hours specified in the Los Angeles Municipal Code (LAMC) Section 41.40.

Overall average site construction noise levels vary with the numbers and types of equipment operating onsite at once and the proximity of the equipment to noise-sensitive receptors. Calculated hourly average noise levels, therefore, are estimated based on a typical complement of construction equipment that would be expected to be onsite to complete the various Proposed Project components (Table 3.7-10). More details of expected construction equipment types and numbers per each construction phase of the Proposed Project are provided in Appendix D-3.

Table 3.7-10: Construction Equipment Maximum Noise Emission Levels

Equipment Type	Lmax @ 50 feet from Source, dBA	Acoustical Usage Factor, %
Loader	80	40
Scraper	85	40
Material delivery truck	84	10
Water truck	84	40
Excavator	85	40
Air Compressor	80	40
Forklift	75	40
Stone column rig	95	20
Piling rig, diesel hammer	101	20
Mobile crane	83	16
Mobile Elevating Work Platforms	75	16
Welding rig	73	40
Concrete pumper	82	50

Sources:
FTA (2018)
FHWA (2006).

The Project construction schedule indicates that the maximum level of construction activites would occur in the fourth and fifth months of construction, which would include pile driving at Berth 191 and construction of the landside structures.

Construction sound levels during these periods of maximum construction were predicted at the nearest sensitive receivers to the project site (Figure 3.7-3) using the Computer Aided Noise Abatement (CadnaA) model (Datakustik 2022). CadnaA industrial noise calculation procedure enables complete noise modeling of complex facilities using sound propagation factors as adopted by International Organization for Standardization (i.e., ISO 9613, ISO 17534). On-site truck sound levels were modeled using the traffic sound levels and methodologies inherent in CadnaA's Traffic Noise Module. CadnaA considers distance, topography, intervening structures, atmospheric attenuation, ground effects, and vegetation when estimating sound levels from specific sources at distant receptor locations. Modeled peak-hour daytime construction sound levels during this period are presented in Table 3.7-11 (month 4) and Table 3.7-12 (month 5).

Table 3.7-11: CEQA Analysis: Daytime Construction Noise, Proposed Project Month 4 (hourly Leq, dBA)

Receiver	Location	Ambient[1]	Project Construction	Overall with Project[2]	Increase over Ambient	Significant Impact?
R1	Westernmost finger pier at the California Yacht Harbor	47	64	64	17	Yes
R2	Banning's Landing Community Center	60	47	60	0	No

Note: Apparent mathematical discrepancies are a result of rounding resultant levels to the nearest whole number.

[1] Ambient values are based on the lowest measured 1-hour L_{eq} during daytime hours from Table 3.7-4.

[2] Overall with Project is the cumulative level of Project construction plus ambient levels.

Table 3.7-12: CEQA Analysis: Daytime Construction Noise, Proposed Project Month 5 (hourly Leq, dBA)

Receiver	Location	Ambient[1]	Project Construction	Overall with Project[2]	Increase over Ambient	Significant Impact?
R1	Westernmost finger pier at the California Yacht Harbor	47	63	63	16	Yes
R2	Banning's Landing Community Center	60	46	60	0	No

Note: Apparent mathematical discrepancies are a result of rounding resultant levels to the nearest whole number.

[1] Ambient values are based on the lowest measured 1-hour L_{eq} during daytime hours from Table 3.7-4.

[2] Overall with Project is the cumulative level of Project construction plus ambient levels.

Worst-case construction noise levels were compared to the representative ambient noise levels (as shown in Table 3.7-4) at each sensitive receiver to identify worst-case increases over ambient levels. As shown in Table 3.7-11 and Table 3.7-12, daytime peak-hour construction noise levels (Leq) from the Proposed Project would exceed the significance thresholds at receptor R1. This would likely result in a significant impact. The sound levels at this location would be dominated by pile driving activity.

NOI-1b: Construction activities that could result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday.

