3.8 Noise

3.8.1 Section Summary

This section describes the affected noise and vibration environment, regulatory setting, and potential impacts on noise and vibration associated with the construction and operation of the proposed West Harbor Modification Project (Proposed Project).

Section 3.8, *Noise*, includes the following:

- A description of existing noise and vibration in the Port of Los Angeles (Port) area;
- A description of regulations and policies regarding noise and vibration that are applicable to the Proposed Project;
- A discussion of the methodology used to determine whether the Proposed Project would result in a new or substantially more severe significant impact on noise or vibration;
- An impact analysis for the Proposed Project; and
- A description of mitigation measures (MM-) proposed to reduce potential impacts, as applicable.

Key points of Section 3.8, *Noise*, include the following:

- Noise from the construction of the Proposed Project would create significant noise impacts. However, these impacts are consistent with those previously identified in the *2009 San Pedro Waterfront Project* (SPW) *Environmental Impact Statement* (EIS)/*Environmental Impact Report* (EIR) (2009 SPW EIS/EIR) (Port 2009) and *2016 Addendum to the San Pedro Waterfront Project Environmental Impact Statement/Environmental Impact Report for the San Pedro Public Market Project* (2016 SPPM Addendum) (ICF 2016). Therefore, construction of the Proposed Project would not create a new significant impact, increase the severity of any impacts reported in the 2009 SPW EIS/EIR, nor require the implementation of new mitigation measures. **MM-NOI-1** and **MM-NOI-2** from the 2009 SPW EIS/EIR would be required. Consistent with the 2009 SPW EIS/EIR, construction noise impacts would remain significant and unavoidable after mitigation;
- Noise from the operation of the proposed Amphitheater would create significant impacts at surrounding noise-sensitive receptors (residences and liveaboard boats). These would be new impacts not previously identified in the 2009 SPW EIS/EIR or 2016 SPPM Addendum, and new mitigation measures would be required. Project Feature (**PF**)-**NOI-1** and **MM-NOI-3** through **MM-NOI-10** would be required to reduce noise impacts to the extent feasible, but would not reduce the impacts to less-than-significant levels. Therefore, Amphitheater noise impacts would remain significant and unavoidable after mitigation;
- Noise from the proposed fireworks displays would create significant impacts on surrounding noise-sensitive receptors (i.e., residences and liveaboard boats). These would be new impacts not previously identified in the 2009 SPW EIS/EIR or 2016 SPPM Addendum and new mitigation measures would be required. **MM-NOI-11** through **MM-NOI-14** would be required to reduce noise impacts to the extent feasible, but would not reduce the impacts to less-than-significant

levels. Therefore, noise impacts from fireworks displays would remain significant and unavoidable after mitigation;

- The Proposed Project would not create a new significant impact, increase the severity of any impacts reported in the 2009 SPW EIS/EIR or 2016 SPPM Addendum, nor require the implementation of new mitigation measures for the following noise sources:
  - Traffic noise;
  - Operation of the 208 E. 22nd Street Parking Lot; or
  - Operation of Ferris wheel and Amusement Attractions;
- The Proposed Project would not create a new significant impact, increase the severity of any impacts reported in the 2009 SPW EIS/EIR or 2016 SPPM Addendum, nor require the implementation of new mitigation measures related to groundborne vibration or groundborne noise levels; and
- The Proposed Project would not create a new significant impact, increase the severity of any impacts reported in the 2009 SPW EIS/EIR or 2016 SPPM Addendum, nor require the implementation of new mitigation measures related to noise from any public airport or public-use airport.

3.8.2 Introduction

This section provides a discussion of the regulatory and environmental setting for noise as it pertains to the Proposed Project and its alternatives, an evaluation of potential noise impacts from construction and operation, the level of significance of Proposed Project noise exposure, and, where applicable, potential noise mitigation measures. Technical acoustical terms commonly used in this section are defined in Table 3.8-1.

The analysis of each potential impact starts with a comparison of the Proposed Project description to the project description analyzed in the 2009 SPW EIS/EIR, the 2016 SPPM Addendum, and the *2019 Addendum to the San Pedro Waterfront Project Environmental Impact Report for the San Pedro Public Market Project* (2019 SPPM Addendum) (ICF 2019). which focused on an extension to the SPPM lease. New analyses were not conducted for Proposed Project elements and activities that were analyzed previously and would not change substantively as a result of the Proposed Project. The following Proposed Project elements are analyzed in this section because they would potentially change the previously analyzed noise and vibration impacts. The need to analyze these project elements does not necessarily indicate that impacts would change, simply that further analysis is required to verify whether the proposed changes create a new significant impact or increase the severity of a previously analyzed impact.

- Noise from construction of the Proposed Project, including the proposed new and expanded project elements (208 E. 22nd Street Parking Lot, Amphitheater, and the larger Ferris wheel);
- Noise from updated traffic volumes (including the addition of the 208 E. 22nd Street Parking Lot expansion and event traffic for Amphitheater events);
- Noise from the operation of the proposed 208 E. 22nd Street Parking Lot expansion;

- Noise from the operation of the proposed Amphitheater; and
- Noise from the proposed fireworks displays.

3.8.3 Environmental Setting

3.8.3.1 Noise Fundamentals

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound can be caused by its *pitch* or its *loudness*. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (i.e., frequency) of the vibrations by which it is produced. Higher-pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is the amplitude of sound waves combined with the reception characteristics of the ear. Amplitude may be compared with the height of an ocean wave—it has an oscillating high and low point. Technical acoustical terms commonly used in this section are defined in Table 3.8-1.

Table 3.8-1. Definitions of Acoustical Terms

Term	Definition
Decibel (dB)	*Decibels* are units describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micro Pascals.
Sound Pressure Level (SPL)	*Sound pressure* is the sound force per unit area, usually expressed in micro Pascals (or micro Newtons 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 dB. Sound pressure level is the quantity that is directly measured by a sound-level meter (SLM).
Frequency (Hertz [Hz])	*Frequency* is 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)	*A-Weighted Sound Level* is the SPL in dB as measured on a SLM using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level (L_{eq})	*Equivalent Noise Level* is the average A-weighted noise level during the measurement period. The hourly L_{eq} used for this report is denoted as dBA $L_{eq(h)}$. The 5-minute L_{eq} values are used for the analyses and assessment of Amphitheater noise levels are denoted as $L_{eq(5min)}$.
Community Noise Equivalent Level (CNEL)	*Community Noise Equivalent Level* is the average A-weighted noise level during a 24-hour day, obtained after addition of 5 dB to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 dB to sound levels in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level (L_{dn})	*Day/Night Noise Level* is the average A-weighted noise level during a 24-hour day, obtained after addition of 10 dB to levels measured in the night between 10:00 p.m. and 7:00 a.m.

Term	Definition
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period are expressed as L_{01}, L_{10}, L_{50}, L_{90}, respectively.
Ambient Noise Level	*Ambient Noise Level* is the composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location is referred to as *Intrusive*. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, time of occurrence, and tonal or informational content, as well as the prevailing ambient-noise level.

Decibels and Frequency

In addition to the concepts of pitch and loudness, several other noise measurement scales are used to describe noise. The dB) is a unit of measurement that indicates the relative amplitude of a sound. Zero on the dB scale is based on the lowest sound pressure that a healthy, unimpaired human ear can detect. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a tenfold increase in acoustic energy, whereas 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. There is a relationship between the subjective noisiness or loudness of a sound and its level. Each 10-dB increase in sound level is perceived as approximately a doubling of loudness over a wide range of amplitudes. Because dBs are logarithmic units, SPLs are not added arithmetically. When two sounds of equal SPL are added, the result is a SPL that is 3 dB higher. For example, if the sound level were 70 dB when 100 cars pass by, then it would be 73 dB when 200 cars pass the observer. Doubling the amount of energy would result in a 3-dB increase to the sound level.

Frequency relates to the number of pressure oscillations per second, or Hz. The range of sound frequencies that can be heard by healthy human ears is from about 20 Hz at the low-frequency end to 20,000 Hz (20 kilohertz [kHz]) at the high-frequency end.

There are several methods for characterizing sound. The most common is the *A-weighted sound level*, or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Studies have shown that the A-weighted level is closely correlated with annoyance at traffic noise. Other frequency-weighting networks, such as *C weighting*, or *dBC*, have been devised to describe noise levels for specific types of noise (e.g., explosives). Table 3.8-2 shows typical A-weighted noise levels that occur in human environments.

Table 3.8-2. Typical Noise Levels in the Environment

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
	120 dBA	
Jet fly-over at 300 meters		Rock concert
	110 dBA	
Pile driver at 30 meters	100 dBA	
		Night club with live music
	90 dBA	
Large truck passes by at 15 meters		
	80 dBA	Noisy restaurant
		Garbage disposal at 1 meter
Gas lawn mower at 30 meters	70 dBA	Vacuum cleaner at 3 meters
Commercial/Urban area daytime		Normal speech at 1 meter
Suburban expressway at 90 meters	60 dBA	
Suburban daytime		Active office environment
	50 dBA	
Urban area nighttime		Quiet office environment
	40 dBA	
Suburban nighttime		
Quiet rural areas	30 dBA	Library
		Quiet bedroom at night
Wilderness area	20 dBA	
	10 dBA	Quiet recording studio
Threshold of human hearing	0 dBA	Threshold of human hearing

dBA = A-weighted decibels.

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 SLM, which 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. Both include penalties for noise during the nighttime, but CNEL also penalizes noise during the evening. CNEL and L_{dn} are normally within 1 dBA of each other and are used interchangeably in this section.

Human Response to Noise

Studies under controlled conditions in an acoustics laboratory have shown that a healthy human ear is able to discern changes in sound levels of 1 dBA. In the normal environment, the healthy human ear can detect changes of about 2 dBA; however, it is widely accepted that changes of 3 dBA in the normal environment are considered just noticeable to most people. A change of 5 dBA is readily perceptible, and a change of 10 dBA is perceived as being twice as loud.

Noise and Health

A number of studies have linked increases in noise with health effects, including hearing impairment, sleep disturbance, cardiovascular effects, psychophysiological effects, and potential impacts on fetal development (Babisch 2005). Potential health effects appear to be caused by both short- and long-term exposure to very loud noises and long-term exposure to lower levels of sound. Acute sounds of $L_{AF} > 120$ dB can cause mechanical damage to hair cells of the cochlea (the auditory portion of the inner ear) and hearing impairment (Babisch 2005). As discussed in Table 3.8-2, above, $L_{AF} > 120$ dB is equivalent to a rock concert or a plane flying overhead at 300 meters. The World Health Organization and the U.S. Environmental Protection Agency (EPA) consider $L_{Aeq} = 70$ dBA to be a safe daily average noise level for the ear. However, even this "ear-safe" level may cause disturbance to sleep and concentration and may be linked to chronic health impacts, such as hypertension and heart disease (Babisch 2006). A number of studies have looked at the potential health effects from the sound of chronic lower noise levels, such as traffic, especially how these noise levels affect children. In a study of school children in Germany, blood pressure was found to be 10 millimeters of mercury higher in a group of students exposed to road traffic noise from high-traffic transit routes (Babisch 2006).

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 6 dBA for each doubling of distance. Highway noise is not a single, stationary 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 spread resulting from a point source. The change in sound level from a line source is 3 dBA per doubling of distance.
- **Ground Absorption**: Usually, the noise path between the source and the observer is very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the attenuation because of geometric spreading. 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 60 meters (300 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 receiver, no excess ground attenuation is assumed. 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 150 meters (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. Receivers 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).
- **Shielding by Natural or Human-Made Features**: A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by this shielding depends on the size of the object, proximity to the noise source and receiver, surface weight, solidity, and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver would typically result in at least 5 dB of noise reduction. A higher barrier may provide as much as 20 dB of noise reduction.

3.8.3.2 Existing Noise Environment

As part of the 2009 SPW EIS/EIR, 15 short-term noise measurements were obtained in November 2007, and two long-term (24+ hours) measurements were obtained on January 2008 (refer to the 2009 SPW EIS/EIR for complete details). These included several short-term measurements close to the Project Site, including in the San Pedro neighborhoods to the west. However, the long-term noise measurements were approximately 0.6 mile and 1.1 miles, respectively, north of the Proposed Project.

In order to more accurately describe the daytime, evening, and nighttime noise levels at residences in San Pedro, west of the Proposed Project, two new, long-term ambient-noise measurements were conducted over a 5-day period, between Wednesday, February 26, and Monday, March 2, 2020, using Piccolo II Type 2 SLMs manufactured by Soft dB[1]. The two locations were chosen for their relative placement between the Amphitheater and residences and their representative background-noise conditions. The long-term measurements captured daily noise level patterns and statistics continuously over 1-hour intervals. The measurements are designated LT1(2020) and LT2(2020); the 2020 designation is included to differentiate these measurements from the measurements obtained in 2008. These are the same measurements referenced in the focused technical study as *Location 1* and *Location 2* (AcousticsLab 2022).

Three new short-term (approximately 20-minute) ambient-noise measurements were conducted on Wednesday, February 26, and Monday, March 2, 2020, using a model 831 Type 1 SLM manufactured

[1] Type 2 sound-level meters are considered general grade for field use.

by Larson Davis[2]. Two of the locations were adjacent to residential uses in San Pedro west of the Proposed Project. The third was at the Cabrillo Marina. The measurements are designated ST1 (2020) through ST2 (2020).

