Section 3.12
Noise

SECTION SUMMARY

This section addresses potential noise impacts associated with construction and operation of the proposed Project as well as alternatives to the proposed Project. Noise from construction activities and operations may affect noise-sensitive receptors in the area.

Section 3.12, Noise, provides the following:

- a description of environmental noise fundamentals;
- a description of 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 as well as the alternatives;
- a discussion regarding the methodology used to determine whether the proposed Project or the alternatives would result in a noise impact;
- an impact analysis of both the proposed Project as well as the alternatives; and
- a description of any mitigation measures proposed to reduce potential impacts, as applicable.

Key Points of Section 3.12

The proposed Project and alternatives would improve an existing container terminal; its operations would be consistent with other uses and container terminals in the proposed project area.

The proposed Project would result in a significant impact on noise-sensitive receptors (i.e., liveaboard boats) in the East Basin during construction (pile-driving activity) under both CEQA and NEPA. The following mitigation measures would reduce potentially significant impacts to less-than-significant levels:

- **MM NOI-1: Noise Reduction during Pile Driving.** The contractor will be required to use a pile-driving system such as a Bruce hammer (with silencing kit); an IHC Hydrohammer, SC series (with a sound insulation system); or an equivalent silenced hammer that is capable of limiting maximum noise levels at 50 feet from the pile driver to 104 A-weighted decibels, or less, during installation of king piles and sheet piles.
- **MM NOI-2: Erect Temporary Noise Attenuation Barriers Adjacent to Pile-Driving Equipment or Employ Temporary Shields to the Pile-Driving Equipment, Where Necessary and Feasible.** The need for and feasibility of noise attenuation barriers/curtains or pile driver shielding will be evaluated on a case-

by-case basis by considering the distance to noise-sensitive receptors, the available space at the construction location, safety, and proposed project operations. The noise barriers/curtains will be installed directly around the pile-driving equipment to shield the line of sight from the nearest noise-sensitive receptor, where feasible. Because the equipment would be mostly on the water and pile drivers are high above the water surface, noise barriers may not be feasible or effective to provide sufficient noise reduction, depending on the construction sites and pile-driving activity and equipment specified for each site. Another alternative is to employ shields that are physically attached to the pile drivers. The pile driver shielding is more effective where considerable noise reduction is required.

It should be noted that the analyses in this section focus on air borne noise impacts on humans and noise-sensitive receptors above the ground. The primary discussion of underwater noise impacts to marine mammals is presented in Section 3.3, Biological Resources. MM BIO-1 would mitigate underwater noise impacts on marine mammals.

Operation of the proposed Project and its alternatives would not result in significant impacts on noise-sensitive receptors in the Port area.

3.12.1 Introduction

This section describes existing noise conditions in the proposed project area, discusses applicable regulations and thresholds, and addresses potential noise impacts that could result from the proposed Project and alternatives.

The analyses in this section focus on impacts on humans and noise-sensitive receptors. The primary discussion of noise conditions, including underwater noise, and impacts on aquatic and terrestrial wildlife species is presented in Section 3.3, Biological Resources.

3.12.1.1 Noise Fundamentals

Noise is commonly defined as unwanted sound. Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a hearing organ, such as a human ear. Noise is often defined as sound that is objectionable because it is disturbing or annoying.

In the science of acoustics, the fundamental model consists of a sound (or 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.

Technical acoustical terms used in this section are defined in Table 3.12-1.

Table 3.12-1: Definitions of Acoustical Terms

Term	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 the reference pressure. The reference pressure for air is 20 micropascals.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micropascals (or micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micropascals in air). Sound pressure level is the quantity that is measured directly by a sound level meter.
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sounds are below 20 Hz, and ultrasonic sounds are above 20,000 Hz.
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.

Table 3.12-1: Definitions of Acoustical Terms

Term	Definition
Equivalent Noise Level (L_{eq})	The average A-weighted noise level during the measurement period. The hourly L_{eq} used for this report is denoted as dBA L_{eq}[h].
Community Noise Equivalent Level (CNEL)	The average A-weighted noise level during a 24-hour day, which is obtained by adding 5 dB to sound levels in the evening from 7 p.m. to 10 p.m. and 10 dB to sound levels between 10 p.m. and 7 a.m.
Day/Night Noise Level (L_{dn})	The average A-weighted noise level during a 24-hour day, which is obtained by adding 10 dB to sound levels measured at night between 10 p.m. and 7 a.m.
L_{10}, L_{50}, L_{90}	A-weighted noise levels that are exceeded 10%, 50%, and 90% of the time during the measurement period.
Maximum Sound Level (Lmax)	The maximum sound level measured during the measurement period.
Minimum Sound Level (Lmin)	The minimum sound level measured during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.

Sound Descriptors

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or Hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in kilohertz (kHz), or thousands of Hz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micropascals (mPa). One mPa is approximately one hundred-billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 mPa. Because of this large range of values, sound is rarely expressed in terms of mPa. Instead, a logarithmic scale is used to describe the sound pressure level (also referred to simply as the sound level) in terms of decibels. The threshold of hearing for young people is about 0 dB, which corresponds to 20 mPa.

The dB scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the sound pressure level in that range. In general, people are most sensitive to the frequency range of 1,000 to 8,000 Hz and perceive sounds within that range better than sounds of the same amplitude in higher or lower frequencies. To approximate the response of the human ear, sound levels of individual frequency bands are weighted,

depending on human sensitivity to those frequencies. The A-weighted sound level (expressed in units of dBA) can be computed on the basis of this information.

The A-weighting scale approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments regarding the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Table 3.12-2 describes typical A-weighted sound levels for various noise sources.

Table 3.12-2: Typical A-Weighted Sound Levels

Common Outdoor Noise Source	Sound Level (dBA)	Common Indoor Noise Source
	— 110 —	Rock band
Jet flying at 1,000 feet		
	— 100 —	
Gas lawn mower at 3 feet		
	— 90 —	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	— 80 —	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower at 100 feet	— 70 —	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	— 60 —	
		Large business office
Quiet urban daytime	— 50 —	Dishwasher in next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime		
	— 30 —	Library
Quiet rural nighttime		Bedroom at night
	— 20 —	
		Broadcast/recording studio
	— 10 —	
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing

Source: California Department of Transportation 2009.

Decibel Addition

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 corresponds to a 3 dB increase. In other words, when two identical sources are each producing sound of the same loudness, their combined sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one excavator produces a sound pressure level of 80 dBA, two excavators would not produce

160 dBA. Rather, they would combine to produce 83 dBA. The cumulative sound level of any number of sources, such as excavators, can be determined using decibel addition.

Noise Descriptors

Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations is utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called L_{eq}. A common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration. The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within approximately plus or minus 1 dBA. Two metrics describe the 24-hour average, L_{dn} and CNEL (defined in Table 3.12-1). Both include penalties for noise during nighttime hours; CNEL penalizes noise during the evening. CNEL and L_{dn} are normally within one dBA of each other and used interchangeably in this section.

Human Response to Noise

Studies have shown that under controlled conditions in an acoustics laboratory, a healthy human ear is able to discern changes in sound levels of one dBA. In the normal environment, the healthy human ear can detect changes of about two dBA; however, it is widely accepted that changes of three dBA in the normal environment are considered just noticeable to most people. A change of five dBA is readily perceptible, and a change of ten dBA is perceived as being twice as loud. Accordingly, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) resulting in a three dB increase in sound would generally be barely detectable.

Sound Propagation

When sound propagates over a distance, it changes in both level and frequency content. The manner in which noise is reduced with distance depends on the following important factors:

Geometric spreading. Sound from a single source (i.e., a "point" source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates (or drops off) at a rate of six dBA for each doubling of distance. Highway noise is not a single stationary point source of sound. The movement of vehicles on a highway makes the source of the sound appear to emanate from a line (i.e., a "line" source) rather than from a point. This results in cylindrical spreading rather than the spherical spreading resulting from a point source. The change in sound level (i.e., attenuation) from a line source is three dBA per doubling of distance.

Ground absorption. Usually the noise path between the source and the observer is very close to the ground. The excess noise attenuation from ground absorption occurs due to acoustic energy losses on sound wave reflection. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is done for simplification only; for distances of less than 200 feet, prediction results based on this scheme are sufficiently accurate. For acoustically "hard" sites (i.e., sites with a reflective surface, such as a parking lot or a smooth body of water, between the source and the receptor), no excess ground attenuation is assumed because

the sound wave is reflected without energy losses. For acoustically absorptive or "soft" sites (i.e., sites with an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees), an excess ground attenuation value of 1.5 dBA per doubling of distance is normally assumed. When added to the geometric spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dBA per doubling of distance for a line source and 7.5 dBA per doubling of distance for a point source.

Atmospheric effects. Research by Caltrans and others has shown that atmospheric conditions can have a major effect on noise levels. Wind has been shown to be the single most important meteorological factor within approximately 500 feet, whereas vertical air temperature gradients are more important over longer distances. Other factors, such as air temperature, humidity, and turbulence, also have major effects. Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lower noise levels. Increased sound levels can also occur because of temperature inversion conditions (i.e., increasing temperature with elevation, with cooler air near the surface, where the sound source tends to be and the warmer air above which acts as a cap, causing a reflection of ground level–generated sound).

Shielding by natural or human-made features. A large object or barrier in the path between a noise source and a receptor can substantially attenuate noise levels at the receptor. The amount of attenuation provided by this shielding depends on the size of the object, proximity to the noise source and receptor, surface weight, solidity, and the frequency content of the noise source. Natural terrain features (such as hills and dense woods) and human-made features (such as buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receptor with the specific purpose of reducing noise. A barrier that breaks the line of sight between a source and a receptor will typically result in at least 5 dB of noise reduction. A higher barrier may provide as much as 20 dB of noise reduction.

3.12.1.2 Groundborne Vibration Fundamentals

Groundborne vibration is an oscillatory motion of the soil with respect to the equilibrium position and can be quantified in terms of velocity or acceleration. Groundborne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Most perceptible indoor vibration is caused by sources within buildings, such as the operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are heavy construction equipment (such as blasting and pile driving), steel-wheeled trains, and heavy trucks on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible.

Table 3.12-3 summarizes the typical groundborne vibration velocity levels (measured in decibel units [VdB]) and average human response to vibration that may be anticipated when a person is at rest in quiet surroundings. If the person is engaged in any type of physical activity, vibration tolerance increases considerably. The duration of the vibration event has an effect on human response, as does its daily frequency of occurrence. Generally, as the duration and frequency of occurrence increase, the potential for adverse human response increases. Typical background vibration levels in

residential areas are usually 50 VdB or lower, well below the threshold (65 VdB) of perception for most humans.