As described in Section 2.5, project night-time construction is not proposed. However, the LAMC permits nighttime construction in industrial areas, and this analysis cannot rule out the possibility that circumstances such as an emergency situation would necessitate some nighttime construction, including pile driving. In such a case, construction could result in the noise levels persented in Tables 3.7-11 and 3.7-12, and impacts would likely be significant.

Figure 3.73. Noise Model Receptor Locations

NOI-1c: For operational noise, ambient noise level measured at the property line of affected uses (i.e., sensitive receptors) that would increase by a CNEL of 3 dBA to or within 'normally unacceptable' or 'clearly unacceptable' land use categories, or any increase in CNEL of 5 dBA or greater.

Sources of existing operational noise at the Project site include background Port noise such as distant traffic and activity at the Vopak site. Operations under the Proposed Project would include fairly constant noise from the mill (e.g., blower fans), stockpile handling equipment, and customer trucks. Short-term, intermittent noise may come from backup alarms and truck horns. Because vessels would be closest to the noise-sensitive receptors while docked at Berth 191, vessels were included in the on-site operational noise predictions. All equipment was assumed to operate 24 hours a day; this is a very conservative assumption, as vessel unloading and customer truck activities would take place during no more than 16 hours per day.

On-site noise emissions predicted to occur during operation of the Proposed Project were estimated using the Datakustik CadnaA noise model software. Similar to the construction noise predictions, the model was used in lieu of simple calculations due to the area's varied ground surfaces and shielding from buildings and structures. The model included stationary noise sources for noise from the mill, mill exhaust, and other stationary equipment, as well as mobile sources including an excavator and front-end loader. Sound levels for the stationary equipment are summarized in Table 3.7-13, and are based on sound levels from the Draft EIR for the Vallejo Marine Terminal and Orcem Project (City of Vallejo 2015). In Table 3.7-14, sound levels for the excavator and front-end loader are based on FTA data, while sound levels for vessels are based on the Vallejo Draft EIR.

Table 3.7-13: Operations Stationary Equipment Sound Levels

Source	Sound Level
Exterior Equipment	
Aspirated Hopper Fan	88 dB at 5 ft
Conveyer Belt Motor (15HP/11KW)	59 dB at 3 ft
Conveyer Belt Motor (75HP/56KW)	71 dB at 3ft
Conveyer Belt Motor (5.5HP/4KW)	59 dB at 3 ft
Conveyer Belt Motor (20HP/15KW)	60 dB at 3ft
Bag Filter Fan	80 dB at 3ft
Air Slide Fan	80 dB at 3ft
Air Shock	89 dB at 3ft
Main Mill Fan	78 dB at 3 ft
Mill Stack	122 dB L_{WA}
Equipment Interior to Mill	
Hot Gas Burner	92 dB L_{WA}
Grinding Mill Gears	108 dB L_{WA}
Grinding Mill Drive	101 dB L_{WA}
Mill Fan	100 dB L_{WA}
Rotary Valve	105 dB L_{WA}

Source: City of Vallejo 2015.

Table 3.7-14: Operations Mobile Equipment Sound Levels

Source	Sound Level
Excavator	85 dB at 50 ft[1]
Front-End Loader	80 dB at 50 ft[2]
Vessel, 20,000-60,000 tons	95 dB L_{WA}[2]

Sources:
1. Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment, Federal Transit Administration, September 2018.
2. City of Vallejo 2015.

The skin of the mill would be uninsulated sheet metal or equivalent. The mill would also have inlet louvers towards the top of the building. These louvers are assumed to be on the southwest and southeast sides of the mill and are assumed to provide no insertion loss.

The predicted sound levels from all on-site sources are shown in Table 3.7-15.

Table 3.7-15: Operational Noise –On-Site Sources (CNEL, dBA)

Receptor	Existing Ambient	2027 Operational Noise	Overall with Project*	Increase over Ambient	Significant Impact?
Banning's Landing Community Center	71	57	71	0	No
Liveaboards at California Yacht Harbor	59	58	62	3	No

* Overall with Project is the cumulative level of 2027 Project operation plus existing ambient

The two noise-sensitive receptors are zoned as Heavy Industrial. The City of Los Angeles CEQA Noise Compatibility Guidelines do not include sound levels for Heavy Industrial Zones. Under the City's Noise Compatibility Guidelines, the ambient sound levels for the three receptors are considered either "normally acceptable" or "conditionally acceptable" (Table 3.7-8). As shown in in Table 3.7-15, on-site operational noise would not result in an increase in CNEL over ambient sound levels of 5 dBA greater.