Ambient-noise levels for other areas of interest were obtained from technical memos prepared for the Port in 2019, *Port of Los Angeles: Long-Term Noise Measurement Updates* (Illingworth and Rodkin 2019) and *Port of Los Angeles: 2019 Hourly Noise Measurement Data; Positions LT-1 through LT-5* (Illingworth and Rodkin 2020). The two locations of interest from those measurements are the Al Larson Marina (because the Marina may contain liveaboard vessels) and Reservation Point (due to the presence of employee housing). The two measurements are designated LT-AL and LT-RP, respectively. All measurement locations are shown on Figure 3.8-1

Table 3.8-1 summarizes the results of the noise measurements in San Pedro, west of the Project Site, and noise measurements at all the other locations. Long-term measurement results are summarized in terms of the range of CNEL, as well as the daytime (7:00 a.m. to 7:00 p.m.), evening (7:00 p.m. to 10:00 p.m.), and nighttime (10:00 p.m. to 7:00 a.m.) $L_{eq(h)}$. The short-term measurements are summarized in terms of the L_{eq} for the entire 20-minute measurement.

It is noted that the L_{eq} measured at each of the short-term measurements adjacent to residential uses in San Pedro fall within the range of daytime L_{eq}s measured during the long-term measurements. Therefore, the ambient-noise environment in the neighborhoods west of the Project Site can reasonably be defined using the data from the long-term measurements.

[2] Type 1 sound-level meters are considered precision grade for field use.

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Source: ESRI World Imagery (2022)

N

0 900 1,800

Feet

Figure 3.8-1
Ambient Noise Measurement Locations
West Harbor Modification Project

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Table 3.8-3. 2020 Ambient Noise Measurement Data at Residential Areas West of Project Site

Site	Location	Date	CNEL, dBA	Time of Day[1]	Range of $L_{eq(h)}$, dBA		
					Min	Max	Avg
LT1 (2020)	Western side of S. Beacon Street, near S. Crescent Avenue, opposite the Muller House Museum at 1542 S. Beacon Street	2/26/20–3/2/20	59.9–63.1	Daytime	54.7	65.5	59.3
				Evening	54.1	66.3	58.1
				Nighttime	44.8	63.7	54.1
LT2 (2020)	Eastern side of S. Crescent Avenue, near W. 20th Street, opposite 1947 S. Crescent Avenue	2/26/20–3/2/20	63.1–67.5	Daytime	57.0	70.3	62.7
				Evening	57.1	61.0	58.8
				Nighttime	47.2	67.8	57.9
Combined Average Data for Both LT Measurements		2/26/20–3/2/20	59.9–67.5	Daytime	56.0	68.5	61.3
				Evening	55.9	64.4	58.5
				Nighttime	46.2	66.2	56.4
ST1 (2020)	Northwestern corner of Harbor Boulevard and 3rd Street, next to 225 Harbor Boulevard	3/2/20	N/A	11:35 a.m.	67.2		
ST2 (2020)	Southwestern corner of S. Beacon Street and 12th Street, next to 123 12th Street	3/2/20	N/A	12:13 p.m.	58.0		

Notes:
[1] Daytime = 7:00 a.m. to 7:00 p.m. Evening = 7:00 p.m. to 10:00 p.m. Nighttime 10:00 p.m. to 7:00 a.m.
Avg = average; CNEL = Community Noise Equivalent Level; dBA = A-weighted decibels; $L_{eq(h)}$ = hourly equivalent noise level; LT = long term; Max = maximum; Min = minimum; N/A = not applicable; ST = short term.

Table 3.8-4. Ambient Noise Measurement Data at Other Locations

Site	Location	Date	CNEL, dBA	Time of Day[1]	Range of $L_{eq(h)}$, dBA		
					Min	Max	Avg
LT-AL	Al Larson Marina, at the end of Pier E	6/27/19–6/28/19	58.2	Daytime	52.6	57.8	55.8
				Evening	50.1	57.6	54.3
				Nighttime	47.9	53.1	49.9
LT-RP	Reservation Point, 60 feet from the nearest residence	6/27/19–6/28/19	57.4	Daytime	51.3	57.6	55.4
				Evening	49.9	52.9	51.7
				Nighttime	47.3	52.0	49.3
ST3 (2020)	Cabrillo Marina, northwest of the entrance to Dock E	2/26/20	N/A	2:58 p.m.	46.8		

Notes:
[1] Daytime = 7:00 a.m. to 7:00 p.m. Evening = 7:00 p.m. to 10:00 p.m. Nighttime 10:00 p.m. to 7:00 a.m.
Avg = average; CNEL = Community Noise Equivalent Level; dBA = A-weighted decibels; $L_{eq(h)}$ = hourly equivalent noise level; LT = long term; Max = maximum; Min = minimum; N/A = not applicable; ST = short term.

3.8.4 Regulatory Setting

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. A substantial temporary or periodic increase in ambient-noise levels in the project vicinity above the existing without the project?

e. For a project located within an airport land use plan, or where such a plan has not been adopted within 2 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?

The *CEQA Thresholds Guide* also provides a table summarizing land use compatibility with various noise levels. These guidelines are provided in Table 3.8-5.

Table 3.8-5. City of Los Angeles Guidelines for Noise-Compatible Land Use

Land Use	Community Noise Exposure CNEL, dB			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Single Family, Duplex, and Mobile Homes	50–60	55–70	70–75	Above 70
Multi-Family Homes	60–65	60–70	70–75	Above 70
Schools, Libraries, Churches, Hospitals, and Nursing Homes	50–70	60–70	70–80	Above 80
Playgrounds and Neighborhood Parks	50–70	–	67–75	Above 72

Source: City of Los Angeles 2006.
Notes:
Normally Acceptable: Specified land use is satisfactory, based on the assumption that any buildings involved are of normal conventional construction 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, would normally suffice.
Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, then 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 should generally not be undertaken.
CNEL = Community Noise Equivalent Level; dB = decibels.

Background information is presented in the following paragraphs regarding applicable or related regulations adopted by the City of Los Angeles or other agencies.

3.8.4.1 City of Los Angeles Municipal Code

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

> No person shall between the hours of 9:00 pm and 7:00 am 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.

The code section then provides certain provisions for exceptions and exemptions. Chapter XI, *Noise Regulation*, 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 7:00 am and 10:00 pm 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 therefrom (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.

Chapter XI provides noise standards for various operational noise sources. The Municipal Code specifies ambient-noise levels that cannot be exceeded by more than 5 dB at adjacent properties by a number of sources, including machines or devices "for the producing, reproducing or amplification of the human voice, music, or any other sound," radios, television sets, air conditioning, refrigeration, heating, pumping, filtering equipment, air conditioning equipment, certain powered equipment, and automotive repair. Any noise levels caused by these uses that exceeds the ambient-noise level on the premises of any other occupied property by more than 5 dB is a violation of the code. The limiting noise levels vary by land use and are found in Section 111.03 of the Municipal Code. The more-

critical limit applies to residential zones, and the presumed ambient-noise levels are 50 dBA (L_{eq}) during the day (7 a.m. to 10 p.m.) and 40 dBA (L_{eq}) during the night (10 p.m. to 7 a.m.). The Municipal Code specifies that the presumed ambient-noise level or the measured ambient-noise level, whichever is greater, is used in the assessment of impacts.

3.8.4.2 Los Angeles Noise Element of the General Plan

The *Noise Element* of the City's *General Plan 2035* (City of Los Angeles 1999) provides a broad perspective of the noise issues throughout the city and identifies goals, policies, and implementation measures to guide future City actions. The *Noise Element* identifies the freight train activities associated with the Los Angeles and Long Beach Harbors as a major noise generator in the City. It also points out that, generally, train noise is buffered from sensitive noise uses by surrounding industrial, warehouse, and commercial uses.

The *Noise Element* identifies the National Environmental Policy Act and CEQA as the primary regulations that guide environmental assessments in the City. CEQA requires that mitigation measures be incorporated into a proposed project to avoid or minimize significant impacts to the maximum extent feasible.

Under the *Goals, Objectives, and Policies* chapter of the *Noise Element*, Objective 1 is to "reduce airport and harbor-related noise impacts." No specific measures or further discussion relating to harbor operations is provided in this chapter. However, the following chapter in the *Noise Element*, Chapter IV, *Implementation*, identifies specific implementation policies for the Los Angeles Harbor. Implementation Program P2 applies to both airports and the harbor and states

> Noise abatement, mitigation and compatibility measures shall be incorporated into the city's general plan airport and harbor elements, including, where feasible, sound proofing of impacted sensitive uses, buffering, land use reconfiguration, modification of associated circulation and transportation systems, modification of operational procedures, conversion or phasing out of uses that are incompatible with airport or harbor uses, and/or other measures designed to reduce airport and harbor related noise impacts on adjacent communities.

3.8.5 Prior Mitigation Measures Applicable to the Proposed Project

The 2009 SPW EIS/EIR concluded that construction noise impacts would be significant. No other significant noise or vibration impacts were identified. The following two mitigation measures were included in the 2009 SPW EIS/EIR to reduce the construction noise levels; however, it was concluded that impacts would remain significant and unavoidable, even with the implementation of **MM NOI-1** and **MM NOI-2**.

MM NOI-1. Construct temporary noise barriers, muffle and maintain construction equipment, prohibit idling, locate equipment, use quiet construction equipment, and notify residents.

The following would reduce impact of noise from construction activities.

a) **Temporary Noise Barriers**. When construction is occurring within 500 feet of a residence or park, temporary noise barriers (solid fences or curtains) will be located between noise-generating construction activities and sensitive receivers.

b) **Construction Equipment**. All construction equipment powered by internal combustion engines will be properly muffled and maintained.

c) **Idling Prohibitions**. Unnecessary idling of internal combustion engines near noise sensitive areas will be prohibited.

d) **Equipment Location**. All stationary noise-generating construction equipment, such as air compressors and portable power generators, will be located as far as practical from existing noise sensitive land uses.

e) **Quiet Equipment Selection**. Select quiet construction equipment whenever possible. Comply where feasible with noise limits established in the City of Los Angeles Noise Ordinance.

f) **Notification**. Notify residents within 500 feet to the Project Site of the construction schedule in writing.

MM NOI-2. Construction Hours.

Construction activities for the Proposed Project would not exceed the ambient-noise level by 5 dBA at a noise-sensitive use between the hours of 6:00 p.m. and 7:00 a.m., Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday. If extended construction hours are needed during weekdays under special circumstances, LAHD and the contractor will provide at least 72 hours' notice to sensitive receptors within 0.5 mile of the construction area. Under no circumstances will construction hours exceed the range prescribed by the City of Los Angeles Municipal Code.

3.8.6 Methodology

The baseline for the noise analysis is generally intended to match the 2007 baseline considered in the 2009 SPW EIS/EIR. However, to facilitate a thorough analysis, it was necessary to develop additional baseline data using ambient-noise measurements conducted after the 2009 SPW EIS/EIR was complete; the need for this additional data is discussed in more detail below. Existing (2007) traffic-noise levels were calculated as part of the 2009 SPW EIS/EIR and were used as the baseline to assess traffic-noise impacts of the Proposed Project. Construction noise was assessed using comparative analysis, comparing Proposed Project construction to the construction activities and impacts disclosed in the 2009 SPW EIS/EIR; this means that the 2007 baseline was effectively incorporated as part of that analysis. Noise from the proposed larger Ferris wheel and other Amusement Attractions was addressed qualitatively and did not rely on any quantitative baseline data.

Additional baseline data was required to support the analysis of the remaining project elements, which are the Amphitheater, fireworks displays, and 208 E. 22nd Street Parking Lot. These noise sources will often or predominantly operate during the evening (7:00 p.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) hours. In addition, the Amphitheater and fireworks displays can be expected to generate audible noise over a large area when compared to many everyday noise sources. Most of the ambient noise data gathered as part of the 2009 SPW EIS/EIR was from short-term (i.e., 20-minute) daytime noise measurements. Therefore, new ambient noise data was added that included long-term (i.e., 24 hours or more) measurements to characterize daytime, evening, and nighttime noise levels separately. The new ambient-noise data also represented receivers farther away from the Project Site, where no measurements were obtained for the 2009 SPW EIS/EIR, at Al Larson Marina and Reservation Point. These measurements are described in greater detail in Section 3.8.3.2, *Existing Noise Environment*.

3.8.6.1 Construction Noise

Construction noise was addressed by comparing the Proposed Project description to the SPW description analyzed in the 2009 SPW EIS/EIR and 2016/2019 SPPM Addenda. The types of construction equipment and proximity to noise-sensitive receptors were reviewed and compared to determine whether and how construction noise impacts would deviate from the impacts found during the previous analyses. The analysis considered four categories of construction activity established in the 2009 SPW EIS/EIR. These categories are important to the comparative analysis conducted in Section 3.8.8, *Impacts of the Proposed Project*, and are summarized below.

1. **Small**: This category involves light construction activities, such as landscaping, hardscaping, and lighting, including transporting items to the construction site and removing refuge via trucks. Examples of construction equipment included in this category may include, but are not limited to, flatbed trucks, pickup trucks, dump trucks, generators, and vibratory concrete mixers. The 2009 SPW EIS/EIR stated that this category can usually be applied to small projects that do not involve the construction of major structures. Small construction projects can be expected to generate a L_{eq} of 80 dBA at 50 feet from construction.
2. **Medium**: This category describes all activities that are larger in scope than and would require louder construction activity in a given area than small project elements, but the noise generated is not sufficiently high to justify applying the heavy-construction label. Medium construction might, at times, employ heavy-construction equipment, but the duration, intensity, and frequency-of-use of such equipment is less than what would be expected during heavy construction. The 2009 SPW EIS/EIR stated that examples of construction equipment included in this category may include, but are not limited to, everything that is utilized in the small construction category, as well as concrete-mixer trucks, compactors, pavers, and chain saws. Medium construction projects can be expected to generate a L_{eq} of 85 dBA at 50 feet from construction.
3. **Heavy**: Any activity that is involved in the demolition of buildings would fall into this category, as well as the construction of some large buildings, and the excavation of earth on land. The 2009 SPW EIS/EIR stated that examples of heavy-construction equipment included in this category may include, but are not limited to, everything that is in the medium construction category, as well as jackhammers, excavators, cranes, scrapers, rollers, and concrete saws. Heavy-construction projects can be expected to generate a L_{eq} of 89 dBA at 50 feet from construction.