Table 3.12-3: 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 from construction project
		Bulldozer or heavy tracked construction equipment
Difficulty in reading computer screen	90	
		Upper range of commuter rail
Threshold for residential annoyance for occasional events (e.g., commuter rail)	80	Upper range of rapid transit
Threshold for residential annoyance for frequent events (e.g., rapid transit)		Typical commuter rail Bus or truck over bump
	70	Typical rapid transit
Approximate threshold for human perception of vibration Limit for vibration sensitive equipment		Typical bus or truck on public road
	60	
		Typical background vibration
	50	

Source: Federal Transit Administration 2006.

Groundborne noise is a secondary phenomenon of groundborne vibration. When building structure vibrates, noise is radiated into the interior of the building. Typically, this is a low frequency sound that would be perceived as a low rumble. The magnitude of the sound depends on the frequency characteristic of the vibration and the manner in which the room surfaces in the building radiate sound. Groundborne noise is quantified by the A-weighted sound level inside the building. The sound level accompanying vibration 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 2006.)

3.12.2 Environmental Setting

3.12.2.1 Existing Noise Environment

With respect to noise, the proposed project site can be characterized as an area with periodic increases in noise levels associated with terminal operations onsite and nearby, railroad train movement along the various railroad lines in the area, vehicular traffic on the local street network and freeways, industrial sources, and activities at the Port. The noise environment at any particular location depends on proximity to the various noise

sources, although traffic noise is the predominant noise source in the proposed project area.

For the purpose of this report, noise-sensitive receptors are defined as residences (which, for the proposed Project, includes liveaboards on boats used as residences), schools, hospitals, libraries, places of worship, and public parks. The nearest residential area to the proposed project site is located about 0.8 mile to the west, across the Main Channel of the Los Angeles Harbor (ST-1 and LT-2 on Figure 3.12-1). The nearest parks are John Gibson Jr. Park, located about one mile to the southwest (ST-2, shown on Figure 3.12-1), across the Main Channel, and Wilmington Waterfront Park, located about one mile to the northwest, north of the West Basin. There are also liveaboards at a series of marinas in the East Basin and Cerritos Channel, just west of Schuyler Heim Bridge and Henry Ford Bridge (SR-47) (ST-3, ST-4, and LT-1 on Figure 3.12-1), with the closest being 0.5 mile from the proposed Project site. These marinas include Island Yacht Anchorage, Lighthouse Yacht Landing, and Cerritos Yacht Anchorage on Anchorage Road and Newmarks Yacht Centre, Pacific Yacht Landing, and California Yacht Marina on Peninsula Road. Figure 3.12-1 shows noise monitoring locations associated these noise-sensitive receptors in the proposed project vicinity. For the purposes of noise impact analysis, the area of influence includes those sensitive receptors closest to the proposed 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 and sensitive receptors along major transportation corridors that serve the proposed project area.

3.12.2.2 Noise Monitoring

Noise monitoring surveys were conducted in August and September 2013 to quantify existing ambient noise levels at representative locations near the proposed project area. The 24-hour long-term (LT) noise levels were monitored during the daytime, evening, and nighttime at consecutive hourly intervals at two representative locations, and 15-minute short-term (ST) noise measurements were conducted during the daytime at four representative locations. Figure 3.12-1 shows the long-term and short-term noise measurement sites. The results of the long-term noise measurements are summarized in Table 3.12-4, and the results of the short-term noise level measurements are summarized in Table 3.12-5. The noise measurement sites are described below.

Measurements LT-1, ST-3, and ST-4 represent the ambient noise levels at the liveaboard boats in the marinas. Noise sources in the area include industrial activities at the Port, construction activities in the vicinity, traffic on Anchorage Road and SR-47, nearby local businesses, and, occasionally, a distant train horn. The primary noise source is traffic on SR-47 in the vicinity; therefore, the closer the measurement site to SR-47 (Schuyler Heim Bridge), the higher the ambient noise level. The average daytime noise levels (L_{eq}) at ST-3, LT-1, and ST-4 were 58 dBA, 56 dBA, 54 dBA, respectively. The average 24-hour daily noise level measured at LT-1 was 61 dBA CNEL.

Measurements LT-2 and ST-1 represent ambient noise in the residential area west of the Main Channel. Noise sources in the area include traffic on local streets, Harbor Boulevard, and SR-47; distant industrial activity from the Port; and, occasionally, a distant train horn or aircraft. The primary noise source is traffic on local streets, Harbor Boulevard, and SR-47. The average daytime noise level (L_{eq}) in the residential area was 61 dBA, and the average 24-hour daily noise level was 64 dBA CNEL.

Measurement ST-3 represents the ambient noise at John Gibson Jr. Park. The primary noise source at the park is traffic on Harbor Boulevard, along with distant construction and industrial activities in the vicinity. The daytime noise level (L_{eq}) was 62 dBA.

Table 3.12-4: Long-Term Noise Monitoring Results

Site	Site Description (Date)	Noise Level, dBA: CNEL	Noise Level, dBA: Daytime L_{eq} (7 a.m.–10 p.m.)	Noise Level, dBA: Nighttime L_{eq} (10 p.m.–7 a.m.)	Noise Sources
LT-1	Liveaboard boats at Lighthouse Yacht Landing on Anchorage Road (9/5/2013–9/6/2013)	61	56	54	Quiet ambient noise environment. Noise sources include distant industrial activity at the Port to the west, construction activity to the north, and traffic on Anchorage Road, nearby local businesses, and distant train horns from rail lines to the south and east.
LT-2	Residences on N Palos Verdes Street (8/27/2013–8/28/213)	64	61	56	Primary noise source is traffic on local streets and SR-47 (Vincent Thomas Bridge). Other noise sources include distant industrial activity at the Port and distant train horns and helicopters.

Table 3.12-5: Short-Term Noise Monitoring Results

Site	Site Description (Date, Time)	Noise Level, dBA: L_{10}	Noise Level, dBA: L_{eq}	Noise Level, dBA: L_{50}	Noise Level, dBA: L_{90}	Noise Sources
ST-1	Residences on N Palos Verdes Street (8/27/2013, 11:35)	59	58	57	55	Primary noise source is traffic on local streets and SR-47 (Vincent Thomas Bridge). Other noise sources include distant industrial activity from the Port and distant train horns and helicopters.
ST-2	John Gibson Jr. Park on S Harbor Boulevard (8/27/2013, 12:05)	66	62	59	54	Primary noise source is traffic on Harbor Boulevard. Other noise sources include distant construction and industrial activities.

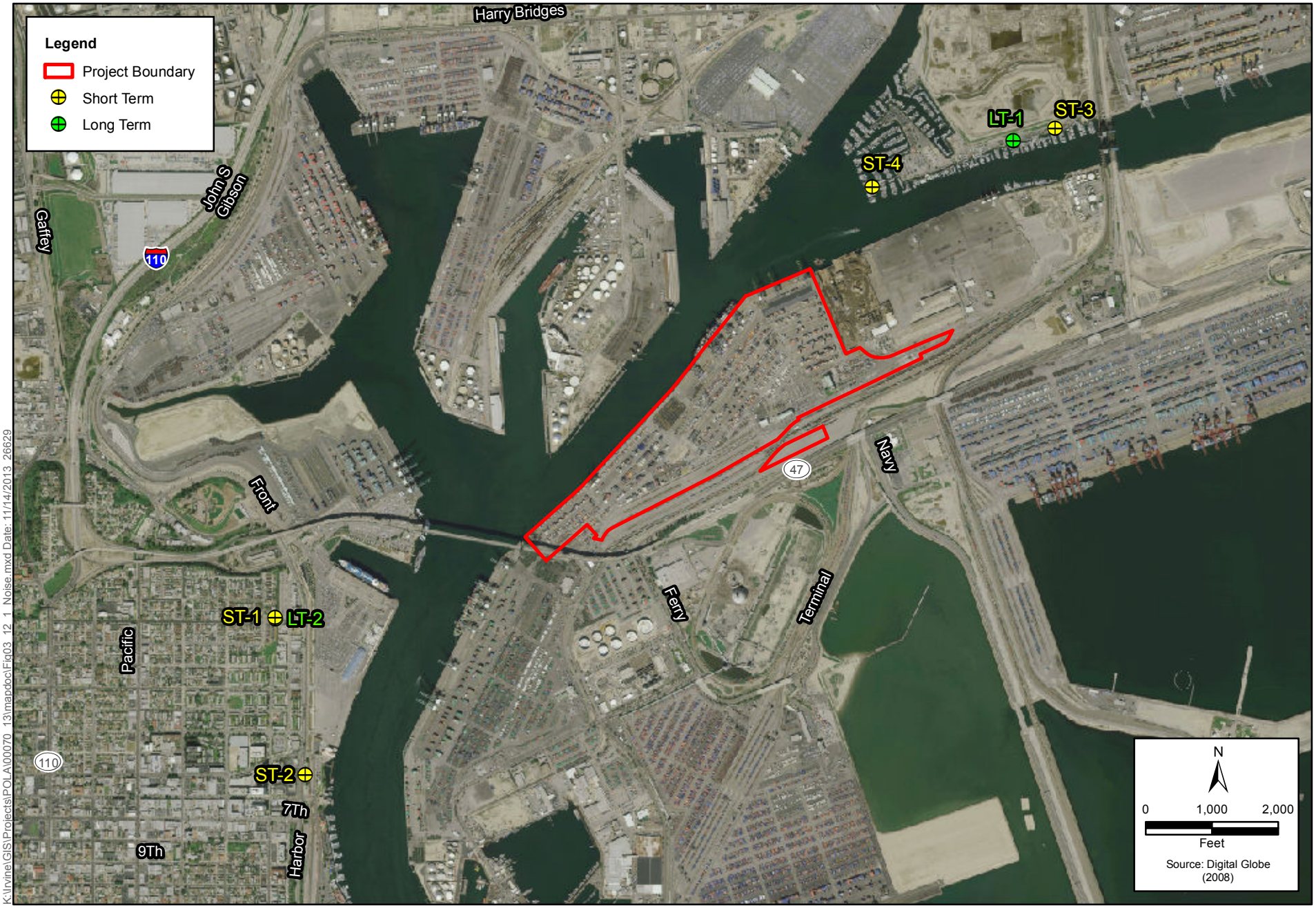

Figure 3.12-1
Noise Measurement Locations
Berths 212-224 [YTI] Container Terminal Improvements Project

Table 3.12-5: Short-Term Noise Monitoring Results

Site	Site Description (Date, Time)	Noise Level, dBA L_{10}	L_{eq}	L_{50}	L_{90}	Noise Sources
ST-3	Liveaboard boats at Island Yacht Anchorage on Anchorage Road (8/27/2013, 12:50)	61	58	56	51	Primary noise source is traffic from Anchorage Road and SR-47 (Schuyler Heim Bridge). Other noise sources include construction activity to the north and distant industrial activity.
ST-4	Liveaboard boats at Newmarks Yacht Centre on Peninsula Road (8/27/2013, 13:15)	57	54	51	50	Quiet ambient noise environment. Distant industrial activity from the Port and distant train horns.