Off-site noise sources include medium trucks delivering gypsum to the site and heavy trucks hauling away ground granulated blast-furnace slag (GGBFS). The truck routes enter the Port of Los Angeles area on either Interstate (I)-110 or State Route (SR)-103 and use Anaheim Street and Henry Ford Avenue to access the Project site. Due to high traffic volumes on I-110 and SR-103, the impact of Project-related truck noise along those routes is assumed to be negligible. In addition, there are no sensitive receptors along Henry Ford Avenue. As a result, the analysis of Project-related truck noise is limited to Anaheim Street, along which are noise-sensitive receptors including residences and an assisted living facility.

Predicted Project-related truck counts for 2025 and 2027 were compared to baseline traffic data and predicted 2027 traffic data, hereon referred to as 'LAHD Traffic Study' in this chapter (LAHD 2022, unpublished). The estimated sound levels based on the traffic counts are summarized in Table 3.7-16. Because the Proposed Project would have only 20-26 employees on site, noise from automobile traffic is assumed to be negligible.

Traffic data provided in the LAHD Traffic Study included AM and PM vehicles per hours (vph) traffic counts, while CNEL is split into day, evening, and night. For the purposes of this analysis, it was assumed that daytime traffic was equal to 100% of the average of the AM and PM traffic counts, while evening and nighttime traffic were equal to 70% and 40% of the average of the AM and PM traffic counts, respectively. As a conservative assumption,

"no build" 2027 traffic data from the LAHD Traffic Study was used for the 2027 predictions.

The consideration of traffic-related noise increases along roadways in the project vicinity included only those roadway segments that are within 500 feet of a sensitive receiver. In a busy urban area with multiple major transportation corridors, receivers farther than 500 feet from a single road segment would be more affected by local traffic than by arterial traffic.

Table 3.7-16: Off-Site Operational Noise at 50 feet (CNEL) on Anaheim Street

Year	Non-Project Traffic, CNEL	Project Traffic, CNEL	Overall with Project*	Increase over Ambient	Significant Impact?
2025	70 dB	55 dB	70 dB	0 dB	No
2027	71 dB	58 dB	71 dB	0 dB	No

* Overall with Project is the cumulative level of Project Traffic plus Non-Project Traffic

As shown in Table 3.7-16, noise from off-site Project traffic would not increase traffic sound levels on Anaheim Street.

Impact Determination

Construction of the Proposed Project would result in an increase in daytime sound levels by 5 dBA or more over ambient sound levels at one of the receptor locations considered (California Yacht Harbor). The increases in daytime noise levels from construction noise would be considered a significant impact. If nighttime construction would occur, sound levels at California Yacht Harbor would increase at least 5 dBA over the ambient sound levels; the effect of the increases would be more severe for nighttime construction because of the lower ambient sound levels. Accordingly, the increase would be considered a significant impact.

On-site operational noise generated by the Proposed Project would not cause an increase of greater than 5 dB CNEL at any of the nearby noise-sensitive receptors. In addition, automobile and truck traffic generated by the Proposed Project operations would not cause an increase of 3 dB or more at any roadway location (Table 3.7-16). Accordingly, the impacts of the Proposed Project's on-site and off-site operational noise would be less than significant.

Mitigation Measures

MM NOI-1: Noise Barriers Adjacent to Pile Driving Activities

Where feasible, erect temporary noise barriers around all landside pile driving equipment. The barriers should be installed directly between the pile driving equipment and the California Yacht Harbor so as to break line-of-sight.

MM NOI-2: Noise Reduction of Landside Pile Driving.