4. **Pile Driving**: This category is reserved for those activities near the Los Angeles Harbor that require building foundations for piers and wharfs, as well as excavating underwater sediment. This type of construction tends to be the noisiest. The 2009 SPW EIS/EIR stated examples of construction equipment included in this category may include, but are not limited to, everything that is in the heavy category, as well as pile drivers, dredges, slurry-trenching machines, and pumps. Pile-driving construction projects can be expected to generate a L_{eq} of 101 dBA at 50 feet from construction.

3.8.6.2 Construction Vibration

Construction vibration was addressed by comparing the current project description to the project description analyzed in the 2009 SPW EIS/EIR and 2016/2019 SPPM Addenda. The types of construction equipment and proximity to noise-sensitive receptors were reviewed and compared to determine whether and how construction vibration impacts would deviate from the impacts found during the previous analyses.

3.8.6.3 Traffic Noise

Traffic noise was analyzed previously in the 2009 SPW EIS/EIR. That analysis considered traffic noise generated by the entire SPW Project site which was substantially larger than the Project Site. As a result, the 2009 SPW EIS/EIR considered a large roadway network of more than 120 roadway segments on approximately 24 roadways. The transportation analysis for the Proposed Project was much more focused, determining the vast majority of project-generated traffic would access the site via Harbor Boulevard, traveling south directly to the Project Site from State Route 47. Therefore, the traffic noise analysis also focused on Harbor Boulevard and conservatively assumed that 100 percent of the Proposed Project trips would use Harbor Boulevard. To evaluate potential impact changes relative to the 2009 SPW EIS/EIR, it was necessary to quantify how predicted average daily traffic (ADT) volumes have changed since the 2009 SPW EIS/EIR and compare the updated traffic volumes to the baseline established in the 2009 SPW EIS/EIR. Therefore, baseline existing traffic volumes and traffic-noise levels were obtained from the 2009 SPW EIS/EIR, as well as predicted traffic volumes for the overall SPW Project. Adjustments to those project traffic volumes were made based on data in the 2016 SPPM Addendum. Then the net increase in traffic noise as a result of the Proposed Project was calculated based on the predicted new vehicle trips for the proposed Amphitheater (refer to the transportation analysis in Section 3.9, *Transportation*).

3.8.6.4 208 E. 22nd Street Parking Lot Noise

Noise from the proposed expansion of the 208 E. 22nd Street Parking Lot was analyzed using methodology from the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).[3] The methodology involves establishing a reference $L_{eq(h)}$ noise level at 50 feet based on the number of vehicle movements into and out of the 208 E. 22nd Street Parking Lot. The noise level is then adjusted based on the distance to the closest receiver(s). Because the 208 E. 22nd Street Parking Lot would have 2,600 parking spaces, it is assumed that 2,600 vehicle

[3] For details refer to FTA 2018 Table 4-13, *Source Reference Levels at 50 feet from Center of Site, Stationary Sources*, and Table 4-14, *Computation of $L_{eq(1hr)}$ and L_{dn} at 50 ft for Stationary Source General Noise Assessment*.

movements would occur in an hour, representing a large event when the entire parking lot could fill up or empty during a single hour.

3.8.6.5 Ferris Wheel and Amusement Attractions

Although the proposed 175-foot-diameter Ferris wheel would be larger than the 100-foot-diameter Ferris wheel considered in the 2016 SPPM Addendum, it is not expected to be a substantial noise source, and the noise profile would be similar to that of the smaller Ferris wheel. The Amusement Attractions are anticipated to be similar to the amusement and entertainment attractions that were already considered as part of the Discovery Sea Amusement Area in the 2016 SPPM Addendum. Therefore, noise from the Ferris wheel and Amusement Attractions is analyzed qualitatively based on their general characteristics and similarity to previously approved SPPM elements.

3.8.6.6 Amphitheater Noise

Both the 2009 SPW EIS/EIR and the 2016 SPPM Addendum considered a 500-seat amphitheater and did not identify any significant impacts resulting from amphitheater noise. Therefore, two types of Amphitheater events are considered in the analysis, as follows:

- **Tier 1 Events** are defined as public or private performance events with amplified sound and intended audiences of more than 500 people. Any supporting activities, such as sound checks and rehearsals for a Tier 1 Event, are considered part of the Tier 1 Event, regardless of the presence and/or size of the audience inside the Amphitheater at the time of such activities.
- **Tier 2 Events** are small events attended by 500 people or less that would generate substantially lower noise levels than Tier 1 Events. Tier 2 Events could include activities such as community events or viewing parties.

Tier 2 Events were already analyzed and cleared under CEQA because they fall within the scope of the project analyzed in the 2009 SPW EIS/EIR and the 2016 SPPM Addendum. The 2009 SPW EIS/EIR anticipated an amphitheater with lawn seating for 500 people at Fishermen's Park. The 2016 SPPM Addendum anticipated a separate 500-seat amphitheater in the Discovery Sea Amusement Area of the Project Site. No significant noise impacts from amphitheater operations were identified in the 2009 SPW EIS/EIR or 2016 SPPM Addendum. Therefore, Tier 2 Events would not cause significant noise impacts and they are not analyzed further as part of the Proposed Project.

To assess future noise levels from Tier 1 Events at the proposed Amphitheater, a focused technical study was conducted. The study, *Music Performance Community Noise Level Estimation and Assessment* (AcousticsLab 2022), is attached as Appendix F to this SEIR.

Sound Pressure Levels (SPLs) were first calculated within the proposed Amphitheater based on the following.

1. Assumed the maximum music performance SPL target values provided by the Amphitheater's developer team:
    a. **Approximately 106 dBA L_{eq} (5 min)**: Audience area nearest to the stage;
    b. **Approximately 110 dBA L_{eq} (5 min)**: Mixing, or front-of-house position, approximately 95 feet from the stage; and

c. **Approximately 103 dBA L_{eq} (5 min)**: Furthest audience locations at the Amphitheater's perimeter.

2. Incorporated loudspeaker system design and software processing with sound-focusing capabilities that aim at the developer-defined SPL limits within the Amphitheater, while reducing the amount of sonic energy spillage outside the Amphitheater. Additional details regarding sound system/loudspeaker assumptions are described in the focused technical study (AcousticsLab 2022).

From the sound levels at the proposed Amphitheater, noise levels in the surrounding community were then estimated with far-field SPL modeling software, NoizCalc[4].

Atmospheric conditions[5] could change the way that sound propagates from the proposed Amphitheater to the surrounding land uses. Because the majority of nearby noise-sensitive receivers are homes to the west, the following two environmental scenarios were assessed to investigate the range of anticipated community noise levels.

1. Favorable Atmospheric Conditions
    a. **Wind Direction**: 285 degrees (from west–northwest) – away from residences; and
    b. **Temperature Gradient**: -0.09 Kelvin/meter (K/m) – temperature dropping with elevation, directing upward-bound sonic energy away from the ground (this is a common daytime condition)
2. Unfavorable Atmospheric Conditions
    a. **Wind Direction**: 850 degrees (from east–northeast) – toward residences; and
    b. **Temperature Gradient**: +0.09K/m – temperature rising with elevation, directing upward-bound sonic energy back toward the ground (temperature inversion)

Two sets of sound-system tuning parameters were defined for the proposed Amphitheater, aimed at reducing community noise under favorable and unfavorable environmental conditions, while maintaining the prescribed SPLs within the Amphitheater.

- **System Tuning 1**: Appropriate to favorable atmospheric conditions, where refraction would direct sonic energy aiming outside the Amphitheater upward, and wind flow would direct it toward the ocean.
- **System Tuning 2**: Appropriate to unfavorable atmospheric conditions, where refraction would redirect any sonic energy exiting downward, and wind flow would redirect it toward the community.

For each environmental condition, two noise maps were generated using the noise-modeling software. One noise map was for a height of 5.5 feet, to represent ground-level receivers. The second noise map was for a height of 16 feet, to represent the upstairs level of two-story buildings.

[4] NoizCalc: https://www.dbaudio.com/global/en/products/software/noizcalc. Created with SoundPLAN https://www.soundplan.eu/en, a specialist software developer for environmental noise prediction.

[5] Note that the focused technical study (AcousticsLab 2022) uses alternative terminology to describe atmospheric conditions, using the terms *environmental conditions* and *weather conditions* interchangeably.

3.8.6.7 Fireworks Noise

Fireworks noise levels were estimated using measured noise data from the *San Diego Bay and Imperial Beach Oceanfront Fireworks Display Events Project* EIR (Fireworks Display EIR) (ICF 2017). As part of the Fireworks Display EIR, noise monitoring was conducted at six locations around San Diego Bay during the 2016 Fourth of July fireworks at the following locations.

- **The Big Bay Boom**: Fireworks display event using four launch barges in San Diego Bay.
- **Fourth of July Imperial Beach Fireworks Show**: Fireworks display event with fireworks launched from the middle portion of Imperial Beach Pier.
- **The Fireworks Show over Glorietta Bay**: Fireworks display event using one launch barge adjacent to Coronado in Glorietta Bay.

Using these measurements, the Fireworks Display EIR estimated the noise level from each fireworks launch location. Normalizing the measured noise levels to a distance of 50 feet, reference noise levels for the individual launch locations ranged from approximately 112 to 117 dBA L_{eq} over the duration of the fireworks displays, which ranged from 18 to 20 minutes.

Based on a review of Fireworks Display EIR data, the average noise level from each launch location is proportional to the average pounds of fireworks launched per minute during the display, which ranged from 397 to 1,336 pounds per minute for the measured Fourth of July Displays. These displays are much larger than those proposed for the Proposed Project, which were identified as being similar in scale to the San Diego Symphony Summer Pops Fireworks described in the Fireworks Display EIR as using up to 95 pounds of fireworks in up to 10 minutes, resulting in an average of 9.5 pounds per minutes (95 pounds ÷ 10 minutes). This value was used to estimate the future noise levels from the proposed fireworks displays at a reference distance of 50 feet. These source noise levels were then adjusted to account for the distances between the Proposed Project fireworks launch location and the nearby noise-sensitive receptors. It was assumed that noise levels would attenuate (i.e., be reduced) at a rate of 6 dB per doubling, which is consistent with the methodology used in the Fireworks Display EIR.

3.8.7 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines (Environmental Checklist), the Proposed Project would have a significant hydrology and water quality impact if it would:

- Generate a substantial temporary or permanent increase in ambient-noise levels in the vicinity of the Proposed Project in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies.
- Generate excessive groundborne vibration or groundborne noise levels.
- Be located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels.

The 2009 SPW EIS/EIR relied primarily on the *L.A. CEQA Thresholds Guide* (City of Los Angeles 2006) to define specific impact thresholds. For operational noise, the Thresholds Guide relies

primarily on the 24-hour CNEL metric, consistent with the City's *General Plan 2036 – Noise Element*, to assess operational noise levels and noise increases. Although this makes sense for daily long-term noise sources, such as traffic, it may not be the best approach for characterizing the impacts of noise sources such as the proposed Amphitheater events or fireworks displays, which would not operate every day and would typically occur over a duration of minutes or hours rather than 24 hours per day. For that reason, noise impacts from the Amphitheater and fireworks displays are assessed using the 1-hour $L_{eq(h)}$ metric. This approach is consistent with the City's Municipal Code, which provides different noise standards for the daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) hours. The following quantitative thresholds will be used to assess noise impacts.

- Based on the *L.A. CEQA Thresholds Guide* (City of Los Angeles 2006), the Proposed Project would have a significant impact on noise levels from construction if:
    - Construction activities lasting more than 1 day would exceed existing ambient exterior noise levels by 10 dBA or more at a noise-sensitive use; or,
    - 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 a noise-sensitive use; or,
    - Construction activities would exceed the ambient-noise level by 5 dBA at a noise-sensitive use between the hours of 9:00 p.m. and 7:00 a.m., Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday.
- Based on the *L.A. CEQA Thresholds Guide* (City of Los Angeles 2006), the Proposed Project would have a significant impact on noise levels from traffic if the Proposed Project were to cause the operational ambient-noise level measured at the property line of affected uses to increase by 3 dBA in CNEL, to or within the *normally unacceptable* or *clearly unacceptable* category, or any 5 dBA in CNEL or greater noise increase.[6] Sensitive receivers in the Proposed Project vicinity include residential land uses (e.g., single- and multifamily housing, boats used as residences) and neighborhood parks. At these land uses, a significant impact would occur if the Proposed Project were to cause CNEL noise levels to increase by: (1) 5 dBA or greater where the existing CNEL is less than 70 dBA; or (2) 3 dBA or greater where the existing CNEL exceeds 70 dBA.
- Based on the *L.A. CEQA Thresholds Guide* (City of Los Angeles 2006), the Proposed Project would have a significant impact if it would result in noise levels at a noise-sensitive use attributable to airport operations exceeding 65 dB CNEL and increasing ambient-noise levels by 1.5 dB CNEL or greater.
- Based on the City's Municipal Code, the Proposed Project would have a significant impact on noise levels from operations if the Proposed Project would result in noise levels at a noise-sensitive use attributable to Amphitheater operations or fireworks displays that would exceed the existing daytime, evening, or nighttime ambient-noise levels by more than 5 dBA $L_{eq(h)}$.[7]

The nearest airport is the Torrance Municipal Airport, which is more than 4 miles from the Proposed Project; therefore, there would be no significant impacts related to airport noise for the Proposed Project or any of the alternatives.