3.12.3 Applicable Regulations

The *L.A. CEQA Thresholds Guide* (City of Los Angeles 2006) includes the following checklist questions regarding environmental noise impacts:

a. Would the project result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?

b. Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

c. Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

d. Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels without the project?

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

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

Significance criteria are established to address questions a, b, c, and d regarding potential noise impacts during each of the two stages of construction and operation of the proposed Project and alternatives. Questions e and f are not applicable to this assessment because the NOP/NOI dismissed these as having no impact (refer to Appendix A). Background information regarding applicable or related regulations adopted by the City of Los Angeles or other agencies is presented below.

3.12.3.1 City of Los Angeles Municipal Code

Section 41.40 of the City of Los Angeles Municipal Code establishes when construction work is prohibited. The municipal code section states the following:

> (a) No person shall between the hours of 9 p.m. and 7 a.m. of the following day perform any construction or repair work of any kind upon or any excavating for, any building or structure, where any of the foregoing entails the use of any power-driven drill, driven machine, excavator, or any other machine, tool, device, or equipment which makes loud noises to the disturbance of persons occupying sleeping quarters in any dwelling, hotel, or apartment or other place of residence. In addition, the operation, repair or servicing of construction equipment and the jobsite delivering of construction materials in such areas shall be prohibited during the hours herein specified. Any person who knowingly and willfully violates the foregoing provision shall be deemed guilty of a misdemeanor punishable as elsewhere provided in this code.
>
> (b) The provisions of Subsection (a) shall not apply to any person who performs the construction, repair or excavation work involved pursuant to the express written permission of the Board of Police Commissioners through its Executive Director. The Executive Director, on behalf of the Board, may grant this permission, upon application in writing, where the work proposed to be done is in the public interest, or where hardship or injustice, or unreasonable delay would result from its interruption during the hours mentioned above, or where the building or structure involved is devoted or intended to be devoted to a use immediately related to public defense. The provisions of this section shall not in any event apply to construction, repair or excavation work done within any district zoned for manufacturing or industrial uses under the provisions of Chapter I of this Code, nor to emergency work necessitated by any flood, fire or other catastrophe.

The code section also provides certain provisions for exceptions and exemptions. Chapter 11 of the municipal code sets forth noise regulations, including regulations applicable to construction noise impacts. Section 112.05 establishes maximum noise levels for powered equipment or powered hand tools. This section states:

> 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 powered hand tool that produces a maximum noise level exceeding the following noise limits at a distance of 50 feet there from (a) 75 dBA 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, depressors, and pneumatic or other powered equipment; (b) 75 dBA for powered equipment of 20 horsepower or less intended for infrequent use in residential areas including chain saws, log chippers, and powered hand tools; and (c) 65 dBA for powered equipment intended for repetitive use in residential areas including lawn mowers, backpack mowers, 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 federal Environmental Protection Agency and published in the Federal Register.
>
> Said noise limitations shall not apply where compliance therewith is technically infeasible. The burden of proving that compliance is technically infeasible shall be upon the person or persons charged with a violation of this section. Technical infeasibility shall mean that said noise limitations cannot be complied with despite the use of mufflers, shields, sound barriers, and/or other noise reduction device and techniques during the operation of the equipment.

Section 112.04 of the municipal code addresses issues related to "powered equipment intended for repetitive use in residential areas and other machinery, equipment, and devices." That section establishes criteria for stationary noise-source intrusion on neighboring lands. The applicable standard threshold under this section is a 5 dBA increase at any sensitive property.

3.12.4 Impacts and Mitigation Measures

3.12.4.1 Methodology

CEQA Baseline

Section 15125 of the CEQA Guidelines requires EIRs to include a description of the physical environmental conditions in the vicinity of a project that exist at the time of the NOP. These environmental conditions normally would constitute the baseline physical conditions by which the CEQA lead agency determines if an impact is significant. The NOP for the proposed Project was published in April 2013. For purposes of this Draft EIS/EIR, the CEQA baseline takes into account the throughput for the 12-month calendar year preceding NOP publication (January through December 2012) in order to provide a representative characterization of activity levels throughout the complete calendar year preceding release of the NOP. In 2012, the YTI Terminal encompassed approximately 185 acres under its long-term lease, supported 14 cranes (10 operating), and handled approximately 996,109 TEUs and 162 vessel calls. The CEQA baseline conditions are also described in Section 2.7.1 and summarized in Table 2-1.

The CEQA baseline represents the setting at a fixed point in time. The CEQA baseline differs from the No Project Alternative (Alternative 1) in that the No Project Alternative addresses what is likely to happen at the proposed project site over time, starting from the existing conditions. Therefore, the No Project Alternative allows for growth at the proposed project site that could be expected to occur without additional approvals, whereas the CEQA baseline does not.

NEPA Baseline

For purposes of this Draft EIS/EIR, the evaluation of significance under NEPA is defined by comparing the proposed Project or other alternative to the NEPA baseline. The NEPA baseline conditions are described in Section 2.7.2 and summarized in Table 2-1. The NEPA baseline condition for determining significance of impacts includes the full range of construction and operational activities the applicant could implement and is likely to implement absent a federal action, in this case the issuance of a USACE permit.

Unlike the CEQA baseline, which is defined by conditions at a point in time, the NEPA baseline is not bound by statute to a "flat" or "no-growth" scenario. Instead, the NEPA baseline is dynamic and includes increases in operations for each study year (2015, 2016, 2017, 2020, and 2026), which are projected to occur absent a federal permit. Federal permit decisions focus on direct impacts of the proposed Project to the aquatic environment, as well as indirect and cumulative impacts in the uplands determined to be within the scope of federal control and responsibility. Significance of the proposed Project or the alternatives under NEPA is defined by comparing the proposed Project or the alternatives to the NEPA baseline.

The NEPA baseline, for purposes of this Draft EIS/EIR, is the same as the No Federal Action Alternative. Under the No Federal Action Alternative (Alternative 2), no dredging, dredged material disposal, in-water pile installation, or crane installation/extension would occur. Expansion of the TICTF and extension of the crane rail would also not occur. The No Federal Action Alternative includes only backlands improvements consisting of slurry sealing, deep cold planing, asphalt concrete overlay, restriping, and removal, relocation, or modification of any underground conduits and pipes necessary to complete repairs. These activities do not change the physical or operational capacity of the existing terminal.

The NEPA baseline assumes that by 2026 the terminal would handle up to approximately 1,692,000 TEUs annually, accommodate 206 annual ships calls at two berths, and be occupied by 14 cranes (10 operating).

Noise Level Estimate

This noise impact analysis evaluates the temporary noise increase associated with proposed project construction activities, the permanent noise increase associated increased operational activities at the terminal, and traffic noise associated with proposed project-related changes in traffic patterns.

Noise impacts associated with onsite construction activities were evaluated using construction phase, schedule, and equipment information and the methods and construction equipment noise data recommended by FHWA (2006a) for the Roadway Construction Noise Model (RCNM).

Noise impacts associated with increased truck volumes generated by the proposed Project and alternatives were evaluated using methods for the FHWA Traffic Noise Model (TNM). Traffic noise was evaluated in terms of how proposed project-related traffic noise increases could affect existing noise-sensitive receptors.

Estimates of noise generated by point sources (e.g., construction equipment and stationary operational equipment) included a point-source attenuation of 6 dB per doubling of distance, with a molecular absorption of 0.7 dB per 1,000 feet and anomalous excess attenuation of 1 dB per 1,000 feet (Hoover and Keith 2000). Estimates of noise generated by line sources (e.g., trucks traveling on streets) included a line-source attenuation of 3 dB per doubling of distance from the noise source.

3.12.4.2 Thresholds of Significance

The *L.A. CEQA Thresholds Guide* (City of Los Angeles 2006) contains the following significance thresholds related to construction noise. These thresholds were used to evaluate potential impacts under CEQA and NEPA.

A project or alternative would normally have a significant impact on noise levels from construction during the *daytime* if:

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

A project or alternative would normally have a significant impact on noise levels from construction during the *nighttime* if:

NOI-2: Construction activities would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9 p.m. and 7 a.m. Monday through Friday, before 8 a.m. or after 6 p.m. on Saturday, or at any time on Sunday.

The *L.A. CEQA Thresholds Guide* (City of Los Angeles 2006) contains the following significance thresholds for operational noise impacts due to stationary sources, vehicular traffic, or increased railroad operations.

NOI-3: The ambient noise level measured at the property line of affected uses would increase by 3 dBA in CNEL, to or within the "normally unacceptable" or "clearly unacceptable" category, or any 5 dBA or greater noise increase.

Table 3.12-6 presents land use noise compatibility guidelines. As shown in Table 3.12-6, ambient noise levels measured at noise-sensitive receptors in the proposed project vicinity are between 61 and 64 dBA CNEL, which is below the normally unacceptable and clearly unacceptable thresholds for residential, park, and water recreation uses. Therefore, a significant impact would occur if the proposed Project or alternative would cause CNEL noise levels at these noise-sensitive receptors to increase by 5 dBA or greater.

Table 3.12-6: Land Use Noise Compatibility Guidelines

	Community Noise Exposure CNEL, dB			
Land Use	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

Table 3.12-6: Land Use Noise Compatibility Guidelines

Land Use	Community Noise Exposure CNEL, dB			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Playgrounds, Neighborhoods Parks	50–70	—	67–75	above 72
Golf Courses, Riding Stables, Water, Recreation, Cemeteries	50–75	—	70–80	above 80

Source: City of Los Angeles 2006.

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.

A project or alternative would normally have a significant impact on noise levels from construction if:

NOI-4: Construction or operation would expose persons to or generate excessive groundborne vibration or groundborne noise levels.

3.12.4.3 Impact Determination

Proposed Project

Impact NOI-1: Construction of the proposed Project would result in 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 noise-sensitive receptors.

Noise levels generated by construction equipment would vary greatly, depending on factors such as the type of equipment, the specific model, the operation being performed, and the condition of the equipment. The equivalent sound level (L_{eq}) of the construction activity also depends on the fraction of time that the equipment is operated over the time period of construction. The dominant source of noise from most construction equipment is the engine. In a few cases, such as impact pile driving or pavement breaking, noise generated by the process dominates.