In place of impact pile driving systems, where feasible, require the use a vibratory pile driving system or other pile driving system limited to 95 dBA or less when measured at a distance of 50 feet for landside pile driving.

Because the LAMC permits nighttime construction and emergency situations could necessitate nighttime construction, no additional feasible mitigation is available to reduce the significant impacts of construction.

Residual Impacts

Mitigation measures MM NOI-1 and MM NOI-2 are expected to reduce sound levels from pile driving activity by at least 5 dBA where it is feasible to apply. Depending on the final configuration of the pile driving systems and barriers, total construction sound levels at the California Yacht Harbor could be reduced in Month 4 from 67 dBA to 61 dBA and in Month 5 from 63 dBA to 60 dBA. While the sound levels would be reduced by the mitigation measure, the residual impacts of construction noise would nevertheless be significant and unavoidable.

NOI-2: Would the Proposed Project result in generation of excessive groundborne vibration or groundborne noise levels?

Construction Vibration

Vibration from construction equipment and activity was predicted for each piece of equipment to two receptors. With the exception of Banning's Landing Community Center, construction vibration to receptors more than 500 feet from the edge of the construction site were not considered. Groundborne vibration and groundborne noise dissipate rapidly over distance and would be minimal at distances greater than 500 feet.

Assessment of groundborne vibration was based on the FTA guidelines summarized above. For perception of vibration, the thresholds vary from 72 VdB to 75 VdB for frequent events, depending on the type of receptor. For damage to structures, the thresholds vary from 0.12-0.5 in/sec PPV depending on the building material types.

Project-related construction vibration was evaluated using methods identified in the FTA guidance document. Except for pile-driving activities, groundborne vibration generated by most construction activities typically ranges between approximately 0.003 PPV and 0.21 PPV, when measured at 25 feet from the source (Table 3.7-17).

Table 3.7-17: Vibration Source Levels for Construction Equipment

Equipment	PPV_{ref} at 25 ft (in/sec)
Pile Driver (impact), typical	0.644
Pile Driver (sonic), typical	0.17
Vibratory Roller	0.210
Hoe Ram	0.089
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003

Note: PPV – Peak Particle Velocity. Groundborne vibration generated by construction equipment often is evaluated by the maximum rate – or velocity – of particle movement, commonly referred to as the peak particle velocity or PPV, typically measured in inches per second (in/sec).
Source: Federal Transit Administration 2018.

The calculated vibration levels at each receptor using the above assumptions were then compared to FTA thresholds found in Section 3.7.3.1, which vary based on indoor environment and structure type.

As shown in tables 3.7-17 through 3.7-20, none of the sources of vibration would cause exceedances of the significance thresholds at the receptor.

Table 3.7-18: Orcem Site Construction Vibration – Building Damage Impact Assessment

Receptor	Approx. Distance to Receptor (ft)	Vibration per Equipment (PPV, in/sec)								Significance Threshold (PPV, in/sec)	Significant Impact?
		Excavator	Mobile Crane	Stone Column Rig	Piling Rig	Forklift	MEWPs	Roller Compactor	Water Truck		
FTA Reference Vibration	25	0.089	0.008	0.17	0.644	0.076	0.076	0.21	0.076	--	--
Banning's Landing Community Center	1020	0.000	0.000	0.001	0.002	0.000	0.000	0.001	0.000	0.2	No

Table 3.7-19: Orcem Site Construction Vibration – Indoor Impact Assessment

Receptor	Approx. Distance to Receptor (ft)	Vibration per Equipment (VdB)								Significance Threshold (VdB)	Significant Impact?
		Excavator	Mobile Crane	Stone Column Rig	Piling Rig	Forklift	MEWPs	Roller Compactor	Water Truck		
FTA Reference Vibration	25	87	66	93	104	86	86	94	86	--	--
Banning's Landing Community Center	1020	39	18	44	56	37	37	46	37	75	No

Table 3.7-20: Berth Repair Construction Vibration – Building Damage Impact Assessment