[6] *Normally unacceptable* and *clearly unacceptable* categories are defined in the land use compatibility guidelines in the *L.A. CEQA Thresholds Guide* (refer to Table 3.8-5).

[7] Daytime = 7:00 a.m. to 7:00 p.m.; evening = 7:00 p.m. to 10:00 p.m.; nighttime = 10:00 p.m. to 7:00 a.m.

3.8.8 Impacts of the Proposed Project

Impact NOI-1. Would the Proposed Project generate a substantial temporary or permanent increase in ambient-noise levels in the vicinity of the project in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?

Summary of 2009 SPW EIS/EIR Findings

The 2009 SPW EIS/EIR determined that construction noise associated with numerous project elements would be significant because the construction elements would increase ambient-noise levels by 5 dB or more. Mitigation measures were provided, but it was concluded that construction-noise impacts would be significant and unavoidable even with the implementation of noise mitigation. The SPW Project elements affected by the Proposed Project include the Ports O'Call Village and San Pedro Park. The 2009 SPW EIS/EIR identified significant construction noise impacts from these elements, including from pile driving for the waterfront promenade within Ports O'Call, heavy equipment required to construct the parking areas within the Ports O'Call Village, and construction of San Pedro Park. Other construction activities associated with the redevelopment of the Ports O'Call site were determined to result in less-than-significant impacts. The only significant operational noise impact identified in the 2009 SPW EIS/EIR was a traffic-noise impact at liveaboard vessels in Cabrillo Marina, due to traffic increases on Miner Street south of 22nd Street; the 2009 SPW EIS/EIR found there were no available mitigation measures for this impact, and the impact was determined to be significant and unavoidable. However, this traffic would be generated by cruise-terminal operations and was not associated with the Ports O'Call or San Pedro Park developments. Traffic noise impacts from all other roadways were determined to be less than significant. The 2009 SPW EIS/EIR did not find any other noise impacts from operational noise sources, such as parking lots and other onsite activities, including the 500-seat amphitheater proposed as part of the SPW Project.

Summary of 2016 SPPM Addendum Findings

The 2016 SPPM Addendum found that the SPPM Project would result in similar construction activities and similar, previously identified impacts. Although the SPPM Project would require the same or fewer piles than analyzed in the 2009 SPW EIS/EIR and, thus, would result in a similar or shorter duration of pile-driving activities, pile driving would still exceed the 5 dB threshold at the nearest sensitive receptors. Furthermore, the construction of the parking areas within the Project Site would require the use of heavy construction equipment and would also exceed 5 dB at the nearest sensitive receptors. Therefore, consistently with the findings of the 2009 SPW EIS/EIR, impacts associated with the construction of the SPPM Project would remain significant and unavoidable even with the implementation of mitigation measures (**MM NOI-1** and **MM NOI-2**). The 2016 SPPM Addendum noted the addition of a Ferris wheel attraction to the SPPM Project, but found no significant noise impacts as a result of that change. The SPPM Project was determined not to result in new significant impacts, substantially increase the severity of a previously analyzed impact, nor require the implementation of new mitigation measures that were not already evaluated in the 2009 SPW EIS/EIR. Therefore, there was no substantial change from the findings in the 2009 SPW EIS/EIR.

Summary of 2019 SPPM Addendum Findings

The 2019 SPPM Addendum addressed a lease extension for the SPW Project. It determined the lease extension would not result in any changes to the proposed operational and noise-generating activities of the2016 SPPM Addendum. As such, the revised SPPM Project would not cause any change to the impact determination for noise made in the 2009 SPW EIS/EIR and 2016 SPPM Addendum.

Impact of the Proposed Project

Construction Noise

Construction at the Project Site was analyzed previously in the 2009 SPW EIS/EIR. That analysis indicated that construction of the SPW Project would result in noise levels of approximately 51 to 91 dBA L_{eq} at the nearest noise-sensitive receptors, causing noise increases of 1 to 36 dBA in ambient-noise levels. Most of the Proposed Project construction would occur in the area identified in the 2009 SPW EIS/EIR as the Ports O'Call Village; the 208 E. 22nd Street Parking Lot modifications would occur in a portion of the area identified in the 2009 SPW EIS/EIR as San Pedro Park. Construction noise from each of these areas is evaluated below.

Proposed Project construction in the area previously identified as Ports O'Call would remain similar to the construction analyzed in the 2009 SPW EIS/EIR, with similar heavy-construction activities, including pile driving. Significant impacts identified in the 2009 SPW EIS/EIR due to pile driving would be similar under the Proposed Project because pile driving would occur at similar locations on the east side of the Project Site. The 2009 SPW EIS/EIR analyzed receivers at distances ranging from 220 to 1,380 feet from pile driving and found noise impacts significant in all cases. Pile driving for the Ferris wheel construction, if required, could occur within approximately 1,000 feet of the closest homes to the west, which is within the range considered in the 2009 SPW EIS/EIR. Therefore, the impact would be significant and unavoidable for the Proposed Project, which would be consistent with the impact analysis in the 2009 SPW EIS/EIR. Construction of the Amphitheater would use similar construction equipment to that which was analyzed previously for construction in the Ports O'Call area. Assuming Amphitheater construction could fall into the "heavy" category, noise levels could be up to 89 dBA at 50 feet. Adjusting for the distance of approximately 1,500 feet to the nearest noise-sensitive receptors (i.e., residences to the west), the noise level would be reduced to approximately 59 dBA, which would not increase ambient-noise levels by 5 dBA or more. As a result, noise impacts from the construction of the Amphitheater would be less than significant, and there would be no new noise impacts because of Amphitheater construction.

Proposed Project construction of the 208 E. 22nd Street Parking Lot in the San Pedro Park area would be different than the construction analyzed in the 2009 SPW EIS/EIR. The Proposed Project would construct a parking lot instead of the park considered in the 2009 SPW EIS/EIR, and it would also require the demolition of two structures. Therefore, construction activity would fall into the "heavy" category, rather than the "medium" category assumed in the 2009 SPW EIS/EIR. As a result, average noise levels would increase by approximately 4 dBA (medium construction projects can be expected to generate a L_{eq} of 85 dBA at 50 feet versus 89 dBA at 50 feet for heavy construction projects; refer to Section 3.8.4.1 for details). However, the proposed 208 E. 22nd Street Parking Lot would not occupy the entire San Pedro Park area considered in the 2009 SPW EIS/EIR and, as a result, the proposed construction activity would occur farther from the closest noise-sensitive receptor. The 208 E. 22nd Street Parking Lot would be at least 600 feet from the closest residence, compared to the

closest distance of 190 feet considered in the 2009 SPW EIS/EIR for San Pedro Park. This increase in distance would reduce worst-case noise levels by approximately 10 dB, leading to a net decrease in construction noise relative to the 2009 SPW EIS/EIR. However, the increase in ambient-noise levels would still exceed 5 dBA, so the impact would remain significant and unavoidable for the Proposed Project, and the impact would be consistent with the impact analysis in the 2009 SPW EIS/EIR.

Based on the analysis and comparison described above, construction noise impacts due to the Proposed Project would be significant and unavoidable due to pile driving for the Ferris Wheel installation and heavy construction at the 208 E. 22nd Street Parking Lot, but noise impacts due to Amphitheater construction would be less than significant. Because these construction activities replace similar activities at similar locations that were already analyzed and found to be significant in the 2009 SPW EIS/EIR, these do not represent new significant impacts not previously considered in the 2009 SPW EIS/EIR or 2016 SPPM Addendum. In addition, Proposed Project construction would not increase the severity of the significant impacts disclosed in the 2009 SPW EIS/EIR or require the implementation of new mitigation measures. **MM NOI-1** and **MM NOI-2** from the 2009 SPW EIS/EIR would be required. Consistently with the 2009 SPW EIS/EIR, construction noise impacts would remain significant and unavoidable after mitigation.

Traffic Noise

To understand the traffic-noise analysis described below, it is helpful to know that the Project Site is located in the areas identified as the Ports O'Call Village and San Pedro Park in the 2009 SPW EIS/EIR and as the SPPM in the 2016 SPPM Addendum. Table 3.8-6 summarizes relevant traffic data for Harbor Boulevard from the 2009 SPW EIS/EIR; this includes the existing 2007 volumes and traffic noise levels (2007 was analyzed as the baseline traffic year in the 2009 SPW EIS/EIR), as well as the existing-plus-project traffic volumes predicted at that time and the calculated project traffic volume on each roadway segment associated with the SPW Project (the entire SPW project, not just the Ports O' Call).

Table 3.8-6. Harbor Boulevard Traffic Noise Data from 2009 SPW EIS/EIR

Harbor Blvd Segment	Existing 2007 ADT	Existing 2007 Traffic CNEL at 50 feet, dB	Project ADT for 2007 SPW Project	Existing + Project 2007 ADT	Existing + Project 2007 Traffic CNEL at 50 feet, dB	dB Increase due to Proposed Project
Swinford Street to Beacon Street	28,625	70.9	13,000	41,625	72.5	1.6
Beacon Street to O'Farrell Street	31,700	71.4	15,538	47,238	73.1	1.7
O'Farrell Street to Santa Cruz Street	30,550	71.3	15,588	46,138	73.1	1.8
Santa Cruz Street to 1st Street	27,013	70.8	15,625	42,638	72.8	2.0
1st Street to 2nd Street	25,663	70.5	15,513	41,176	72.6	2.1
2nd Street to 3rd Street	24,400	70.3	15,525	39,925	72.4	2.1

Harbor Blvd Segment	Existing 2007 ADT	Existing 2007 Traffic CNEL at 50 feet, dB	Project ADT for 2007 SPW Project	Existing + Project 2007 ADT	Existing + Project 2007 Traffic CNEL at 50 feet, dB	dB Increase due to Proposed Project
3rd Street to 5th Street	23,801	70.2	15,725	39,526	72.4	2.2
5th Street to 6th Street	20,763	69.6	15,938	36,701	72.1	2.5
6th Street to 7th Street	18,775	69.2	17,100	35,875	72	2.8

Source: LAHD 2009.
ADT = average daily traffic; CNEL = Community Noise Equivalent Level; dB = decibel; EIR = environmental impact report; EIS = environmental impact statement; SPW = San Pedro Waterfront.

The 2016 SPPM Addendum addressed various changes to the SPW Project for the Port O'Call site and identified a reduction in predicted visitor trips to and from the SPPM Project, from 8,632 trips to 5,798 trips on weekdays (a reduction of 2,837 daily weekday trips), and 8,517 trips to 6,285 trips on weekends (a reduction of 2,232 daily weekend trips). The most conservative (i.e., smallest) reduction of 2,232 daily trips is used in the analysis.

Total project trip generation for the Proposed Project is predicted to be 4,862 trips per day.

Table 3.8-7 summarizes these traffic changes and compares them to the original 2007 baseline to calculate updated traffic noise levels and noise increases.

Table 3.8-7. Harbor Boulevard Traffic Noise Data, Proposed Project Modification Versus 2007 Baseline

Harbor Blvd Segment	Existing 2007 ADT [a]	Existing 2007 Traffic CNEL at 50 feet, dB[1]	Net ADT Increase with Proposed Project[2]	Existing 2007 + Proposed Project ADT	Existing 2007 + Net Increase CNEL at 50 feet, dB	dB Increase due to Proposed Project
Swinford Street to Beacon Street	28,625	70.9	15,630	44,255	72.8	1.9
Beacon Street to O'Farrell Street	31,700	71.4	18,168	49,868	73.4	2.0
O'Farrell Street to Santa Cruz Street	30,550	71.3	18,218	48,768	73.3	2.0
Santa Cruz Street to 1st Street	27,013	70.8	18,255	45,268	73.0	2.2
1st Street to 2nd Street	25,663	70.5	18,143	43,806	72.8	2.3
2nd Street to 3rd Street	24,400	70.3	18,155	42,555	72.7	2.4

Harbor Blvd Segment	Existing 2007 ADT [a]	Existing 2007 Traffic CNEL at 50 feet, dB[1]	Net ADT Increase with Proposed Project[2]	Existing 2007 + Proposed Project ADT	Existing 2007 + Net Increase CNEL at 50 feet, dB	dB Increase due to Proposed Project
3rd Street to 5th Street	23,801	70.2	18,355	42,156	72.7	2.5
5th Street to 6th Street	20,763	69.6	18,568	39,331	72.4	2.8
6th Street to 7th Street	18,775	69.2	19,730	38,505	72.3	3.1

[1] LAHD 2009.

[2] Calculated as follows: 2007 project traffic volume (varies by roadway segment) + 4,862 trips (proposed Amphitheater) + 300 trips (proposed Amusement Attractions) - 2,232 trips (reduction identified in the 2016 SPPM Addendum).

ADT = average daily traffic; CNEL = Community Noise Equivalent Level; dB = decibel; EIR = environmental impact report; EIS = environmental impact statement; SPPM = San Pedro Public Market; SPW = San Pedro Waterfront.

Comparing Table 3.8-6 and Table 3.8-7, the Proposed Project would lead to a net increase in noise levels of 0.2 to 0.3 dB CNEL compared to the results of the 2009 SPW EIS/EIR analysis. Overall, these are very small increases that would typically be inaudible. Furthermore, none of the calculated increases lead to an exceedance of the established threshold of significance for potential traffic-noise impacts (increases at noise-sensitive receptors of 5 dBA or greater, where the existing CNEL is less than 70 dB; or 3 dB or greater where the existing CNEL exceeds 70 dB).