Table 3.12-7 summarizes typical noise levels produced by the anticipated construction equipment using FHWA noise data (Federal Highway Administration 2006). L_{max} sound levels at 50 feet are shown along with the typical acoustical use factors. The acoustical use factor is the percentage of time each piece of construction equipment is typically operated at full power (i.e., its noisiest condition) during construction. This is used to

estimate L_{eq} values from L_{max} values. For example, the L_{eq} value for a piece of equipment that operates at full power 50% of the time (acoustical use factor of 50) is 3 dB less than the L_{max} value.

Table 3.12-7: Typical Construction Equipment Noise Emission Levels

Equipment Type	L_{max} Noise Level at 50 feet from Source (dBA)	Acoustical Use Factor (%)	L_{eq} Noise Level at 50 feet from Source (dBA)
Concrete Mixer Truck	79	40	75
Crane	81	16	73
Excavator	81	40	77
Grader	85	40	81
Loader	79	40	75
Manlift	75	20	68
Mounted Impact Hammer	90	20	83
Paver	77	50	74
Pile Driver[a]	107	20	94
Pneumatic Tool	85	50	82
Pump	81	50	78
Roller	80	20	73
Scraper	84	40	80
Tractor	84	40	80
Truck	76	40	72
Vacuum Street Sweeper	82	10	72
Welder	74	40	70
Ballast Tamper[a]	83	50	80
Tie Inserter[a]	85	50	82
Tugboat[b]	88	50	85
Dive Boat[b]	87	50	84
Dredger[b]	88	50	85

Source: Federal Highway Administration 2006; Federal Transit Administration 2006.

Note:

[a]FTA noise data do not include the acoustical use factors; acoustical use factor of 50, as recommended by FHWA, is used to calculate Leq noise level.

[b]Noise level is calculated using equipment horsepower provided by the applicant for the equipment and the reciprocating engine methods recommended by Hoover & Keith (2000). Acoustical use factor of 50, as recommended by FHWA, is used to calculate Leq noise level.

Table 3.12-8 lists the construction equipment that is expected to be used for each construction activity and summarizes the combined noise level at 50 feet from the construction equipment. The estimated construction noise levels reflect a conservative condition where the five loudest pieces of equipment for each activity are assumed to operate simultaneously for a 1-hour period. In reality, construction activities would most likely be intermittent, so actual noise levels could be somewhat lower than the estimated noise levels in Table 3.12-8.

Table 3.12-8: Noise Level and Equipment by Construction Activity

Construction Activity	Equipment	L_{eq} Noise Level at 50 feet from Source (dBA)
Sheet and King Piling	Pile/vibratory hammer, jet pump, tugboat, dive boat, delivery truck	100
Dredging	Dredger/clamshell bucket, tugboat, excavator, sweeping truck, dump truck	89
Crane Improvements[a]	Excavator, crane, loader, forklift, paving machine, welder, tractor, hydraulic lift, man lift, water truck, concrete truck, slurry truck, tugboat	87
TICTF Expansion	Excavator, crane, tamper, loader, forklift, grader, paving machine, roller, flatbed trailer, water truck, tie truck	86
Backland Improvements[b]	Scraper/milling machine, paving machine, roller, loader, excavator, slurry truck, pickup trucks, striping truck, water truck	84

[a]Crane improvements include the crane rail extension, crane relocation/realignment, new crane delivery, crane height raising, and boom extension.
[b]Backland improvements include a concrete runway, cold plane and asphalt concrete overlay, slurry seal, striping.

Construction activities for all proposed project components are expected to last more than ten days in any three-month period. According to the thresholds of significance, an impact would be considered significant under CEQA and NEPA if noise from these activities would cause the existing ambient exterior noise levels to increase by 5 dBA or more at a noise-sensitive receptor.

Table 3.12-9 summarizes the anticipated construction noise exposure at noise-sensitive locations using the noise level estimated for each construction activity, as shown in Table 3.12-8. The estimated noise levels at noise-sensitive locations take into consideration the effects of distance attenuation and atmospheric effects. As discussed below, construction of the proposed Project could result in a significant noise impact on nearby liveaboard boats during sheet and king pile installation.

Table 3.12-9: Estimated Construction Noise Levels at Nearest Noise-Sensitive Areas – Proposed Project

			Construction Noise L_{eq} at Receptor (dBA)				
Noise-Sensitive Area (Measurement Site)	Existing Daytime L_{eq} (dBA)	Existing Nighttime L_{eq} (dBA)	Piling [a]	Dredging	Crane Improvements	TICTF Expansion	Backland Improvements
Liveaboard Boats (LT-1, ST-3, ST-4)	56	54	62[a]	50	49	42	51
Residences (LT-2, ST-1)	61	56	51	39	38	38	39

Table 3.12-9: Estimated Construction Noise Levels at Nearest Noise-Sensitive Areas – Proposed Project

Noise-Sensitive Area (Measurement Site)	Existing Daytime L_{eq} (dBA)	Existing Nighttime L_{eq} (dBA)	Construction Noise L_{eq} at Receptor (dBA)				
			Piling [a]	Dredging	Crane Improvements	TICTF Expansion	Backland Improvements
Park (ST-2)	62	–	47	35	34	36	36

Notes:

a. Noise levels are calculated from the closest pile driving to each receptor. For liveaboard boats, the closest pile driving would be at Berth 214; for residences and park, the closest pile driving would be at Berth 220.

During peak construction, construction-related vehicle trips (construction worker commute trips and truck hauling and delivery trips) are expected to represent a small fraction of the peak-hour and daily traffic volumes on access roadways in the proposed project area. This small fraction of additional vehicles compared with overall traffic in the proposed project area would not result in a noticeable increase in noise levels (a doubling of traffic would be required for a minimally audible three dB increase in noise to occur.) Therefore, traffic generated from construction vehicle trips would be considered a less-than-significant impact.

CEQA Impact Determination

As shown in Table 3.12-9, construction noise from dredging, crane improvements, TICTF improvements, and backland improvements would not increase existing ambient noise levels at any identified noise-sensitive receptor in the proposed project vicinity by 5 dBA or more; however, noise produced by pile driving during sheet and king pile installation would be 6 dB above the ambient noise level at the nearby liveaboard boat area (sites LT-1, ST-3, ST-4) and result in a combined noise level of 63 dBA (7 dB increase over exiting ambient noise level). These impacts would be temporary but significant under CEQA.

Mitigation Measures

MM NOI-1: **Noise Reduction during Pile Driving.** The contractor will be required to use a pile-driving system such as a Bruce hammer (with silencing kit); an IHC Hydrohammer, SC series (with a sound insulation system); or an equivalent silenced hammer that is capable of limiting maximum noise levels at 50 feet from the pile driver to 104 dBA, or less, during installation of king piles and sheet piles.

MM NOI-2: **Erect Temporary Noise Attenuation Barriers Adjacent to Pile-Driving Equipment or Employ Temporary Shields to the Pile-Driving Equipment, Where Necessary and Feasible.** The need for and feasibility of noise attenuation barriers/curtains or pile driver shielding will be evaluated on a case-by-case basis by considering the distance to noise-sensitive receptors, the available space at the construction location, safety, and proposed project operations. The noise barriers/curtains will be installed directly around the pile-driving equipment to shield the line of sight from the nearest noise-sensitive receptor, where feasible.

Because the equipment would be mostly on the water and pile drivers are high above the water surface, noise barriers may not be feasible or effective to provide sufficient noise reduction, depending on the construction sites and pile-driving activity and equipment specified for each site. Another alternative is to employ shields that are physically attached to the pile drivers. The pile driver shielding is more effective where considerable noise reduction is required.

Residual Impacts

The above mitigation measures are anticipated to reduce residual construction impacts of Impact NOI-1 to a less-than-significant level at nearby liveaboard boats during sheet and king pile installation. MM NOI-1 will ensure that the maximum noise level of 104 dBA at 50 feet from the pile driver. Implementation of MMNOI-1 will reduce the noise level during pile driving to 59 dBA L_{eq} at the liveaboard boats (about 2,600 feet to the nearest pile driving site). The mitigated noise levels (59 dBA L_{eq}) would result in a less than 5-dB increase over exiting ambient noise level (56 dBA L_{eq}). Therefore, impacts would be less than significant.

Implementation of MM NOI-2, where feasible, will further reduce the noise impact at nearby liveaboard boats. However, due to the nature of pile-driving activities (equipment height, mobile equipment, and on the water), the mitigation measure may not effectively reduce noise. Regardless, implementation of MM NOI-2 in addition to MM NOI-1 will ensure the noise impact to be reduced to a less-than-significant level.

NEPA Impact Determination

As shown in Table 3.12-9, construction noise from dredging, crane improvements, TICTF improvements, and backland improvements would not increase existing ambient noise levels at any identified noise-sensitive receptor in the proposed project vicinity by five dBA or more; however, noise produced by pile driving during sheet and king pile installation would increase average ambient noise levels at the nearby liveaboard boat area in the East Basin (sites LT-1, ST-3, ST-4) by five dBA above existing levels. These impacts would be temporary but are considered significant under NEPA.

Mitigation Measures

Mitigation measures MM NOI-1 and MM NOI-2 would be implemented.

Residual Impacts

The above mitigation measures are anticipated to reduce residual construction impacts of Impact NOI-1 to a less-than-significant level at nearby liveaboard boats during sheet and king pile installation. MM NOI-1 will ensure that the maximum noise level of 104 dBA at 50 feet from the pile driver. Implementation of MM NOI-1 will reduce the noise level during pile driving to 59 dBA L_{eq} at the liveaboard boats (about 2,600 feet to the nearest pile driving site). The mitigated noise levels (59 dBA L_{eq}) would result in a less than 5-dB increase over exiting ambient noise level (56 dBA L_{eq}). Therefore, impacts would be less than significant with the implementation of MM NOI-1.

Implementation of MM NOI-2, where feasible, will further reduce the noise impact at nearby liveaboard boats. However, due to the nature of pile-driving activities (equipment height, mobile equipment, and on the water), the mitigation measures could attain some

noise reduction but will not be able to provide sufficient noise reduction. Regardless, implementation of MM NOI-2 in addition to MM NOI-1 will ensure the noise impact to be reduced to a less-than-significant level.

Impact NOI-2: Construction of the proposed Project would not result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9 p.m. and 7 a.m. Monday through Friday, before 8 a.m. or after 6 p.m. on Saturday, or at any time on Sunday.

Project construction activities are not expected to occur on weekends and during nighttime hours on weekdays, with the exception of dredging along Berths 214–216 and Berths 217–220. The City of Los Angeles Noise Ordinance prohibits certain construction activities between the hours of 9 p.m. and 7 a.m. from Monday through Friday, and additionally prohibits construction activities within 500 feet of a residential zone before 8 a.m. or after 6 p.m. on Saturday or any time on Sunday. Although the dredging activities would occur during the nighttime hours on weekdays, Berths 214–216 and Berths 217–220 are located more than 0.5 mile (2,600 feet) from the nearest sensitive receptors (liveaboard boats at the marinas in the East Basin); and accordingly, no dredging activities within 500 feet of a residential zone would occur between the hours of 9 p.m. and 7 a.m. Monday through Friday, before 8 a.m. or after 6 p.m. on Saturday, or at any time on Sunday. As shown in Table 3.12-9, noise level during dredging would not result in average noise levels exceeding the nighttime ambient levels at the liveaboard boats; thus, it would not exceed the significance criteria for these noise-sensitive receptors.