Receptor	Approx. Distance to Receptor (ft)	Vibration per Equipment (PPV, in/sec)							Significance Threshold (PPV, in/sec)	Significant Impact?
		Excavator	Loader	Scraper	Forklift	Roller Compactor	Diesel Hammer	Mobile Crane		
FTA Reference Vibration	25	0.089	0.089	0.003	0.076	0.210	0.644	0.008	--	--
Banning's Landing Community Center	1380	0.000	0.000	0.000	0.000	0.001	0.004	0.000	0.2	No

Table 3.7-21: Berth Repair Construction Vibration – Indoor Impact Assessment

Receptor	Approx. Distance to Receptor (ft)	Vibration per Equipment (VdB)							Significance Threshold (VdB)	Significant Impact?
		Excavator	Loader	Scraper	Forklift	Roller Compactor	Diesel Hammer	Mobile Crane		
FTA Reference Vibration	25	87	87	58	86	94	104	66	--	--
Banning's Landing Community Center	1380	35	35	5	33	42	59	14	75	No

1

Off-site vibration sources consist of haul trucks traveling to and from the site. According to FTA's Transit Noise and Vibration Impact Assessment Manual, vibration from trucks along roadways is unlikely to be perceptible, even if the receptor is close to a major roadway.

Operational Vibration

The only significant sources of vibration that would be permanently on site are two pieces of mobile equipment: the excavator and the front-end loader. The on-site stationary equipment is not known to be a significant source of vibration. The nearest sensitive receptor, Banning's Landing Community Center, is over 500 feet from the stockpiles where the excavator and front-end loader would operate. Accordingly, vibration from on-site activity would not cause excessive vibration at sensitive receptors.

Off-site vibration sources consist of medium trucks delivering gypsum, heavy trucks hauling away GGBFS, and worker vehicles traveling to and from the site. As with vibration from off-site trucks during construction, it is unlikely for trucks and worker vehicles to create any perceptible vibration.

Groundborne Noise

For typical construction activity, airborne noise levels are much higher than groundborne noise levels. According to FTA (2018), groundborne noise is typically only an issue for underground activity where there is no airborne noise path, or for buildings with significant sound insulation such as recording studios. As a result, groundborne noise is not considered further.

Impact Determination

Because construction of the Proposed Project would create vibration below the significance thresholds and vibration from operations would be minimal at the nearest sensitive receptor, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impacts would occur.

Alternative 1 – No Project

Under the No Project Alternative (Alternative 1), no construction or operational activities would take place. The site would continue to be largely vacant, likely used, as at present, for temporary storage and other small-scale activities. The No Project Alternative (Alternative 1) would not preclude future improvements to the Berths 192-194 site, but any future changes in use or new improvements that could have significant impacts on the environment would be analyzed in a separate environmental document.

Impact NOI-1: Would Alternative 1 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?

Under the No Project Alternative (Alternative 1), no construction or operational activities would take place.

Impact Determination

Because there would be no construction or operations, the No Project Alternative (Alternative 1) would have no impacts related to construction or operational noise.

Mitigation Measures

Mitigation is not applicable.

Residual Impacts

No impacts would occur.

NOI-2: Would Alternative 1 result in generation of excessive groundborne vibration or groundborne noise levels?

Under the No Project Alternative (Alternative 1), no construction or operational activities would take place. Accordingly, the No Project Alternative (Alternative 1) would produce no groundborne noise or vibration.

Impact Determination

Because there would be no construction or operational activities, there would be no impacts.

Mitigation Measures

Mitigation is not applicable.

Residual Impacts

No impacts would occur.

Alternative 2 – Reduced Project

This alternative would differ from the Proposed Project in the total annual throughput of the facility, which in turn would affect the amount of raw materials and product that would be on site at any time and the activity levels of the facility (see Section 2.7.1.2). However, the location of the storage piles and the size, number, and configuration of structures would be the same as for the Proposed Project, meaning that construction activities would be similar to those of the Proposed Project. Operation of the Reduced Project Alternative (Alternative 2) would involve fewer vessel calls, less equipment activity, and fewer trucks trips than the Proposed Project (see Table 2-2).