Based on the analysis and comparison described above, traffic-noise impacts from the operation of the Proposed Project would be less than significant. The significant and unavoidable traffic-noise impact reported in the 2009 SPW EIS/EIR for Miner Street, south of 22nd Street, would remain, but would not be directly associated with, and would not be affected by, the Proposed Project. Therefore, the Proposed Project would not create a new significant impact, increase the severity of any impacts reported in the 2009 SPW EIS/EIR, nor require the implementation of new mitigation measures.

208 E. 22nd Street Parking Lot Noise

Noise from the proposed expanded 208 E. 22nd Street Parking Lot was estimated using the FTA methodology described in Section 3.8.6, *Methodology*. Based on an estimate of up to 2,600 vehicle movements per hour (one for each parking space), the estimated $L_{eq(h)}$ at 50 feet would be 61 dBA. The closest residence to the parking lot is approximately 780 feet to the northwest, near the southern end of Beacon Street. At this distance, the 208 E. 22nd Street Parking Lot noise would be reduced by approximately 31 dB to approximately 30 dBA $L_{eq(h)}$. This noise level is well below the ambient-noise levels in this area, which range from approximately 45 to 66 dBA $L_{eq(h)}$ based on noise measurement LT1. Therefore, the noise from the 208 E. 22nd Street Parking Lot would be less than significant. Because no operational noise impacts were identified in the 2009 SPW EIS/EIR, operation of the 208 E. 22nd Street Parking Lot would not create new significant impacts, increase the severity of any previously identified impacts, nor require the implementation of new mitigation measures.

Ferris Wheel and Amusement Attractions

The proposed 175-foot-diameter Ferris wheel would be designed for quiet operation for the comfort of the passengers aboard, would not be a major noise source, and would have a similar noise profile to the 100-foot-diameter Ferris wheel, which was not found to cause any significant noise impacts when it was proposed in the 2016 SPPM Addendum. The proposed Amusement Attractions are anticipated to be similar to the amusement and entertainment attractions already considered as part of the Discovery Sea Amusement Area which were not found to cause any significant noise impacts in the 2016 SPPM Addendum. As a result, noise impacts from the Ferris wheel and Amusement Attractions would be less than significant. Because no operational noise impacts were identified in the 2009 SPW EIS/EIR or the 2016 SPPM Addendum for the 100-foot-diameter Ferris wheel or the Discovery Sea Amusement Area, operation of the proposed Ferris wheel and Amusement Attractions would not create new significant impacts, increase the severity of any previously identified impacts, nor require the implementation of new mitigation measures.

Amphitheater Noise

As discussed in Section 3.8.6.6, *Amphitheater Noise*, Tier 2 Events (i.e., small events attended by 500 people or less) at the Amphitheater would be consistent with the 500-seat amphitheater options analyzed and cleared under CEQA as part of the 2009 SPW EIS/EIR and the 2016 SPPM Addendum. Therefore, Tier 2 Events would not create new significant noise impacts, increase the severity of any previously identified impacts, nor require the implementation of new mitigation measures, and they are not analyzed further as part of the Proposed Project.

The assessment of impact for Amphitheater noise from Tier 1 Events is based on the noise contour maps in the focused technical study (AcousticsLab 2022) and the measured ambient-noise levels described in Section 3.8.3, *Environmental Setting*. The focused technical study provides a summary analysis of community noise levels at the residential uses west of the proposed Amphitheater. The following assessment includes additional noise-sensitive receptors that are not specifically discussed in the focused technical study. Al Larson Marina and Cabrillo Marina are included because they may contain liveaboard vessels, and the employee housing at the southern end of Reservation Point is also included. The focused noise study analyzes community noise levels based on the maximum specified $L_{eq(5min)}$ (5-minute average noise) within the Amphitheater. The modeling does not specifically quantify crowd noise. Although crowd noise would likely be audible at times and may occasionally be the dominant source of noise for short periods (e.g., cheering or clapping between musical numbers) it would not be the dominant source of noise overall compared to the modeled music noise levels. To provide a reasonable worst-case analysis, it is assumed the maximum specified $L_{eq(5min)}$ within the Amphitheater could persist for a full hour. In reality, hourly noise levels could be lower because of changes in music levels and quieter portions of the performance, including breaks when no music is being played.

Table 3.8-8 summarizes the results under favorable atmospheric conditions that would naturally reduce noise propagation to the neighborhoods west of the Project Site. Table 3.8-9 summarizes the results under unfavorable environmental conditions that would naturally increase noise propagation to the neighborhoods west of the Project Site. As described in Section 3.8.6, *Methodology*, both cases assume that the Amphitheater sound system is tuned to minimize the spillover of sound to the west.

The noise contour maps presented in the focused technical study are reproduced on Figure 3.8-2, Figure 3.8-3, Figure 3.8-4, and Figure 3.8-5, to follow. The noise contour maps are complex and illustrate the estimated noise levels as they vary over a large area (approximately 3.5 square miles). Each of the considered receivers occupies an area such as a neighborhood, marina, or cluster of homes, rather than a single point. The modeled noise levels range from less than 60 dBA to more than 100 dBA, illustrated in increments (i.e., contour bands) of 6 dBA. Therefore, it is necessary to summarize the data to make meaningful judgments of the impacts without an unnecessary or confusing level of complexity. For the purposes of calculations and comparisons, the reported noise levels are based on the prevailing worst-case noise levels at each receiver area. To avoid reporting anomalous or unrepresentative noise levels, the dominant noise contours across each receiver area are used to estimate the representative noise level; small or highly localized contour regions are not selected to represent the receiver area. All reported noise levels (ambient and Amphitheater noise) are rounded to the nearest whole dB, and fractional values are not calculated.

Table 3.8-8. Community Noise Levels from Amphitheater with Favorable Atmospheric Conditions

Receiver/ Location	Time of Day[1]	Ambient	Amphitheater Noise Levels and Comparison to Ambient, $L_{eq(h)}$ dBA			
			5.5-foot Elevation		16-foot Elevation[2]	
			Noise	Overage	Noise	Overage
San Pedro Residences West of the Amphitheater	Daytime	61	69	**8**	69	**8**
	Evening	59	69	**10**	69	**10**
	Nighttime	56	69	**13**	69	**13**
Al Larson Marina	Daytime	56	78	**22**	N/A	N/A
	Evening	54	78	**24**	N/A	N/A
	Nighttime	50	78	**28**	N/A	N/A
Reservation Point	Daytime	55	80	**25**	80	**25**
	Evening	52	80	**28**	80	**28**
	Nighttime	49	80	**31**	80	**31**
Cabrillo Marina	Daytime[3]	50	73	**23**	N/A	N/A
	Evening[3]	50	73	**23**	N/A	N/A
	Nighttime[4]	41	73	**32**	N/A	N/A

Source: AcousticsLab 2022.

[1] Daytime = 7:00 a.m. to 7:00 p.m.; evening = 7:00 p.m. to 10:00 p.m.; nighttime = 10:00 p.m. to 7:00 a.m.

[2] Noise levels at were not assessed at the 16 foot elevation for liveaboard vessels.

[3] The measured ambient was less than 50, so the minimum assumed ambient of 50 dBA is assumed in accordance with the City of Los Angeles Municipal Code.

[4] Nighttime ambient-noise level estimated from the measured daytime level of 46.8 dBA L_{eq} with an adjustment to nighttime conditions based on the daily noise pattern measured during the long-term measurement at the Al Larson Marina.

dBA = A-weighted decibels; L_{eq} = equivalent noise level; $L_{eq(h)}$ = hourly equivalent noise level; N/A = not applicable.

Table 3.8-9. Community Noise Levels from Amphitheater with Unfavorable Atmospheric Conditions

Receiver/ Location	Time of Day[1]	Ambient	Amphitheater Noise Levels and Comparison to Ambient, $L_{eq(h)}$ dBA			
			5.5-foot Elevation		16-foot Elevation[2]	
			Noise	Overage	Noise	Overage
San Pedro Residences West of the Amphitheater	Daytime	61	70	**9**	69	**8**
	Evening	59	70	**11**	69	**10**
	Nighttime	56	70	**14**	69	**13**
Al Larson Marina	Daytime	56	78	**22**	N/A	N/A
	Evening	54	78	**24**	N/A	N/A
	Nighttime	50	78	**28**	N/A	N/A
Reservation Point	Daytime	55	78	**23**	78	**23**
	Evening	52	78	**26**	78	**26**
	Nighttime	49	78	**29**	78	**29**
Cabrillo Marina	Daytime[3]	50	78	**28**	N/A	N/A
	Evening[3]	50	78	**28**	N/A	N/A
	Nighttime[4]	41	78	**37**	N/A	N/A

Source: AcousticsLab 2022.
[1] Daytime = 7:00 a.m. to 7:00 p.m.; evening = 7:00 p.m. to 10:00 p.m.; nighttime = 10:00 p.m. to 7:00 a.m.
[2] Noise levels were not assessed at the 16 foot elevation for liveaboard vessels.
[3] The measured ambient was less than 50, so the minimum assumed ambient of 50 dBA is assumed in accordance with the City of Los Angeles Municipal Code.
[4] Nighttime ambient-noise level estimated from the measured daytime level of 46.8 dBA L_{eq} with an adjustment to nighttime conditions based on the daily noise pattern measured during the long-term measurement at the Al Larson Marina.
dBA = A-weighted decibels; L_{eq} = equivalent noise level; $L_{eq(h)}$ = hourly equivalent noise level; N/A = not applicable.

Referring to the results in Table 3.8-6 and Table 3.8-9, noise levels from the Amphitheater are predicted to consistently exceed local daytime, evening, and nighttime ambient-noise levels by more than 5 dBA at all of the closest noise-sensitive receivers. Estimated noise increases range from 8 to 37 dBA. The worst-case noise levels for favorable and unfavorable atmospheric conditions are similar, with differences ranging from approximately -2 dBA to +5 dBA. However, a much more noticeable distinction between the two scenarios can be seen when comparing the noise maps for each (refer to Figure 3.8-2, Figure 3.8-3, Figure 3.8-4, and Figure 3.8-5, which are reproduced from pages 11 through 14 of the focused technical study). Under unfavorable atmospheric conditions, the area affected by elevated noise levels would be much larger than under favorable atmospheric conditions. For example, the 68 dBA contour would extend three to four times farther inland to the west under unfavorable atmospheric conditions compared to favorable atmospheric conditions. Amphitheater noise levels would exceed existing ambient-noise levels at noise-sensitive receptors by more than 5 dBA $L_{eq(h)}$. Therefore, the noise impact due to Amphitheater operations would be significant, and mitigation would be required.

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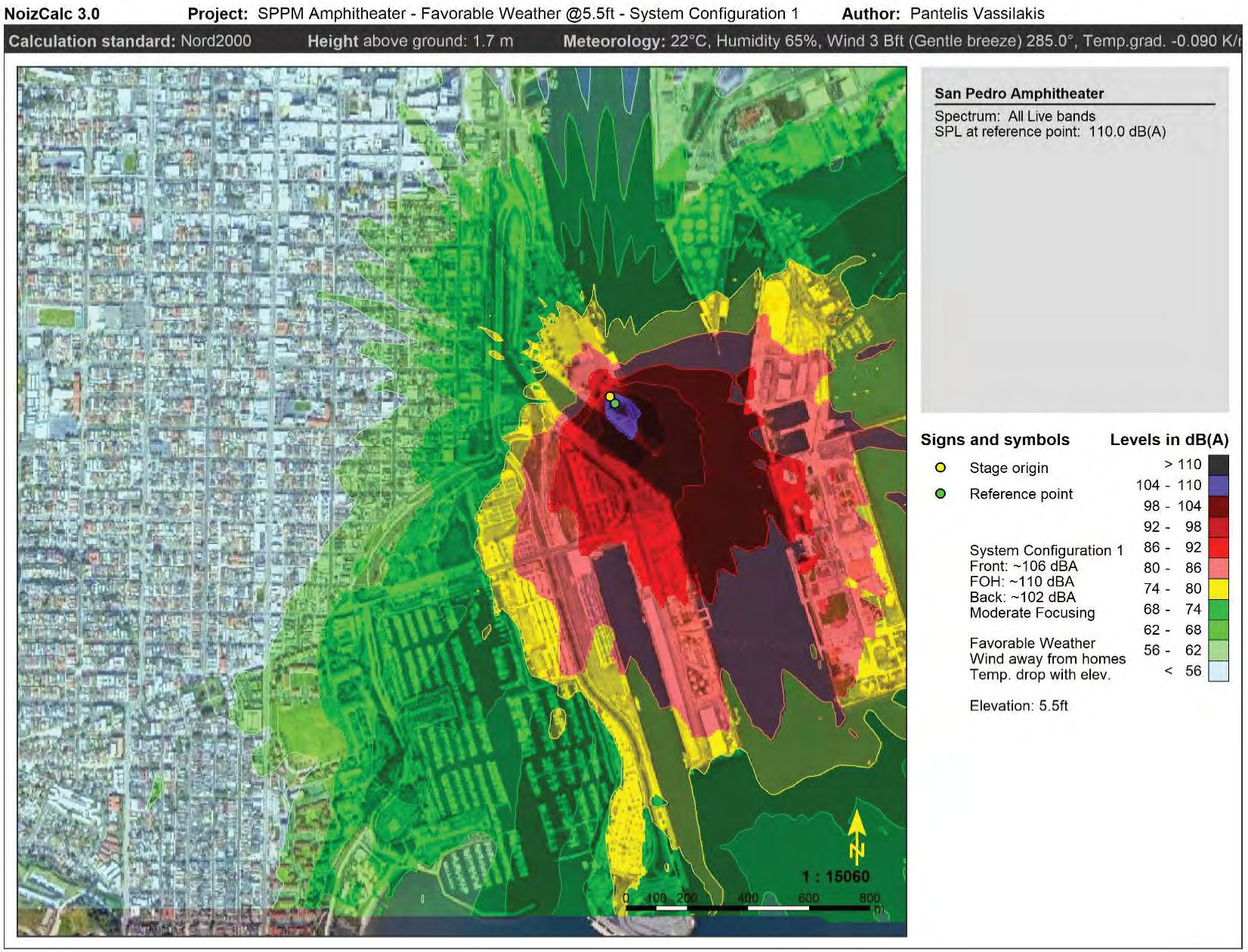