CEQA Impact Determination

Because noise levels (50 dBA L_{eq}) generated by dredging during nighttime hours at the nearest sensitive receptors (liveaboard boats at the marinas in the East Basin) would not exceed the nighttime ambient levels (54 dBA L_{eq}), impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Because noise levels (50 dBA L_{eq}) generated by dredging during nighttime hours at the nearest sensitive receptors (liveaboard boats at the marinas in the East Basin) would not exceed the nighttime ambient levels (54 dBA L_{eq}), impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact NOI-3: Operation of the proposed Project would not generate noise levels that would exceed existing ambient noise levels at noise-sensitive receptors by 5 dBA or greater in CNEL.

Onsite terminal and dock operational noise sources associated with the existing YTI Terminal include the intermittent sounds of operations, such as gantry cranes off-loading and loading containers; rail and truck movements; and ongoing Port-related maintenance activities. The same terminal activities would continue at the improved YTI Terminal with implementation of the proposed Project. However, because the proposed Project would increase container-handling capacities, noise generated by terminal activities is expected to increase accordingly.

CEQA Impact Determination

The proposed Project would result in increased onsite and offsite noise from operations as described below.

On-Site Noise Increase

As shown in Table 2-1, the proposed Project would result in an increase in annual and daily cargo throughput and activities compared with baseline conditions. The number of peak daily ship calls would increase by one (33%) over the CEQA baseline condition, going from 3 to 4 calls. The number of on-dock peak month daily trains would increase by 2 over the CEQA baseline condition, going from 3 to 5 trains. The number of trucks generated by the project site would increase by 45% over the CEQA baseline condition.[1] This increase in daily activities would not result in a noticeable increase in noise levels at noise-sensitive receptors (a doubling of the noise from the noise source/activity would be required for a minimally audible 3 dB increase in noise to occur).

Off-Site Noise Increase

All on-dock rail trips leave the proposed project site (on Terminal Island) from Henry Ford Bridge (also known as Badger Avenue Bridge). Although the effects of proposed project-generated on-dock rail traffic would lessen as the rail network spreads out from the Port, the potential exists for the liveaboard boats at the marinas in the Cerritos Channel to be affected by increases in proposed project-generated rail noise. The proposed project-related increase in the number of on-dock rail trips over the CEQA baseline condition would result in less than a 1 dB increase in hourly L_{eq} and CNEL at the liveaboard boats in the Cerritos Channel.

Similar to the rail trips, the majority of proposed project-related vehicle trips would access and leave the proposed project site via New Dock Street and SR-47 (Schuyler Heim Bridge). Therefore, the potential exists for the liveaboard boats at the marinas in the Cerritos Channel to be affected by increases in proposed project-generated traffic noise. A review and comparison of automobile and truck traffic data for area roadways under the CEQA baseline condition with the CEQA baseline plus the proposed Project's buildout condition indicates that proposed project-related increases in automobile or truck

[1] The annual trucks trips would increase from 901,762 under the 2012 Baseline condition to 1,308, 342 under the 2026 with-project condition. It is assumed the increase rate of daily truck trips would be similar to the annual truck increase rate.

traffic[2] over the CEQA baseline condition would result in less than a 3 dB increase in peak-hour L_{eq} and CNEL at the marinas.

Given the analysis above, the increase in terminal activities, rail traffic, and vehicular traffic from the proposed Project would not result in a noticeable increase in noise levels at noise-sensitive receptors. Therefore, the proposed Project would result in a less-than-significant noise impact under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Noise from onsite terminal activities, rail trips, and vehicle trips under future proposed project conditions would be similar to those described under the CEQA impact determination. However, the NEPA baseline noise levels would be generally higher than the CEQA baseline noise levels (2012 existing condition) because the NEPA baseline accounts for terminal operational growth and completion of improvements not requiring a USACE permit. Therefore, as described below, the noise increase between proposed project conditions and the NEPA baseline conditions would be less than the noise increase estimated under CEQA.

On-Site Noise Increase

As shown in Table 2-1, the proposed Project would result in an increase in annual and daily throughput and activities compared with baseline conditions. The number of peak daily ship calls would not increase under the NEPA baseline condition, 4 calls for both NEPA baseline and with-project conditions. The number of on-dock peak month daily trains would increase by 1 over NEPA baseline condition, going from 4 to 5 trains in 2026. The number of trucks generated by the project site would increase by 10% over the NEPA baseline condition.[3] This increase in daily activities would not result in a noticeable increase in noise levels at noise-sensitive receptors (a doubling of the noise from the noise source/activity would be required for a minimally audible 3-dB increase in noise to occur).

Off-Site Noise Increase

All on-dock rail trips leave the proposed project site (on Terminal Island) from Henry Ford Bridge (also known as Badger Avenue Bridge). Although the effects of proposed project-generated on-dock rail traffic would lessen as the rail network spreads out from

[2] Given the projected AM peak-hour traffic volumes at Schuyler Heim Bridge (SR-47), the proposed Project would increase the traffic volume from 1,198 passenger cars per hour under the CEQA baseline condition to 1,727 passenger cars per hour under the CEQA baseline plus the proposed Project's buildout condition, resulting in an increase of 529 passenger cars per hour, or 50% over the CEQA baseline condition (see Table 3.7-21 in Section 3.7, Ground Transportation). The number of passenger cars accounts for the truck trips generated by the proposed Project in that one heavy truck is equal to two passenger cars.

[3] The annual trucks trips would increase from 1,184,069 under the 2026 NEPA Baseline condition to 1,308, 342 under the 2026 with-project condition. It is assumed the increase rate of daily truck trips would be similar to the annual truck increase rate.

the Port, the potential exists for the liveaboard boats at the marinas in the Cerritos Channel to be affected by increases in proposed project-generated rail noise. The proposed project-related increase in the number of on-dock rail trips over the NEPA baseline condition would result in less than a 1-dB increase in hourly L_{eq} and CNEL at the liveaboard boats in the Cerritos Channel.

Similar to the rail trips, the majority of proposed project-related vehicle trips would access and leave the proposed project site via New Dock Street and SR-47 (Schuyler Heim Bridge). Therefore, the potential exists for the liveaboard boats at the marinas in the Cerritos Channel to be affected by increases in proposed project-generated traffic noise. A review and comparison of automobile and truck traffic data for area roadways under the NEPA baseline condition with the NEPA baseline plus the proposed Project's buildout condition indicates that proposed project-related increases in automobile or truck traffic[4] over the NEPA baseline condition would result in less than a 1-dB increase in peak-hour L_{eq} and CNEL at the marinas.

Therefore, the increased onsite terminal activities, rail trips, and vehicle trips would increase noise levels at the adjacent noise-sensitive receptors by less than three dB, resulting in a less-than-significant impact. Consequently, the proposed Project would result in a less-than-significant impact at adjacent noise-sensitive receptors under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact NOI-4: Construction or operation of proposed Project would not expose persons to or generate excessive groundborne vibration or groundborne noise levels.

Groundborne vibration occurs as vibration energy created by the vibration source (i.e., construction equipment, trains) is transmitted into the ground, which creates vibration waves that propagate through the various soil and rock strata to the foundation of nearby buildings. Because the project site is on Terminal Island with the water channels separating the site from noise-sensitive receptors in the project vicinity, groundborne vibration and noise generated by onsite construction and operation activities would attenuate quickly when passing the water body (i.e., the channels). Therefore, groundborne vibration and noise received at the sensitive receptors are expected to be well below the threshold of perception for humans.

During the construction, operation of heavy construction equipment can generate localized groundborne vibration at buildings adjacent to the construction site, especially during the operation of high-impact equipment, such as pile drivers. Vibration from large construction equipment (e.g., large dozers, load trucks) is typically below the threshold of

[4] Given the projected AM peak-hour traffic volumes at Schuyler Heim Bridge (SR-47), the proposed Project would increase the traffic volume from 6,116 passenger cars per hour under the NEPA baseline condition to 6,200 passenger cars per hour under the NEPA baseline plus the proposed Project's buildout condition in 2026, resulting in an increase of 84 vehicles per hour, or 1.5% over the NEPA baseline condition (see Table 3.7-23 in Section 3.7, Ground Transportation).

perception when the activity is more than about 150 feet from the sensitive receptors. Vibration from small construction equipment (e.g., small dozers and truck traffic) is typically below the threshold of perception when the activity is more than about 50 feet from the sensitive receptors[5] (Federal Transit Administration 2006). Although the project construction would involve pile driving activities and could generate high groundborne vibration velocity level at the area near the construction site, the pile driving activities would not result in groundborne vibration impacts at the sensitive receptors because the nearest sensitive receptors (liveaboard boats) are about 2,600 feet from the nearest pile driving site. At this distance, the groundborne vibration levels[6] received at the sensitive receptors are expected to be below the threshold of perception.

Operation of the proposed Project would also increase truck and rail volumes along the area roadway and rail systems, which could increase the groundborne vibration and noise at the noise-sensitive receptors along the roadways and rail tracks. As discussed in Section 3.12.1.2, it is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. Because the proposed project truck traffic would travel on existing public roadways, increased groundborne vibration and noise associated with proposed project truck traffic would not expected to be perceptible at noise-sensitive receptors along the roadways.

As discussed under Impact NOI-3, the proposed Project would only result in a slight increase in daily train trips over existing conditions and would not result in the construction of new trail track in the vicinity of noise-sensitive receptors. Therefore, groundborne vibration and noise generated when a train passes would not increase under the proposed project condition.

CEQA Impact Determination

Given the analysis above, groundborne vibration or noise generated by the onsite construction and operation activities is not expected to be perceptible at noise-sensitive receptors across the channels from the proposed project site. Increased groundborne vibration and noise associated with proposed project truck traffic would not be perceptible at noise-sensitive receptors along the roadways, and groundborne vibration and noise generated by Project trains would be similar to the baseline condition. Therefore, the groundborne vibration and noise impacts would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

[5] The vibration velocity level of perception for humans is approximately 65 VdB, the velocity level in decibel units. Large dozers and loaded trucks typically generate groundborne vibration velocity levels around 64 VdB at 150 feet from the source and large delivery trucks typically generate groundborne vibration velocity levels around 63 VdB at 50 feet from the source. (Federal Transit Administration 2006.)