Impact NOI-1: Would Alternative 2 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?

Under the Reduced Project Alternative (Alternative 2), construction noise would be the same as that of the Proposed Project. Because operational activities would be somewhat less, operational noise levels would be lower than those of the Proposed Project.

Impact Determination

Because construction would be similar to the Proposed Project, the Reduced Project Alternative (Alternative 2) would have a significant impact related to construction noise. As with the Proposed Project, impacts related to operational noise would be less than significant.

Mitigation Measures

MM NOI-1: Noise Barriers Adjacent to Pile Driving Equipment.

> Where feasible, erect temporary noise barriers around landside pile driving equipment. The barriers should be installed directly between the pile driving equipment and the California Yacht Harbor so as to break line-of-sight.

MM NOI-2: Noise Reduction of Landside Pile Driving.

> In place of impact pile driving systems, where feasible, require the use a vibratory pile driving system or other pile driving system limited to 95 dBA or less when measured at a distance of 50 feet for landside pile driving.

Residual Impacts

Mitigation measures MM NOI-1 and MM NOI-2 are expected to reduce sound levels from pile driving activity by at least 5 dBA where it is feasible to apply. While the sound levels would be reduced by the mitigation measure, the residual impacts of construction noise would nevertheless be significant and unavoidable.

NOI-2: Would Alternative 2 result in generation of excessive groundborne vibration or groundborne noise levels?

Construction of the Reduced Project Alternative (Alternative 2) would be similar to construction of the Proposed Project. Accordingly, construction-related groundborne vibration and noise would be the same as for the Proposed Project. As described for the Proposed Project, construction activities would not cause exceedances of the significance thresholds at the landside receptor (Banning's Landing).

Because operational activities would be less than those of the Proposed Project, groundborne vibration and noise would be correspondingly lower. Accordingly, as described for the Proposed Project, on-site and off-site operational activities associated with the Reduced Project Alternative (Alternative 2) would not result in excessive groundborne vibration or noise.

Impact Determination

Because construction and operational activities would not cause excessive groundborne vibration or noise, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Alternative 3 – Product Import Terminal

This alternative would differ from the Proposed Project in that there would be no processing mill or raw material storage piles onsite; instead, various cementitious products would be imported by marine vessels and stored onsite for regional distribution. Although the raw material storage and milling facilities of the Proposed Project would not be constructed, the Product Import Terminal (Alternative 3) would require improvements to the Berth 191 wharf and the construction of large product storage silos and truck loading facilities. Accordingly, construction activities would be similar to those of the Proposed Project. Operation of the Product Import Terminal (Alternative 3) would involve a similar number of vessel calls and trucks trips as the Proposed Project (see Table 2-2), but would have no milling activities.

Impact NOI-1: Would Alternative 3 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?

Under the Product Import Terminal (Alternative 3), construction noise would be similar to that of the Proposed Project because most of the noise-producing elements of construction (e.g., pile driving and concrete work) would be similar in scope and duration. Operational activities would be somewhat less because there would be no grinding mills and fewer blowers. Accordingly, operational noise levels would likely be lower than those of the Proposed Project.

Impact Determination

Because construction would be similar to the Proposed Project, the Product Import Terminal (Alternative 3) would have a significant impact related to construction noise. As with the Proposed Project, impacts related to operational noise would be less than significant.

Mitigation Measures

MM NOI-1: Noise Barriers Adjacent to Pile Driving Equipment.

> Where feasible, erect temporary noise barriers around landside pile driving equipment. The barriers should be installed directly between the pile driving equipment and the California Yacht Harbor so as to break line-of-sight.

MM NOI-2: Noise Reduction of Landside Pile Driving.

In place of impact pile driving systems, where feasible, require the use a vibratory pile driving system or other pile driving system limited to 95 dBA or less when measured at a distance of 50 feet for landside pile driving.

Residual Impacts

Mitigation measures MM NOI-1 and MM NOI-2 are expected to reduce sound levels from pile driving activity by at least 5 dBA where it is feasible to apply. As with the Proposed Project, while the sound levels would be reduced by the mitigation measure, the residual impacts of construction noise would nevertheless be significant and unavoidable.