Figure 3.8-2
Noise Contour Maps of Community Noise Levels at 5.5-foot Elevation, from Amphitheater with Favorable Atmospheric Conditions
West Harbor Modification Project

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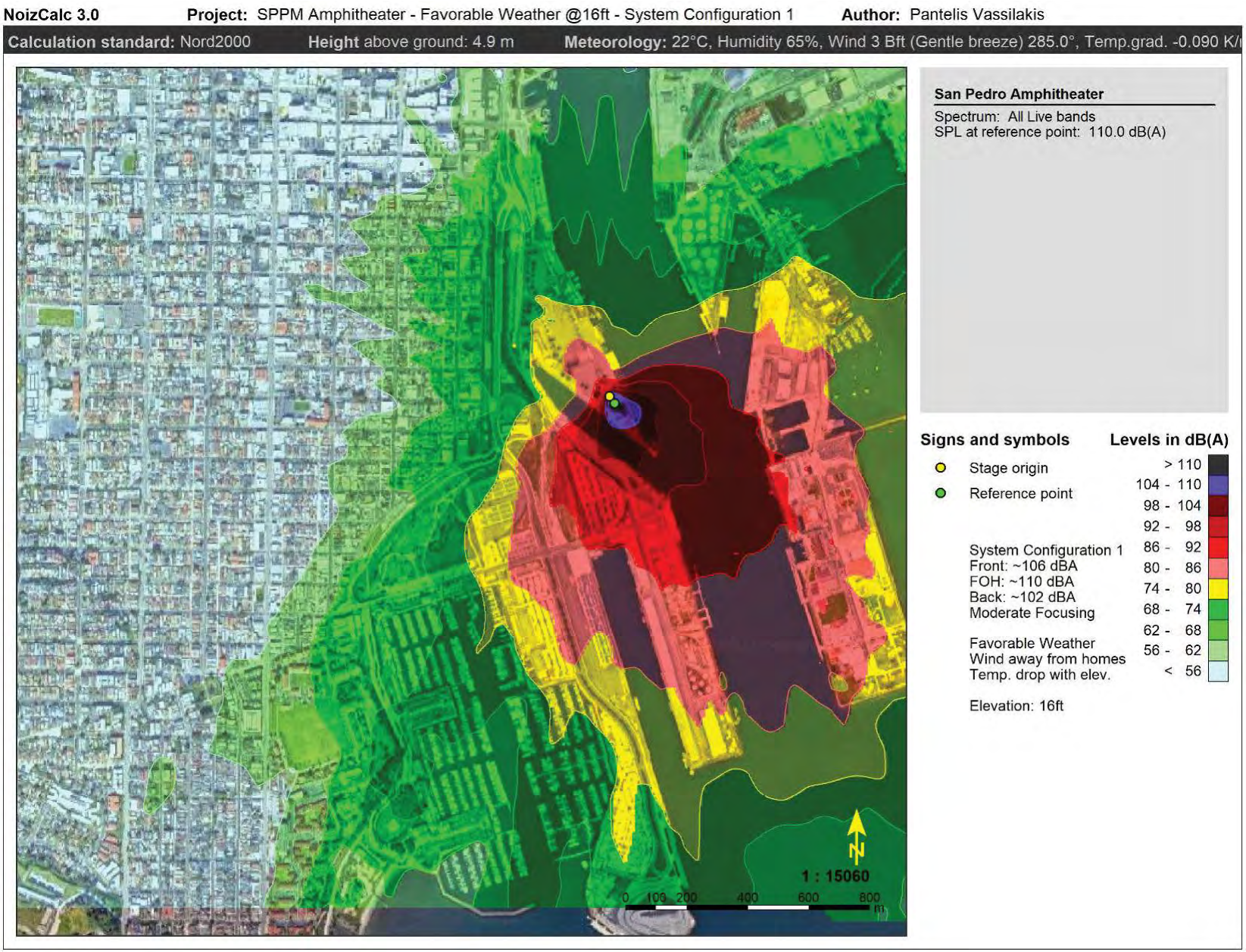

Figure 3.8-3
Noise Contour Maps of Community Noise Levels at 16-foot Elevation, from Amphitheater with Favorable Atmospheric Conditions
West Harbor Modification Project

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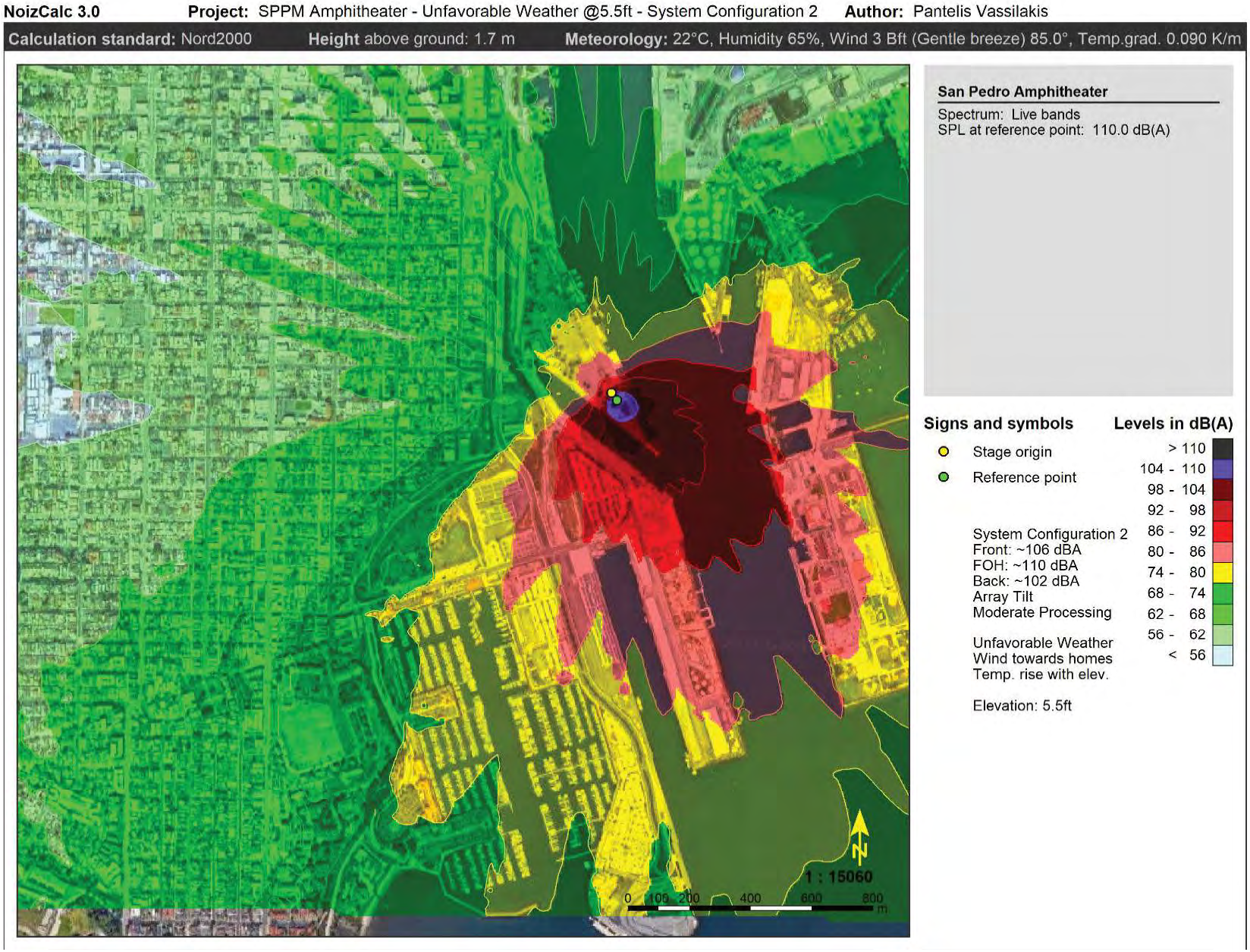

Figure 3.8-4
Noise Contour Maps of Community Noise Levels at 5.5-foot Elevation, from Amphitheater with Unfavorable Atmospheric Conditions
West Harbor Modification Project

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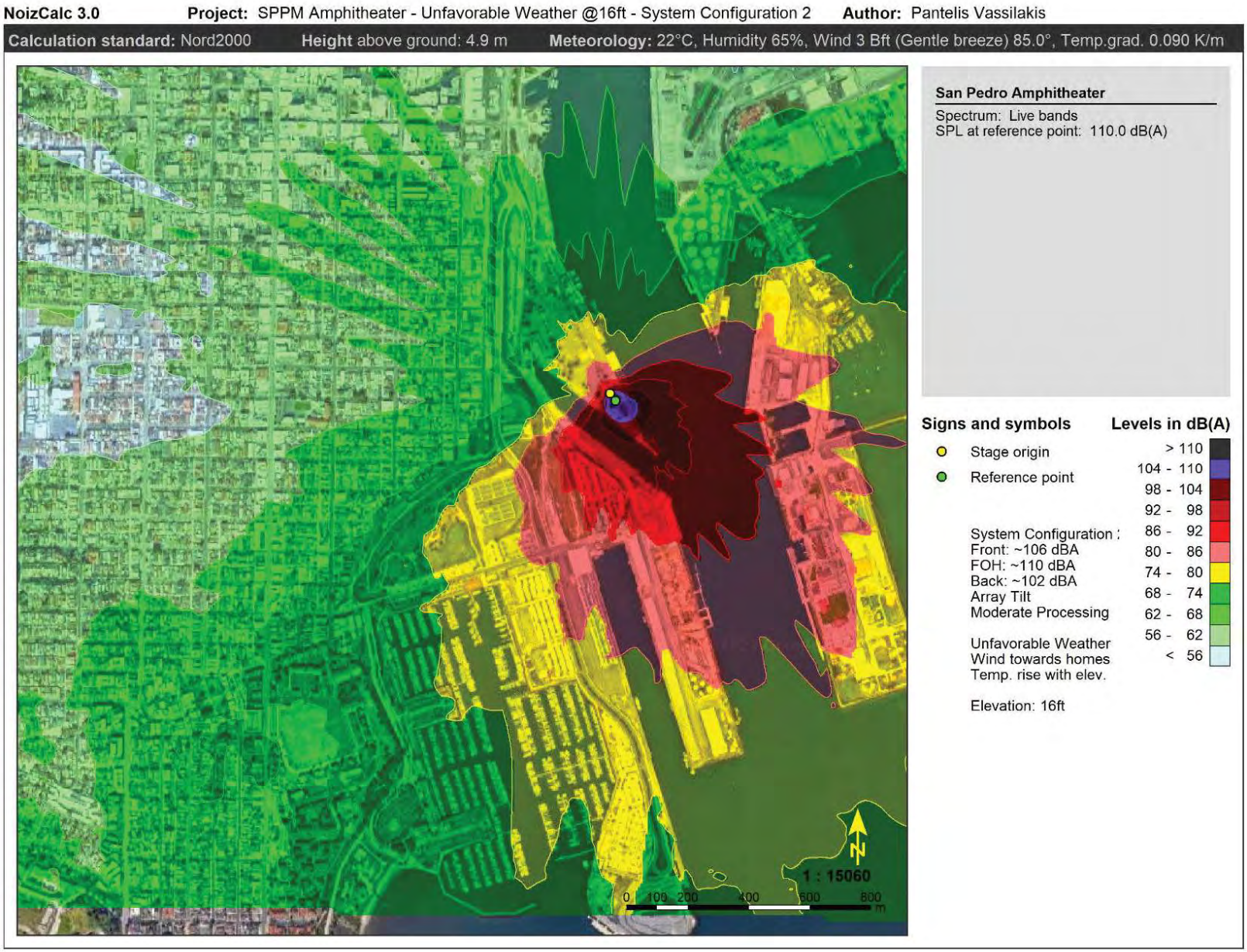

Figure 3.8-5
Noise Contour Maps of Community Noise Levels at 16-foot Elevation, from Amphitheater with Unfavorable Atmospheric Conditions
West Harbor Modification Project

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Fireworks Noise

Fireworks noise was analyzed based on data from the *San Diego Bay and Imperial Beach Oceanfront Fireworks Display Events Project* EIR (ICF 2017), as described in Section 3.8.6.7. *Fireworks Noise*. Complete calculations are provided in Appendix F and are summarized below.

Average noise levels from the Proposed Project were estimated to be approximately 109 dBA L_{eq} at 50 feet over the duration of the fireworks display. The hourly average noise level ($L_{eq[h]}$) would depend on the duration of the fireworks display. Fireworks displays would last up to 20 minutes per show. Table 3.8-10 summarizes the hourly noise level resulting from fireworks displays of various durations.

Table 3.8-10. Reference Hourly Average Fireworks Noise Levels at 50 Feet from Launch Location

Fireworks Display Duration, Minutes	Fireworks Noise Level at 50 Feet, $L_{eq(h)}$ dBA
5	98
10	101
15	102
20	104

Source: Appendix F.
dBA = A-weighted decibels; $L_{eq(h)}$ = hourly equivalent noise level.