[6] Impact pile drivers typically generate groundborne vibration velocity levels around 95 VdB at 50 feet and 61 Vdb at 150 feet. At the distance of 2,600 feet, the vibration velocity level is about 43 VdB. (Federal Transit Administration 2006)

NEPA Impact Determination

Given the analysis above, groundborne vibration or noise generated by the onsite construction and operation activities is not expected to be perceptible at noise-sensitive receptors across the channels from the proposed project site. Increased groundborne vibration and noise associated with proposed project truck traffic would not be perceptible at noise-sensitive receptors along the roadways, and groundborne vibration and noise generated by proposed project train trips would be similar to the baseline condition. Therefore, the groundborne vibration and noise impacts would be less than significant under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Alternative 1 – No Project

Under Alternative 1, no further LAHD or federal action would occur. LAHD would not implement any terminal improvements. No new cranes would be added, no dredging or backland improvements would occur, and no 100-foot gauge crane rail installation or repairs to the TICTF on-dock rail would occur.

Under the No Project Alternative, the existing YTI Terminal would continue to operate as an approximate 185-acre container terminal. Given the throughput projections, terminal operations are expected to grow over time as throughput demands increase. Under Alternative 1, the number of annual ship calls would increase from 162 to 206 by 2015. Although Alternative 1 would have the same number of vessel calls between 2015 and 2026 as the proposed Project, the size of the vessels would be smaller.

The No Project Alternative would not preclude future improvements to the proposed project site. However, any future changes in use or new improvements with the potential to affect the environment significantly would need to be analyzed in a separate environmental document.

Impact NOI-1: Alternative 1 would not result in 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 noise-sensitive receptors.

There would be no construction activities for this alternative.

CEQA Impact Determination

Alternative 1 would not involve any construction activities; therefore, there would be no potential for impacts under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

There would be no impacts.

NEPA Impact Determination

Analysis of the No Project Alternative is required by CEQA. Therefore, the analysis of this alternative is not required under NEPA. NEPA requires the analysis of a No Federal Action Alternative (Alternative 2 in this document).

Mitigation Measures

Mitigation measures are not applicable.

Residual Impacts

An impact determination is not applicable.

Impact NOI-2: Alternative 1 would not result in noise levels from construction activities that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9 p.m. and 7 a.m. Monday through Friday, before 8 a.m. or after 6 p.m. on Saturday, or at any time on Sunday.

There would be no construction activities for this alternative.

CEQA Impact Determination

Alternative 1 would not involve any construction activities; therefore, no nighttime construction-related impacts would occur. There would be no potential for impacts under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

There would be no impacts.

NEPA Impact Determination

Analysis of the No Project Alternative is required by CEQA. Therefore, the analysis of this alternative is not required under NEPA. NEPA requires the analysis of a No Federal Action Alternative (Alternative 2 in this document).

Mitigation Measures

Mitigation measures are not applicable.

Residual Impacts

An impact determination is not applicable.

Impact NOI-3: Operation of Alternative 1 would not generate noise levels that would exceed existing ambient noise levels at noise-sensitive receptors by 5 dBA or greater in CNEL.

Under Alternative 1, the site would continue to operate as a container terminal. Onsite terminal and dock operational noise sources associated with this alternative would include the intermittent sounds of operations, such as gantry cranes off-loading and loading containers; rail and truck movements; and other ongoing Port activities. Terminal activities, container shipments to and from the Port via area rail and roadway corridors, and workforce automobile traffic on area roadways would increase in time up to the existing capacity of the terminal.

CEQA Impact Determination

As shown in Table 2-6, Alternative 1 would result in an increase in annual and daily cargo throughput and activities compared with the CEQA Baseline condition. The number of peak daily ship calls would increase by one (33%) over the CEQA baseline condition, going from 3 to 4 calls. The number of on-dock peak month daily trains would increase by 1 over the CEQA baseline condition, going from 3 to 4 trains. The number of trucks generated by the project site would increase by 31% over the CEQA baseline condition.[7] However, these increases would be less than they would be under proposed project conditions and result in CNEL increases of less than three dBA at noise-sensitive receptors in the Port area. Given the analysis above, noise impacts at adjacent noise-sensitive receptors due to terminal operations under Alternative 1 would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Analysis of the No Project Alternative is required by CEQA. Therefore, the analysis of this alternative is not required under NEPA. NEPA requires the analysis of a No Federal Action Alternative (Alternative 2 in this document).

Mitigation Measures

Mitigation measures are not applicable.

Residual Impacts

An impact determination is not applicable.

[7] The annual trucks trips would increase from 901,762 under the 2012 Baseline condition to 1,184, 069 under the 2026 No Project condition. It is assumed the increase rate of daily truck trips would be similar to the annual truck increase rate.

Impact NOI-4: Construction or operation of Alternative 1 would not expose persons to or generate excessive groundborne vibration or groundborne noise levels.

Groundborne vibration occurs as vibration energy created by the vibration source (i.e., construction equipment, trains) transmitted into the ground, which creates vibration waves that propagate through the various soil and rock strata to the foundation of nearby buildings. Because the project site is on Terminal Island with the water channels separating the site from noise-sensitive receptors in the project vicinity, groundborne vibration and noise generated by onsite operation activities would attenuate quickly when passing the water body (i.e., the channels). Therefore, groundborne vibration and noise received at the sensitive receptors are expected to be well below the threshold of perception for humans. No construction activities would occur under this alternative; therefore, no groundborne vibration from construction would occur.

Alternative 1 would increase truck and rail volumes compared to existing conditions along the area roadway and rail systems, which could increase the groundborne vibration and noise at the noise-sensitive receptors along the roadways and rail tracks. As discussed in Section 3.12.1.2, it is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. Because the truck traffic generated by Alternative 1 would travel on existing public roadways, increased groundborne vibration and noise associated with Alternative 1 truck traffic would not expected to be perceptible at noise-sensitive receptors along the roadways.

As discussed under Impact NOI-3, the Alternative 1 would only result in a slight increase in daily train trips and would not result in the construction of new trail track in the vicinity of noise-sensitive receptors. Therefore, groundborne vibration and noise generated when a train passes by would not increase under Alternative 1.

CEQA Impact Determination

Given the analysis above, groundborne vibration or noise generated by the onsite operational activities is not expected to be perceptible at noise-sensitive receptors across the channels from the Alternative 1 site. Increased groundborne vibration and noise associated with Alternative 1 truck traffic would not be perceptible at noise-sensitive receptors along the roadways, and groundborne vibration and noise generated by Alternative 1 train trips would be similar to the baseline condition. Therefore, the groundborne vibration and noise impacts would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Analysis of the No Project Alternative is required by CEQA. Therefore, the analysis of this alternative is not required under NEPA. NEPA requires the analysis of a No Federal Action Alternative (Alternative 2 in this document).

Mitigation Measures

Mitigation measures are not applicable.

Residual Impacts

An impact determination is not applicable.

Alternative 2 – No Federal Action

The No Federal Action Alternative would have the same impacts as the NEPA baseline and would include only activities and impacts likely to occur absent a USACE permit. The alternative could include improvements that require a local action. Absent a USACE permit, no dredging, dredged material disposal, in-water pile installation, or crane installation/extension would occur. Expansion of the TICTF and extension of the crane rail also would not occur. The No Federal Action Alternative includes only backlands improvements consisting of slurry sealing, deep cold planing, asphalt concrete overlay, restriping, and removal, relocation, or modification of any underground conduits and pipes necessary to complete repairs. These activities would not change the capacity of the existing terminal.

The site would continue to operate as an approximate 185-acre container terminal where cargo containers are loaded to/from vessels, temporarily stored on backlands, and transferred to/from trucks or on-dock railcars. Based on the throughput projections under this alternative, the YTI Terminal is expected to operate at its existing capacity of approximately 1,692,000 TEUs by 2026.

Impact NOI-1: Construction of Alternative 2 would not result in 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 noise-sensitive receptors.

Alternative 2 would involve terminal improvements in the upland area but would not include the TICTF expansion, extension of the crane rail, dredging or disposal, installation of sheet and king piles, or crane installation/extension. With this alternative, the noise levels for backland improvements shown in Table 3.12-9 would occur.

CEQA Impact Determination

As shown in Table 3.12-9, construction noise from backland improvements would not increase existing ambient noise levels at any identified noise-sensitive receptor in the proposed project area by five dBA or more; therefore, impacts due to construction would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Alternative 2 would include only backlands improvements consisting of slurry sealing; deep cold planing; asphalt concrete overlay; restriping; and removal, relocation, or modification of any underground conduits and pipes necessary to complete repairs. No construction of in-water or over-water features would occur under Alternative 2. The No Federal Action Alternative would involve the same construction activities as would occur under the NEPA baseline. Therefore, there would be no incremental difference between Alternative 2 and the NEPA baseline. As a consequence, Alternative 2 would result in no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

There would be no impacts.

Impact NOI-2: Construction of Alternative 2 would not result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9 p.m. and 7 a.m. Monday through Friday, before 8 a.m. or after 6 p.m. on Saturday, or at any time on Sunday.

Construction activities for this alternative would not be conducted on weekends or during nighttime hours on weekdays.

CEQA Impact Determination

No nighttime or weekend construction would occur; therefore, there would be no impacts under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

There would be no impacts.

NEPA Impact Determination

Alternative 2 would include only backlands improvements consisting of slurry sealing; deep cold planing; asphalt concrete overlay; restriping; and removal, relocation, or modification of any underground conduits and pipes necessary to complete repairs. No construction of in-water or over-water features would occur under Alternative 2. The No Federal Action Alternative would involve the same construction activities as would occur under the NEPA baseline. Therefore, there would be no incremental difference between Alternative 2 and the NEPA baseline. As a consequence, Alternative 2 would result in no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

There would be no impacts.

Impact NOI-3: Operation of Alternative 2 would not generate noise levels that would exceed existing ambient noise levels at noise-sensitive receptors by 5 dBA or greater in CNEL.

Under Alternative 2, the site would continue to operate as container terminal. Onsite terminal and dock operational noise sources associated with this alternative would include the intermittent sounds of operations, such as gantry cranes off-loading and loading containers; rail and truck movements; and other ongoing Port activities. Terminal activities, container shipments to and from the Port via area rail and roadway corridors, and workforce automobile traffic on area roadways would increase relative to the CEQA baseline conditions up to the terminal's existing throughout capacity in 2026. However, these increases would be less than they would be under proposed project conditions and result in CNEL increases of less than three dBA at noise-sensitive receptors in the Port area.