NOI-2: Would Alternative 3 result in generation of excessive groundborne vibration or groundborne noise levels?

Construction of the Product Import Terminal (Alternative 3) would be similar to construction of the Proposed Project. Accordingly, construction-related groundborne vibration and noise would be the same as for the Proposed Project. As described for the Proposed Project, construction activities would not cause exceedances of the significance thresholds at the landside receptor (Banning's Landing).

Because operational activities would be somewhat less than those of the Proposed Project (i.e., no on-site milling activities), groundborne vibration and noise would be correspondingly lower. Accordingly, as described for the Proposed Project, on-site and off-site operational activities associated with the Product Import Terminal (Alternative 3) would not result in excessive groundborne vibration or noise.

Impact Determination

Because construction and operational activities would not cause excessive groundborne vibration or noise, impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

3.7.4.4 Summary of Impact Determinations

Table 3.7-22 summarizes the CEQA impact determinations of the Proposed Project and its alternatives related to noise. This table is meant to identify the potential impacts of the Proposed Project and alternatives with respect to this resource. Identified potential impacts may be based on federal, state, or City significance criteria; LAHD criteria; and the scientific judgment of the report preparers.

For each impact threshold, the table describes the impact, notes the CEQA impact determinations, describes any applicable mitigation measures, and notes the residual impacts (i.e., the impact remaining after mitigation). All impacts, whether significant or not, are included in this table.

Table 3.7-22: Summary Matrix of Impacts and Mitigation Measures for Noise Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation/Lease Measures or Controls	Residual Impacts
Proposed Project	**NOI-1:** Would the Proposed 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?			
	NOI-1a: Daytime construction activities lasting more than 10 days in a 3-month period that would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive/receptor.	Significant	MM NOI-1: Noise Barriers Adjacent to Pile Driving Activities MM NOI-2: Noise Reduction of Landside Pile Driving	Significant and unavoidable
	NOI-1b: Construction activities could result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9:00 p.m. and 7:00 a.m., Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday.	Significant	MM NOI-1: Noise Barriers Adjacent to Pile Driving Activities MM NOI-2: Noise Reduction of Landside Pile Driving	Significant and unavoidable
	NOI-1c: For operational noise, a significant noise impact would occur if Project operations cause the ambient noise level measured at the property line of affected uses (i.e., sensitive receptors) to increase by 3 dBA in CNEL to or within the 'normally unacceptable' or 'clearly unacceptable category,' or any increase in CNEL 5 dBA or greater.	Less than significant	No mitigation is required	Less than significant
	NOI-2: Would the Proposed Project result in generation of excessive groundborne vibration or groundborne noise levels?	Less than significant	No mitigation is required	Less than significant

Table 3.7-22: Summary Matrix of Impacts and Mitigation Measures for Noise Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation/Lease Measures or Controls	Residual Impacts
Alternative 1 – No Project	**NOI-1:** Would Alternative 1 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?			
	NOI-1a: Daytime construction activities lasting more than 10 days in a 3-month period that would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive/receptor.	No impact	Not applicable	No impact
	NOI-1b: Construction activities could result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9:00 p.m. and 7:00 a.m., Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday.	No impact	Not applicable	No impact
	NOI-1c: For operational noise, a significant noise impact would occur if project operations cause the ambient noise level measured at the property line of affected uses (i.e., sensitive receptors) to increase by 3 dBA in CNEL to or within the 'normally unacceptable' or 'clearly unacceptable category,' or any increase in CNEL 5 dBA or greater.	No impact	Not applicable	No impact
	NOI-2: Would Alternative 1result in generation of excessive groundborne vibration or groundborne noise levels?	No impact	Not applicable	No impact
Alternative 2 – Reduced Project	NOI-1: Would Alternative 2 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?			