Similar to Amphitheater noise, fireworks displays would generate audible noise over a large area. Therefore, it is necessary to summarize the analysis to make meaningful judgments of the impacts without an unnecessary or confusing level of complexity. Fireworks noise levels are predicted at five receiver locations, based on their distance from the proposed fireworks launch location. These receivers include the four residential locations considered in the analysis of Amphitheater noise (San Pedro residences west of the Amphitheater, Al Larson Marina, Reservation Point, and Cabrillo Marina). Because the proposed fireworks launch barge would be approximately 1.25 miles south of the Amphitheater, an additional receiver is included in the fireworks noise analysis to represent the closest residential uses. The closest homes are military housing at Fort MacArthur, approximately 0.9 mile west of the launch barge. Fireworks would not occur during the daytime, so noise levels are only compared to the evening and nighttime ambient-noise levels. To illustrate how the range of possible hourly noise levels would vary depending on the duration of the fireworks displays, the results are reported for both the worst-case (longest) duration of 20 minutes and a shorter duration of 10 minutes. Table 3.8-11 summarizes the results of the analysis. All reported noise levels (ambient and fireworks noise) are rounded to the nearest whole dB, and fractional values are not calculated.

Table 3.8-11. Community Noise Levels from Proposed Fireworks Displays

Receiver/ Location	Time of Day[1a]	Ambient	Noise Levels and Comparison to Ambient, $L_{eq(h)}$ dBA			
			Fireworks Noise		Overage	
			10-Minute Display	20-Minute Display	10-Minute Display	20-Minute Display
San Pedro Residences West of the Amphitheater	Evening	59	58	61	0	2
	Nighttime	56	58	61	2	5
Al Larson Marina	Evening	54	58	61	4	**7**
	Nighttime	50	58	61	**8**	**11**
Reservation Point	Evening	52	64	67	**12**	**15**
	Nighttime	49	64	67	**15**	**18**
Cabrillo Marina	Evening[2]	50	67	70	**17**	**20**
	Nighttime[3]	41	67	70	**26**	**29**
Fort MacArthur Housing	Evening[4]	59	61	64	2	5
	Nighttime[4]	56	61	64	5	**8**

Source: AcousticsLab 2022.
[1] Evening = 7:00 p.m. to 10:00 p.m.; nighttime = 10:00 p.m. to 7:00 a.m.
[2] The measured ambient was less than 50, so the minimum assumed ambient of 50 dBA is assumed in accordance with the City of Los Angeles Municipal Code.
[3] Nighttime ambient-noise level estimated from the measured daytime level of 46.8 dBA L_{eq} with an adjustment to nighttime conditions based on the daily noise pattern measured during the long-term measurement at the Al Larson Marina.
[4] Ambient noise levels assumed to be the same as those measured at the residential neighborhood west of the Amphitheater.
dBA = A-weighted decibels; L_{eq} = equivalent noise level; $L_{eq(h)}$ = hourly equivalent noise level.

Referring to the results in Table 3.8-11, noise levels from fireworks displays are predicted to exceed local evening and nighttime ambient-noise levels for all scenarios except one. Hourly noise levels from 10-minute fireworks displays are not expected to exceed evening ambient-noise levels at San Pedro residences west of the Amphitheater. For all other scenarios, estimated noise increases range from 2 to 29 dBA $L_{eq(h)}$. Noise levels that exceed the existing ambient by more than 5 dBA $L_{eq(h)}$ would be considered a significant impact. Fireworks noise levels are predicted to exceed evening and/or nighttime ambient levels at noise-sensitive receptors by more than 5 dBA $L_{eq(h)}$ for 12 of the 20 analyzed scenarios. Therefore, the noise impact due to fireworks displays would be significant, and mitigation would be required.

Previous Mitigation Measures Applicable to the Proposed Project

MM NOI-1 and **MM NOI-2** from the 2009 SPW EIS/EIR would apply to the Proposed Project.

New Mitigation Measures Applicable to the Proposed Project

The following Project Feature and mitigation measures are recommended to reduce the noise impacts associated with the operation of the proposed Amphitheater. **PF-NOI-1** is included here because it is a key feature of the Proposed Project that would contribute to future noise control at the Project Site.

The requirements of **PF-NOI-1** are consistent with the sound system design assumptions utilized in the environmental noise modeling for the Proposed Project.

PF-NOI-1: Incorporate Sound-Focusing Design into the Amphitheater Sound System.

Design, install, and use a house sound system (i.e., loudspeakers and software processing) with sound-focusing capabilities that provides the allowable front-of-house SPL[8] limits within the Amphitheater, while reducing the amount of noise energy spillage outside the Amphitheater. The loudspeaker system will allow for alternative system-tuning parameters to optimize community noise control under different atmospheric conditions.

MM-NOI-3: Limit Noise Levels within the Amphitheater during all Tier 1 Events.

Limit the maximum front-of-house noise level within the Amphitheater during all Tier 1 Events to a 5-minute A-weighted equivalent noise level of 100 decibels, designated as 100 dBA $L_{eq(5min)}$[9]. The "front-of-house" position is defined as the sound mixing position approximately 95 feet from the Amphitheater stage. The noise level will be monitored and reported in accordance with **MM-NOI-5**, *Monitor Amphitheater Event Noise*, and **MM-NOI-6,** *Noise Reporting Requirements Following Amphitheater Events*. Tier 1 Events are defined as all public or private performance events with amplified sound and intended audiences of more than 500 people. Tier 1 events may include, but are not limited to, Tenant events, public events, leased events, rental events, and other third-party events. Any supporting activities for a Tier 1 Event, such as sound checks and rehearsals, are considered part of the Tier 1 Event and will be subject to the same noise level restrictions, reporting, and penalties, regardless of the presence and/or size of the audience inside the Amphitheater at the time of such activities.

MM-NOI-4: Require all Tier 1 Events to Utilize the House Public Address/Sound Reinforcement System.

All leases, contracts, and/or permits for the use of the Amphitheater will require all Tier 1 Events to use the house sound system with the required noise-mitigation features implemented. Users[10] may provide alternative and/or additional stage sound monitors and consoles, but may not use alternative or additional sound system(s) to provide sound to the audience/front-of-house. All auxiliary sound must go through the house sound console prior to amplification, and the sound console must be controlled by an employee of the Tenant. Tier 2 Events (i.e., small events, attended by 500 people or less, such as community events or viewing parties) will be permitted to use an alternative temporary sound system, provided that the system generates lower noise levels than the house sound system. Under no circumstances will Users be permitted to disable or circumvent any of the noise-control measures required as part of the Amphitheater's lease.

[8] *Sound pressure* is the sound force per unit area, usually expressed in micro Pascals (or micro Newtons 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. *Sound pressure level* is the quantity that is directly measured by a sound level meter

[9] Equivalent Noise Level (L_{eq}) is the average A-weighted noise level during the measurement period. The 5-minute L_{eq} values used for the analyses and assessment of Amphitheater noise levels are denoted as $L_{eq(5min)}$.

[10] A *User* of the Amphitheater is any company or organization, and their associated staff, authorized to operate events at the Amphitheater, including the Tenant and any parties operating under a lease, contract, or permit.

MM-NOI-5: Monitor Amphitheater Noise for all Tier 1 Events.

Noise Monitoring Requirements Prior to Project Occupancy

Prior to the use of the house sound system, the Tenant will construct and maintain a permanent noise-monitoring station at the front-of-house sound mixing location and will demonstrate to the satisfaction of the Port that the noise-monitoring station is functional. The noise monitoring hardware will meet the requirements of an ANSI Class 1 SLM and will be designed for permanent/semipermanent installation in outdoor environments under the full range of local weather conditions, including rain and fog. The noise monitoring station and associated software will be capable of data logging and continuous noise-level averaging over various time periods. At a minimum, the station will be capable of reporting the L_{max} and L_{eq} for each consecutive 1-minute, 5-minute, and 1-hour period, as well as the moving 3-minute and 5-minute average L_{eq}, accurately synchronized with the local time. The station will include an interface so the measurement results can be viewed in real time by staff designated to monitor noise levels. The interface will also be available and visible to the User at the front-of-house sound mixing location[11] so that the User can review noise levels in real time. Maintenance of the noise monitoring equipment will include annual calibration of the noise measurement system. The front-of-house noise monitoring microphone will have an unobstructed line of sight to the sound system loudspeaker arrays.

The funding required to meet all costs associated with the required noise monitoring will be the financial responsibility of the Tenant. Such costs may include, but are not limited to, payment of technicians or contractors involved in the monitoring process and any costs associated with the purchase, installation, repair, maintenance, or replacement of the sound-monitoring equipment, including any software or hardware required to support the measurement and reporting program.

Noise Monitoring Requirements during Tier 1 Events

The noise-monitoring station will be active during all Tier 1 Events. During all Tier 1 Events, the Tenant will designate staff member(s) to monitor noise levels via the noise-monitoring station. The designated staff member(s) will possess at least 1 year of verifiable experience related to noise monitoring and will be knowledgeable in the fundamentals of noise propagation and operation of noise-monitoring equipment. Alternatively, staff with less than 1 year of experience may conduct noise-monitoring duties under the training and supervision of an individual with at least 5 years of relevant noise-monitoring experience who is knowledgeable in the fundamentals of noise propagation and operation of noise-monitoring equipment. The designated staff member(s) will observe current noise-measurement data from the monitoring station to identify potential violations.

If the measured noise approaches levels that indicate a potential violation of the 100 dBA $L_{eq(5min)}$ front-of-house limit, then the Tenant will take immediate action to reduce amplified noise levels. Immediate actions can include, but are not limited to, reduced sound amplification, temporary suspension of sound amplification, transitioning to quieter portions of the performance, and early termination of events if other actions fail to control noise levels. Proactive steps should be taken

[11] The *front-of-house sound mixing location* refers to the location within the audience area in front of the stage where the mixing board/console is located and sound levels are controlled by the User's sound engineer.

to reduce noise levels and avoid the need for noise-related event termination, and any decision to terminate a performance should consider the effect a shutdown may have on the audience.

MM-NOI-6: Noise Reporting Requirements Following Amphitheater Events.

A sound-monitoring data report will be generated for each Tier 1 Event that includes all amplified activities at the Amphitheater. The report should show the measured L_{max} and L_{eq} for each consecutive 1-minute, 5-minute, and 1-hour period throughout each affected day and should indicate the start and end times of each activity (e.g., rehearsal, sound check, performance). Any $L_{eq(5min)}$ that exceeds 100 dBA at the front-of-house monitoring location will be clearly flagged in the report, and a consolidated summary of all noise exceedances (if any) throughout each day will be provided. The report will identify any actions taken to reduce excessive noise levels and should evaluate the results of these actions.

The Tenant will maintain a log of all sound-monitoring data reports to provide a permanent record and document any violations of the sound level limit(s) that occurred. For events that cause any violations of the sound level limits, the sound monitoring log will be furnished to the Port within 48 hours of the conclusion of the event. For all other events, the sound monitoring log will be furnished to the Port at the request of the Executive Director. All sound monitoring data and associated reports will be maintained by the Tenant for a minimum of 5 years after each event day.

MM-NOI-7: Establish a Noise Complaint Hotline and/or Website.

The Tenant will maintain a dedicated noise-complaint hotline and/or website for the proposed Amphitheater. The phone number/web address for the hotline will be published on the Tenant's public website. All noise complaints will be documented and addressed by the Tenant. The Tenant will respond to all complaints, if requested to do so by the complainant, within 48 hours of the complaint or the end of the event that triggered the complaint (whichever occurs last). Complaint logs will be provided to the LAHD on an annual basis or as requested by the Executive Director.

MM-NOI-8: Enforce a Curfew and Restrict the Hours of Use and Duration for the Amphitheater Amplified Sound System

All events will conclude no later than 10:30 p.m. on all nights, unless prior written permission has been granted by the Executive Director or designated Deputy. In no case, however, will a performance extend past 11:00 p.m. The use of the sound system at the Amphitheater will start no earlier than 8:00 a.m. The Tenant is responsible for recording event start and end times and logs will be provided to the LAHD on an annual basis or as requested by the Executive Director.

On any Tier 1 Event day that includes a public or private performance, the total use of amplified sound equipment for all activities (e.g., rehearsal, soundcheck, performance) will be limited to a cumulative total of 12 hours. Sound amplification may occur over multiple distinct intervals, as long as the sum of those intervals is 12 hours or less.

On non-performance days, the total use of amplified sound equipment in preparation for Tier 1 Events will be limited to no more than a cumulative total of up to 4 hours.

MM-NOI-9: Fines for Non-Compliance.

The maximum permissible front-of-house noise level within the Amphitheater is a 5-minute A-weighted equivalent noise level of 100 decibels, designated as 100 dBA $L_{eq(5min)}$. For the purposes of assessing compliance, the noise level will be assessed for each discrete consecutive 5-minute period starting at regular clock intervals (e.g., 8:00 p.m., 8:05 p.m., 8:10 p.m.). Every 5-minute interval during which the noise level exceeds 100 dBA $L_{eq(5min)}$ will be considered one Offense, with the exception that the front-of-house noise limit does not apply to noise from fireworks that are operated in compliance with the Amphitheater lease and all other applicable permits and regulations.