CEQA Impact Determination

Given the analysis above, noise impacts at adjacent noise-sensitive receptors due to terminal operations under Alternative 2 would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Alternative 2 would include only backlands improvements consisting of slurry sealing; deep cold planing; asphalt concrete overlay; restriping; and removal, relocation, or modification of any underground conduits and pipes necessary to complete repairs. No construction of in-water or over-water features would occur under Alternative 2. The No Federal Action Alternative would involve the same construction activities as would occur under the NEPA baseline. Therefore, there would be no incremental difference between Alternative 2 and the NEPA baseline. As a consequence, Alternative 2 would result in no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

There would be no impacts.

Impact NOI-4: Construction or operation of Alternative 2 would not expose persons to or generate excessive groundborne vibration or groundborne noise levels.

Construction activities under this alternative involve primarily backland improvements, which would involve grading, cold planning, and slurry sealing. This alternative would not involve pile driving or other high impact activities that would generate high levels of groundborne vibration.

Alternative 2 would increase truck and rail volumes along the area roadway and rail systems, which could increase the groundborne vibration and noise at the noise-sensitive receptors along the roadways and rail tracks. As discussed in Section 3.12.1.2, it is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. Because the truck traffic generated by Alternative 2 would travel on existing public roadways, increased groundborne vibration and noise associated with Alternative 2 truck traffic would not expected to be perceptible at noise-sensitive receptors along the roadways.

As discussed under Impact NOI-3, Alternative 2 would only result in a slight increase in daily train trips and would not result in the construction of new trail track in the vicinity of noise-sensitive receptors. Therefore, groundborne vibration and noise generated when a train passes by would not increase under Alternative 2.

CEQA Impact Determination

Given the analysis above, groundborne vibration or noise generated by the onsite construction and operation activities is not expected to be perceptible at noise-sensitive receptors across the channels from the site. Increased groundborne vibration and noise associated with Alternative 2 truck traffic would not be perceptible at noise-sensitive receptors along the roadways, and groundborne vibration and noise generated by Alternative 2 train trips would be similar to the baseline condition. Therefore, the groundborne vibration and noise impacts would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Alternative 2 would include only backlands improvements consisting of slurry sealing; deep cold planing; asphalt concrete overlay; restriping; and removal, relocation, or modification of any underground conduits and pipes necessary to complete repairs. No construction of in-water or over-water features would occur under Alternative 2. The No Federal Action Alternative would involve the same construction activities as would occur under the NEPA baseline. Therefore, there would be no incremental difference between Alternative 2 and the NEPA baseline. As a consequence, Alternative 2 would result in no impact under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

There would be no impacts.

Alternative 3 – Reduced Project: Improve Berths 217–220 Only

This alternative includes all components of the proposed Project except dredging and pile driving at Berths 214–216. The following components of the proposed Project are unchanged under the Reduced Project Alternative:

- modifying up to six existing cranes;
- replacing up to four existing non-operating cranes;
- dredging 6,000 cy from a depth of -45 to -47 feet MLLW (with an additional 2 feet of overdredge depth, for a total depth of -49 feet MLLW), and installing 1,200 linear feet of sheet piles and king piles to support and stabilize the existing wharf structure at Berths 217–220;
- disposing of dredged material at LA-2, the Berths 243–245 CDF, or another approved upland location;
- extending the existing 100-foot gauge landside crane rail through Berths 217–220;
- performing ground repairs and maintenance activities in the backlands area; and
- expanding the TICTF on-dock rail by adding a single rail loading track.

Under this alternative, there would be three operating berths after construction, similar to the proposed Project, but Berths 214–216 would remain at their existing depth. This alternative would require less dredging (by approximately 21,000 cy) and pile driving and a shorter construction period than the proposed Project. Based on the throughput projections, this alternative is expected to operate at its capacity of approximately 1,913,000 TEUs by 2026, similar to the proposed Project. However, while the terminal could handle similar levels of cargo, the reduced project alternative would not achieve the same level of efficient operations as achieved by the proposed Project. This alternative would not accommodate the largest vessels (13,000 TEUs). The depth achieved at Berths 217–220 would only be capable of handling vessels up to 11,000 TEUs, requiring additional vessels to call on the terminal to meet future growth projections up to the capacity of the terminal. Therefore, under this alternative, 232 vessels would call on the terminal in 2020 and 2026, compared to 206 vessels for the proposed Project. Additionally, because of the higher number of annual vessel calls, this alternative would result in a maximum of five peak day ship calls (over a 24-hour period) compared to four for the proposed Project.

Impact NOI-1: Construction of Alternative 3 would not result in 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 noise-sensitive receptors.

Under Alternative 3, construction activities at Berths 217–220 (pile driving, dredging, and crane improvements), TICTF on-dock rail facility expansion, and backland improvements would be the same as described under proposed Project. There would be no dredging, pile driving, or crane improvements at Berths 214–216. Berths 217–220 are farther from the nearest liveaboard boats in the East Basin than Berths 214–216; therefore, construction noise levels at the nearest liveaboard boats under this alternative are expected to be lower than the noise levels under the proposed Project. Table 3.12-10 summarizes the anticipated construction noise exposure at noise-sensitive locations.

Table 3.12-10: Estimated Construction Noise Levels at Nearest Noise-Sensitive Areas – Alternative 3

Noise Sensitive Area (Measurement Site)	Existing Daytime Leq (dBA)	Existing Nighttime Leq (dBA)	Construction Noise Leq at Receptor (dBA)				
			Pilinga	Dredging	Crane Improve-ments	TICTF Expansion	Backland Improve-ments
Liveaboard Boats (LT-1, ST-3, ST-4)	56	54	57	45	44	42	51
Residences (LT-2, ST-1)	61	56	51	39	38	38	39
Park (ST-2)	62	—	47	35	34	36	36

Note:

a. Noise levels are calculated from the closest pile driving to each receptor. For liveaboard boats, the closest pile driving would be at Berth 217. For the residences and park, the closest pile driving would be at Berth 220.

CEQA Impact Determination

As shown in Table 3.12-10, construction noise from dredging, crane improvements, TICTF improvements, and backland improvements would not increase the existing ambient noise levels at any identified noise-sensitive receptor in the proposed project vicinity by 5 dBA or more. Noise produced by pile driving during sheet and king pile installation would be 1 dB above the ambient noise level at the nearby liveaboard boat area (sites LT-1, ST-3, ST-4) and result in a combined noise level of 60 dBA (a 4 dB increase over the existing ambient noise level). Therefore, construction noise from pile driving would not increase existing ambient noise levels at any identified noise-sensitive receptor in the proposed project vicinity by 5 dBA or more. Impacts due to construction would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

As shown in Table 3.12-10, construction noise would not increase the existing ambient noise levels at any identified noise-sensitive receptor in the proposed project area by 5 dBA or more. Therefore, no significant impacts due to construction would occur under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact NOI-2: Construction of Alternative 3 would not result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9 p.m. and 7 a.m. Monday through Friday, before 8 a.m. or after 6 p.m. on Saturday, or at any time on Sunday.

Project construction activities are not expected to occur on weekends and during nighttime hours on weekdays, with the exception of dredging along Berths 217–220. The City of Los Angeles Noise Ordinance prohibits certain construction activities between the hours of 9 p.m. and 7 a.m. from Monday through Friday, and additionally prohibits construction activities within 500 feet of a residential zone before 8 a.m. or after 6 p.m. on Saturday or any time on Sunday. Although the dredging activities would occur during the nighttime hours on weekdays, Berths 217–220 are located more than 0.5 mile (3,500 feet) from the nearest noise-sensitive receptor (the liveaboard boats at the marinas in the East Basin). Accordingly, no dredging activities within 500 feet of a residential zone would occur between the hours of 9 p.m. and 7 a.m. Monday through Friday, before 8 a.m. or after 6 p.m. on Saturday, or at any time on Sunday. As shown in Table 3.12-10, noise levels during dredging would not result in average noise levels that would exceed the nighttime ambient levels at the liveaboard boats; therefore, it would not exceed the significance criteria for these noise-sensitive receptors.

CEQA Impact Determination

Because noise levels (45 dBA L_{eq}) generated by dredging during nighttime hours at the nearest sensitive receptors (liveaboard boats at the marinas in the East Basin) would not exceeding the nighttime ambient levels (54 dBA L_{eq}), impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Given the analysis above, construction noise impacts under the proposed Project would be less than significant under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact NOI-3: Operation of Alternative 3 would not generate noise levels that would exceed existing ambient noise levels at noise-sensitive receptors by 5 dBA or greater in CNEL.

As shown in Table 2-6, although Alternative 3 would increase the number of peak daily ship calls by one (67%) over the CEQA baseline condition, going from 3 to 5 calls and resulting in a slightly higher number of peak-day ship calls than the proposed Project, projected annual throughput under this alternative would be the same as it would be under the proposed Project. The daily vehicle and train trips associated with the alternative are expected to be similar to those trips projected under the proposed Project, as indicated in Section 3.7, Ground Transportation. Therefore, impacts associated with increased terminal operations, container shipments to and from the Port via area rail and roadway corridors, and truck and other vehicle traffic on area roadways are expected to be similar to those of the proposed Project. Similar to the proposed Project, Alternative 3 operations would result in CNEL increases of less than 3 dBA at noise-sensitive receptors in the Port area.

CEQA Impact Determination

Because Alternative 3 would result in a less than three-dBA increase in noise experienced by sensitive receptors as described above, noise impact at adjacent noise-sensitive receptors due to terminal operations would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Noise from terminal operations, rail and truck trips under Alternative 3 would be the same as described under the NEPA impact determination above for the proposed Project. Although Alternative 3 would increase the number of peak daily ship calls by one (67%) over the CEQA baseline condition, going from 3 to 5 calls and resulting in a slightly higher number of peak-day ship calls than the proposed Project, projected annual throughput under this alternative would be the same as it would be under the proposed Project. The daily vehicle and train trips associated with the alternative are expected to be similar to those trips projected under the proposed Project, as indicated in Section 3.7, Ground Transportation. Therefore, similar to the NEPA impact determination above for

the proposed Project, increased onsite terminal operations, rail and truck trips would increase noise levels at adjacent noise-sensitive receptors by less than three dB, resulting in a less than significant impacts under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact NOI-4: Construction or operation of Alternative 3 would not expose persons to or generate excessive groundborne vibration or groundborne noise levels.

During the construction of Alternative 3, operation of heavy construction equipment can generate localized groundborne vibration at buildings adjacent to the construction site, especially during the operation of high-impact equipment, such as pile drivers. Vibration from large construction equipment (i.e., large dozers, load trucks) is typically below the threshold of perception when the activity is more than about 150 feet from the sensitive receptors. Vibration from small construction equipment (i.e., small dozers and truck traffic) is typically below the threshold of perception when the activity is more than about 50 feet from the sensitive receptors[8] (Federal Transit Administration 2006). Although the project construction would involve pile driving activities and could potentially generate high groundborne vibration velocity level at the area near the construction site, the pile driving activities would not result in groundborne vibration impacts at the sensitive receptors because the nearest sensitive receptors (liveaboard boats) are about 3,500 feet to the nearest pile driving site. At this distance, the groundborne vibration levels[9] received at the sensitive receptors are expected to be below the threshold of perception.