Table 3.7-22: Summary Matrix of Impacts and Mitigation Measures for Noise Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation/Lease Measures or Controls	Residual Impacts
	NOI-1a: Daytime construction activities lasting more than 10 days in a 3-month period that would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive/receptor.	Significant	MM NOI-1: Noise Barriers Adjacent to Pile Driving Activities MM NOI-2: Noise Reduction of Landside Pile Driving	Significant and unavoidable
	NOI-1b: Construction activities could result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9:00 p.m. and 7:00 a.m., Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday.	Significant	MM NOI-1: Noise Barriers Adjacent to Pile Driving Activities MM NOI-2: Noise Reduction of Landside Pile Driving	Significant and unavoidable
	NOI-1c: For operational noise, a significant noise impact would occur if project operations cause the ambient noise level measured at the property line of affected uses (i.e., sensitive receptors) to increase by 3 dBA in CNEL to or within the 'normally unacceptable' or 'clearly unacceptable category,' or any increase in CNEL 5 dBA or greater.	Less than significant	No mitigation is required	Less than significant
	NOI-2: Would Alternative 2 result in generation of excessive groundborne vibration or groundborne noise levels?	Less than significant	No mitigation is required	Less than significant
Alternative 3 – Product Import Terminal	NOI-1: Would Alternative 3 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?			

Table 3.7-22: Summary Matrix of Impacts and Mitigation Measures for Noise Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Applied Mitigation/Lease Measures or Controls	Residual Impacts
	NOI-1a: Daytime construction activities lasting more than 10 days in a 3-month period that would exceed existing ambient exterior noise levels by 5 dBA or more at a noise-sensitive/receptor.	Significant	MM NOI-1: Noise Barriers Adjacent to Pile Driving Activities MM NOI-2: Noise Reduction of Landside Pile Driving	Significant and unavoidable
	NOI-1b: Construction activities could result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9:00 p.m. and 7:00 a.m., Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday.	Significant	MM NOI-1: Noise Barriers Adjacent to Pile Driving Activities MM NOI-2: Noise Reduction of Landside Pile Driving	Significant and unavoidable
	NOI-1c: For operational noise, a significant noise impact would occur if project operations cause the ambient noise level measured at the property line of affected uses (i.e., sensitive receptors) to increase by 3 dBA in CNEL to or within the 'normally unacceptable' or 'clearly unacceptable category,' or any increase in CNEL 5 dBA or greater.	Less than significant	No mitigation is required	Less than significant
	NOI-2: Would Alternative 3 result in generation of excessive groundborne vibration or groundborne noise levels?	Less than significant	No mitigation is required	Less than significant

3.7.5 Mitigation Monitoring

Mitigation measures MM NOI-1 and NOI-2 would be applied to the Proposed Project and Alternative 2 (Reduced Project) and Alternative 3 (Product Import Terminal) as a condition of approval. Mitigation is not applicable to Alternative 1 (No Project).

Mitigation Measure	**MM NOI-1: Noise Barriers Adjacent to Pile Driving Activities** Where feasible, erect temporary noise barriers around all landside pile driving equipment. The barriers should be installed directly between the pile driving equipment and the California Yacht Harbor so as to break line-of-sight.
Timing	During construction.
Methodology	Orcem will include MM NOI-1 in the contract specifications for construction. LAHD will monitor implementation of mitigation measures during construction.

Mitigation Measure	**NOI-2: Noise Reduction of Landside Pile Driving** In place of impact pile driving systems, where feasible, require the use a vibratory pile driving system or other pile driving system limited to 95 dBA or less when measured at a distance of 50 feet for landside pile driving.
Timing	During construction.
Methodology	Orcem will include MM NOI-2 in the contract specifications for construction. LAHD will monitor implementation of mitigation measures during construction.

3.7.6 Significant Unavoidable Impacts

Construction noise associated with the Proposed Project, after mitigation, would result in temporary significant unavoidable impacts. No other significant unavoidable impacts of noise or vibration from construction or operation would occur.

Alternative 2 (Reduced Project) and Alternative 3 (Product Import Terminal) would have the same impacts as the Proposed Project. Accordingly, both alternatives would have significant and unavoidable impacts associated with construction noise.

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