Alternative 3 would increase truck and rail volumes along the area roadway and rail systems, which could increase the groundborne vibration and noise at the noise-sensitive receptors along the roadways and rail tracks. As discussed in Section 3.12.1.2, it is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. Because the truck traffic generated by Alternative 3 would travel on existing public roadways, increased groundborne vibration and noise associated with Alternative 3 truck traffic would not expected to be perceptible at noise-sensitive receptors along the roadways.

As discussed under Impact NOI-3, the Alternative 3 would only result in a slight increase in daily train trips and would not result in the construction of new trail track in the vicinity of noise-sensitive receptors. Therefore, groundborne vibration and noise

[8] The vibration velocity level of perception for humans is approximately 65 VdB, the velocity level in decibel units. Large dozers and loaded trucks typically generate groundborne vibration velocity levels around 64 VdB at 150 feet from the source, and large delivery trucks typically generate groundborne vibration velocity levels around 63 VdB at 50 feet from the source. (Federal Transit Administration 2006.)

[9] Impact pile drivers typically generate groundborne vibration velocity levels around 95 VdB at 50 feet and 61 Vdb at 150 feet. At the distance of 3,500 feet, the vibration velocity level is about 40 VdB. (Federal Transit Administration 2006.)

generated when a train passes by under the baseline condition would be the same as groundborne vibration and noise under the Alternative 3 condition.

CEQA Impact Determination

Given the analysis above, groundborne vibration or noise generated by the onsite construction and operation activities are not expected to be perceptible at noise-sensitive receptors across the channels from the Project site; increased groundborne vibration and noise associated with Alternative 3 truck traffic would not be perceptible at noise-sensitive receptors along the roadways; and groundborne vibration and noise generated by Alternative 3 train trips would be similar to the baseline condition; Therefore, the groundborne vibration and noise impacts would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Given the analysis above, groundborne vibration or noise generated by the onsite construction and operation activities are not expected to be perceptible at noise-sensitive receptors across the channels from the Project site; increased groundborne vibration and noise associated with Alternative 3 truck traffic would not be perceptible at noise-sensitive receptors along the roadways; and groundborne vibration and noise generated by Alternative 3 train trips would be similar to the baseline condition; Therefore, the groundborne vibration and noise impacts would be less than significant under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

3.12.4.4 Summary of Impact Determinations

Table 3.12-11 summarizes the CEQA and NEPA impact determinations of the proposed Project and its alternatives related to noise. This table is meant to allow easy comparison among 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 and NEPA 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 3.12-11: Summary Matrix of Potential Impacts and Mitigation Measures for Noise Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Mitigation Measures	Impacts after Mitigation
Proposed Project	**Impact NOI-1:** Construction of the proposed Project would result in 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 noise-sensitive receptors.	CEQA: Significant NEPA: Significant	**MM NOI-1:** Noise Reduction during Pile Driving **MM NOI-2:** Erect Temporary Noise Attenuation Barriers Adjacent to Pile-Driving Equipment or Employee Temporary Shields to the Pile-Driving Equipment, Where Necessary and Feasible	CEQA: Less than significant NEPA: Less than significant
	Impact NOI-2: Construction of the proposed Project would not result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9 p.m. and 7 a.m. Monday through Friday, before 8 a.m. or after 6 p.m. on Saturday, or at any time on Sunday.	CEQA: Less than significant NEPA: Less than significant	No mitigation is required.	CEQA: Less than significant NEPA: Less than significant
	Impact NOI-3: Operation of the proposed Project would not generate noise levels that would exceed existing ambient noise levels at noise-sensitive receptors by 5 dBA or greater in CNEL.	CEQA: Less than significant NEPA: Less than significant	No mitigation is required.	CEQA: Less than significant NEPA: Less than significant
	Impact NOI-4: Construction or operation of proposed Project would not expose persons to or generate excessive groundborne vibration or groundborne noise levels.	CEQA: Less than significant NEPA: Less than significant	No mitigation is required.	CEQA: Less than significant NEPA: Less than significant

Table 3.12-11: Summary Matrix of Potential Impacts and Mitigation Measures for Noise Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Mitigation Measures	Impacts after Mitigation
Alternative 1– No Project	**Impact NOI-1:** Alternative 1 would not result in 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 noise-sensitive receptors.	CEQA: No impact NEPA: Not applicable	No mitigation is required. Mitigation not applicable	CEQA: No impact NEPA: Not applicable
	Impact NOI-2: Alternative 1 would not result in noise levels from construction activities that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9 p.m. and 7 a.m. Monday through Friday, before 8 a.m. or after 6 p.m. on Saturday, or at any time on Sunday.	CEQA: No impact NEPA: Not applicable	No mitigation is required. Mitigation not applicable	CEQA: No impact NEPA: Not applicable
	Impact NOI-3: Operation of Alternative 1 would not generate noise levels that would exceed existing ambient noise levels at noise-sensitive receptors by 5 dBA or greater in CNEL.	CEQA: Less than significant NEPA: Not applicable	No mitigation is required. Mitigation not applicable	CEQA: Less than significant NEPA: Not applicable
	Impact NOI-4: Construction or operation of Alternative 1 would not expose persons to or generate excessive groundborne vibration or groundborne noise levels.	CEQA: Less than significant NEPA: Less than significant	No mitigation is required. Mitigation not applicable	CEQA: Less than significant NEPA: Less than significant
Alternative 2 – No Federal Action	**Impact NOI-1:** Construction of Alternative 2 would not result in 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 noise-sensitive receptors.	CEQA: Less than significant NEPA: No impact	No mitigation is required.	CEQA: Less than significant NEPA: No impact
	Impact NOI-2: Construction of Alternative 2 would not result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9 p.m. and 7 Monday through Friday, before 8 a.m. or after 6 p.m. on Saturday, or at any time on Sunday.	CEQA: No impact NEPA: No impact	No mitigation is required.	CEQA: No impact NEPA: No impact

Table 3.12-11: Summary Matrix of Potential Impacts and Mitigation Measures for Noise Associated with the Proposed Project and Alternatives

Alternative	Environmental Impacts	Impact Determination	Mitigation Measures	Impacts after Mitigation
	Impact NOI-3: Operation of Alternative 2 would not generate noise levels that would exceed existing ambient noise levels at noise-sensitive receptors by 5 dBA or greater in CNEL.	CEQA: Less than significant NEPA: No impact	No mitigation is required.	CEQA: Less than significant NEPA: No impact
	Impact NOI-4: Construction or operation of Alternative 2 would not expose persons to or generate excessive groundborne vibration or groundborne noise levels.	CEQA: Less than significant NEPA: Less than significant	No mitigation is required.	CEQA: Less than significant NEPA: Less than significant
Alternative 3 – Reduced Project: Improve Berths 217–220 Only	**Impact NOI-1:** Construction of Alternative 3 would not result in 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 noise-sensitive receptors.	CEQA: Less than significant NEPA: Less than significant	No mitigation is required.	CEQA: Less than significant NEPA: Less than significant
	Impact NOI-2: Construction of Alternative 3 would not result in noise levels that would exceed the ambient noise level by 5 dBA at noise-sensitive receptors between the hours of 9 p.m. and 7 a.m. Monday through Friday, before 8 a.m. or after 6 p.m. on Saturday, or at any time on Sunday.	CEQA: Less than significant NEPA: Less than significant	No mitigation is required.	CEQA: Less than significant NEPA: Less than significant
	Impact NOI-3: Operation of Alternative 3 would not generate noise levels that would exceed existing ambient noise levels at noise-sensitive receptors by 5 dBA or greater in CNEL.	CEQA: Less than significant NEPA: Less than significant	No mitigation is required.	CEQA: Less than significant NEPA: Less than significant
	Impact NOI-4: Construction or operation of Alternative 3 would not expose persons to or generate excessive groundborne vibration or groundborne noise levels.	CEQA: Less than significant NEPA: Less than significant	No mitigation is required.	CEQA: Less than significant NEPA: Less than significant

3.12.4.5 Mitigation Monitoring

The mitigation monitoring program below is applicable to the proposed Project under CEQA and NEPA.

Impact NOI-1: Construction of the proposed Project would result in 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 noise-sensitive receptors.	
Mitigation Measure	**MM NOI-1: Noise Reduction during Pile Driving.** The contractor will be required to use a pile-driving system such as a Bruce hammer (with silencing kit); an IHC Hydrohammer, SC series (with a sound insulation system); or an equivalent silenced hammer that is capable of limiting maximum noise levels at 50 feet from the pile driver to 104 dBA, or less, during installation of king piles and sheet piles.
Timing	During the bid process (i.e., as part of contract/construction specifications) and construction of the proposed Project.
Methodology	The construction contractor will ensure that the proposed pile-driving equipment and measures are used during construction. LAHD will evaluate the contractor proposals with regard to reducing pile-driving noise. LAHD will subsequently perform periodic inspections to ensure that the approved equipment and methods are being used.
Responsible Parties	Construction contractor; LAHD
Residual Impacts	Less than significant
Mitigation Measure	**MM NOI-2: Erect Temporary Noise Attenuation Barriers Adjacent to Pile-Driving Equipment or Employ Temporary Shields to the Pile-Driving Equipment, Where Necessary and Feasible.** The need for and feasibility of noise attenuation barriers/curtain or pile driver shielding will be evaluated on a case-by-case basis by considering the distance to noise-sensitive receptors, the available space at the construction location, safety, and proposed project operations. The noise barriers/curtains will be installed directly around the pile-driving equipment to shield the line of sight from the nearest noise-sensitive receptor, where feasible. Because the equipment would be mostly on the water and pile drivers are high above the water surface, noise barriers may not be feasible or effective to provide sufficient noise reduction, depending on the construction site and pile-driving activity and equipment specified for each site. Another alternative is to employ shields that are physically attached to the pile drivers. The pile driver shielding is more effective where considerable noise reduction is required.
Timing	During the bid process (i.e., as part of contract/construction specifications) and construction of the proposed Project.
Methodology	The contractor will install noise attenuation barriers or pile driver shielding, where feasible, according to the above criteria in consultation with LAHD and be monitored for compliance by LAHD.
Responsible Parties	Construction contractor; LAHD
Residual Impacts	Less than significant

3.12.5 Significant Unavoidable Impacts

Mitigation measures are expected to reduce residual construction noise impacts due to pile driving to a less-than-significant level. Construction noise would be short term and would not exceed significance thresholds with mitigation; after completion, there would be no long-term significant residual noise impact.