The noise monitoring station (as defined in **MM-NOI-5**) would include an interface that allows designated noise monitoring staff member(s) to view measured noise levels in real time. If sound levels exceed 100 dBA, sustained over any 3-minute interval, then the designated noise monitoring staff member(s) will issue the User an official warning to lower the sound levels. An official warning will be presumed to have been issued when sound levels exceed 100 dBA, sustained over any 3-minute interval, at the 3-minute mark. If additional violations occur, additional warnings and monetary penalties will apply as set forth below:

- **First Offense**: A notification of Offense, including a second warning to lower sound levels, will be issued during the performance if sound levels exceed 100 dBA $L_{eq(5min)}$ over any discrete consecutive 5-minute period starting at regular clock intervals (e.g., 8:00 p.m., 8:05 p.m., 8:10 p.m., etc.).
- **Second Offense**: A $5,000 fine.
- **Third Offense**: A $7,500 fine.
- **Subsequent Offenses**: $10,000 per violation.
- **Curfew Penalty**: A penalty of $1,000 per minute for the first 5 minutes past the applicable curfew for the event (10:30 p.m. or as established in **MM-NOI-8**). A penalty of $5,000 per minute will be assessed thereafter.

However, should sound levels exceed 105 dBA $L_{eq(5min)}$ at any time, there will be no warnings to lower the sound, and an immediate fine of $10,000 will be assessed to the User and for any subsequent violations that also exceed 105 dBA $L_{eq(5min)}$.

MM-NOI-10: Restrict the Total Number of Tier 1 Event Performance Days to 100 per Year.

The total number of Tier 1 Event performance days will not exceed 100 per calendar year. For Tier 1 Event performances that run over multiple days, each calendar day that includes a performance will count against the allowed total. For example, a 3-night run by the same artist would count as three separate Tier 1 Event performance days, or a 2-day jazz festival would count as two separate Tier 1 Event performance days. Soundchecks or rehearsals on non-performance days will not count against the allowed total, provided they comply with all other applicable restrictions (including noise levels, curfews, and durations).

The following mitigation measures are recommended to reduce the noise impacts associated with the proposed fireworks displays.

MM-NOI-11: Restrict the Total Number of Firework Displays to 25 per Year.

The total number of firework displays will not exceed 25 per calendar year.

MM-NOI-12: Limit the Duration of All Firework Displays.

The duration of all firework displays will be no longer than 20 minutes on all nights, unless prior written permission has been granted by the Executive Director or designated Deputy. The Tenant is responsible for recording firework display start and end times, and logs will be provided to the LAHD on an annual basis or as requested by the Executive Director.

MM-NOI-13: Limit the Use of "Salute" Fireworks.

Fireworks display events will not use concussion type, non-color shells such as "salutes" (*salute* fireworks, also known as *maroon fireworks*, are fireworks designed to make a very loud bang, or "report," and an intense flash of light) during the initial 25 percent of the duration of any display (e.g., within the first 5 minutes of a 20-minute display).

MM-NOI-14: Replace Fireworks Displays with Drone Displays.

To the extent permitted by Amphitheater programming, available technology, and all applicable legal, safety, and permit requirements, replace firework displays with lighted drone displays.

Significance After Mitigation

Implementation of **MM-NOI-1** and **MM-NOI-2** would reduce community noise levels from Proposed Project construction, provide advance notification of construction activities to nearby residents, and place limits on the times when construction activity can occur. Considering the distances between the construction noise sources and receivers, **MM-NOI-1** and **MM-NOI-2** would not be sufficient to reduce the projected increase in the ambient-noise level to the point where it would no longer cause a substantial increase. Therefore, construction noise impacts would remain significant and unavoidable after mitigation.

Implementation of **PF-NOI-1** and **MM-NOI-3**–**MM-NOI-10** would reduce community noise levels from Amphitheater events and provide a reporting and enforcement procedure to ensure that noise-reduction measures are implemented consistently. Implementation of **MM-NOI-3** would lead to a 10 dBA reduction in front-of-house noise levels relative to the levels considered in the analysis (i.e., reducing front-of-house levels from 110 dBA to 100 dBA $L_{eq(5min)}$). For a given set of conditions (i.e., sound system setup and atmospheric conditions) a 10 dBA reduction in front-of-house sound levels will translate directly to a 10 dBA reduction in noise levels in the community surrounding the Amphitheater. Applying the 10 dBA reduction to the Amphitheater noise levels reported in Table 3.8-8 and Table 3.8-9 leads to the reduced noise levels shown in Table 3.8-12 and Table 3.8-13. With mitigation, Amphitheater noise levels at residences in San Pedro, west of the Proposed Project, would not exceed daytime ambient-noise levels and would exceed evening and nighttime ambient levels by less than 5 dBA. Overall, the mitigation would drastically reduce the number of residences in San Pedro west of the Project Site that would be affected by Amphitheater noise levels in excess of ambient levels. However, even with mitigation, Amphitheater noise levels would continue to exceed

ambient-noise levels by more than 5 dBA Leq(h) at multiple noise-sensitive receivers, including liveaboard vessels in Al Larson Marina (exceedances of 12 to 18 dBA Leq(h), depending on the time of day), residences at Reservation Point (exceedances of 13 to 21 dBA Leq(h), depending on the atmospheric conditions and time of day), and liveaboard vessels in Cabrillo Marina (exceedances of 13 to 27 dBA Leq(h), depending on the atmospheric conditions and time of day). Therefore, Amphitheater noise impacts would remain significant and unavoidable after mitigation.

Implementation of **MM-NOI-11** and **MM-NOI-12** would limit community noise impacts from fireworks by controlling the maximum number of events per year and ensuring that each event does not exceed the 20-minute duration assumed in the analysis. **MM-NOI-13** would prevent the use of the loudest types of fireworks at the beginning of a fireworks display, which would reduce the startling effects caused by the sudden occurrence of the highest noise levels. However, these three measures would have a negligible effect on the overall noise levels from any individual fireworks display. If fully implemented, **MM-NOI-14** would substantially reduce noise levels and eliminate the significant noise impacts associated with fireworks displays; however, it is unclear whether it would be feasible to replace all the proposed fireworks displays with drone displays. Therefore, fireworks noise impacts would remain significant and unavoidable after mitigation.

Table 3.8-12. Mitigated Community Noise Levels from Amphitheater with Favorable Atmospheric Conditions

Receiver/ Location	Time of Day[1]	Ambient	Amphitheater Noise Levels and Comparison to Ambient, $L_{eq(h)}$ dBA					
			5.5-foot Elevation			16-foot Elevation[2]		
			Noise	Reduction due to Mitigation	Overage	Noise	Reduction due to Mitigation	Overage
San Pedro Residences West of the Project	Day	61	59	10	0	59	10	0
	Evening	59	59	10	0	59	10	0
	Night	56	59	10	3	59	10	3
Al Larson Marina	Day	56	68	10	**12**	N/A	N/A	N/A
	Evening	54	68	10	**14**	N/A	N/A	N/A
	Night	50	68	10	**18**	N/A	N/A	N/A
Reservation Point	Day	55	70	10	**15**	70	10	**15**
	Evening	52	70	10	**18**	70	10	**18**
	Night	49	70	10	**21**	70	10	**21**
Cabrillo Marina	Day[3]	50	63	10	**13**	N/A	N/A	N/A
	Evening[3]	50	63	10	**13**	N/A	N/A	N/A
	Night[4]	41	63	10	**22**	N/A	N/A	N/A

Source: Appendix F.

[1]Daytime = 7:00 a.m. to 7:00 p.m.; evening = 7:00 p.m. to 10:00 p.m.; nighttime = 10:00 p.m. to 7:00 a.m.

[2] Noise levels were not assessed at the 16-foot elevation for liveaboard vessels.

[3] The measured ambient was less than 50 dBA, so the minimum assumed ambient of 50 dBA is assumed in accordance with the City of Los Angeles Municipal Code.

[4] Nighttime ambient-noise level estimated from the measured daytime level of 46.8 dBA L_{eq}, with an adjustment to nighttime conditions based on the daily noise pattern measured during the long-term measurement at the Al Larson Marina.

dBA = A-weighted decibels; L_{eq} = equivalent noise level; $L_{eq(h)}$ = hourly equivalent noise level; N/A = not applicable.

Table 3.8-13. Mitigated Community Noise Levels from Amphitheater with Unfavorable Atmospheric Conditions

Receiver/ Location	Time of Day[1]	Ambient	Amphitheater Noise Levels and Comparison to Ambient, $L_{eq(h)}$ dBA					
			5.5-foot Elevation			16-foot Elevation[2]		
			Noise	Reduction due to Mitigation	Overage	Noise	Reduction due to Mitigation	Overage
San Pedro Residences West of the Project	Day	61	60	10	0	59	10	0
	Evening	59	60	10	1	59	10	0
	Night	56	60	10	4	59	10	3
Al Larson Marina	Day	56	68	10	12	N/A	N/A	N/A
	Evening	54	68	10	**14**	N/A	N/A	N/A
	Night	50	68	10	**18**	N/A	N/A	N/A
Reservation Point	Day	55	68	10	**13**	68	10	**13**
	Evening	52	68	10	**16**	68	10	**16**
	Night	49	68	10	**19**	68	10	**19**
Cabrillo Marina	Day[3]	50	68	10	**18**	N/A	N/A	N/A
	Evening[3]	50	68	10	**18**	N/A	N/A	N/A
	Night[4]	41	68	10	**27**	N/A	N/A	N/A

Source: Appendix F.

[1] Daytime = 7:00 a.m. to 7:00 p.m.; evening = 7:00 p.m. to 10:00 p.m.; nighttime = 10:00 p.m. to 7:00 a.m.

[2] Noise levels were not assessed at the 16-foot elevation for liveaboard vessels.

[3] The measured ambient was less than 50, so the minimum assumed ambient of 50 dBA is assumed in accordance with the City of Los Angeles Municipal Code.

[4] Nighttime ambient-noise level estimated from the measured daytime level of 46.8 dBA L_{eq}, with an adjustment to nighttime conditions based on the daily noise pattern measured during the long-term measurement at the Al Larson Marina.

dBA = A-weighted decibels; L_{eq} = equivalent noise level; $L_{eq(h)}$ = hourly equivalent noise level; N/A = not applicable.

Impact NOI-2. Would the Proposed Project generate excessive groundborne vibration or groundborne noise levels?

Summary of 2009 SPW EIS/EIR Findings

The 2009 SPW EIS/EIR determined that vibration impacts would not be an issue for the SPW Project and its alternatives. Pile driving during construction was identified as the only major vibration source associated with the SPW Project, and the distances between proposed pile driving and the closest sensitive receptors (220 to 1,380 feet) were far enough that no significant impacts were predicted and, as such, no related mitigation measures were required.

Summary of 2016 SPPM Addendum Findings

The 2016 SPPM Addendum found that the SPPM Project would result in similar construction activities that would result in similar, previously identified impacts. The SPPM Project was determined not to result in new significant impacts, substantially increase the severity of a previously analyzed impact, nor require the implementation of new mitigation measures that were not already evaluated in the 2009 SPW EIS/EIR. Therefore, no significant vibration impacts were identified, and no related mitigation measures were required.

Summary of 2019 SPPM Addendum Findings

The 2019 SPPM Addendum addressed a lease extension for the SPW Project. It determined that the lease extension would not result in any changes to the proposed operation and vibration-generating activities of the SPW Project. As such, the revised Proposed Project would not cause any change to the impact determination for groundborne vibration or groundborne noise levels made in the 2009 SPW EIS/EIR and 2016 SPPM Addendum for the SPPM Project.

Impacts of the Proposed Project

The Proposed Project would not introduce any new sources of groundborne vibration, when compared to those analyzed in the 2009 SPW EIS/EIR. With one exception, the Proposed Project is not anticipated to require any new pile driving beyond what was evaluated in the 2009 SPW EIS/EIR. It is possible that the proposed larger Ferris wheel may require pile driving. The Ferris wheel would be approximately 1,000 feet from the nearest residential structures. At this distance, groundborne vibration would not be perceptible and would pose no risk of building damage. Furthermore, this is well within the distance range analyzed in the 2009 SPW EIS/EIR which evaluated pile driving occurring within 220 to 1,380 feet of the closest noise-sensitive receptors and found no impacts related to groundborne vibration or groundborne noise. As such, the Proposed Project would not result in new significant groundborne vibration or groundborne noise impacts, substantially increase the severity of a previously analyzed impact, nor require the implementation of new mitigation measures that were not already evaluated in the 2009 SPW EIS/EIR.

Previous Mitigation Measures Applicable to the Proposed Project

None.

New Mitigation Measures Applicable to the Proposed Project

None required.

Significance After Mitigation

Because groundborne vibration from the Proposed Project would not be perceptible and would pose no risk of building damage, impacts would be less than significant. The Proposed Project would not result in any new significant impacts, substantially increase in the severity of a previously analyzed impact, nor require the implementation of new mitigation measures related to groundborne vibration and groundborne noise.

Impact NOI-3. Would the Proposed Project be located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?

Summary of 2009 SPW EIS/EIR Findings

The 2009 SPW EIS/EIR determined that the nearest airport was the Torrance Municipal Airport, which was more than 4 miles from the SPW Project. Therefore, there would be no significant impacts related to airport noise for the SPW Project or any of the alternatives and, as such, no related mitigation measures were required.

Summary of 2016 SPPM Addendum Findings

The SPPM Project was determined not to result in new significant impacts, substantially increase the severity of a previously analyzed impact, nor require the implementation of new mitigation measures that were not already evaluated in the 2009 SPW EIS/EIR. Therefore, there would be no significant impacts related to airport noise for the SPPM Project or any of the alternatives and, as such, no related mitigation measures were required.

Summary of 2019 SPPM Addendum Findings

The 2019 SPPM Addendum addressed a lease extension for the SPW Project. It determined the lease extension would not result in any changes to the proposed operation of the previously approved project. As such, the SPPM Project would not cause any change to the impact determination for airport and airstrip noise levels made in the 2009 SPW EIS/EIR and 2016 SPPM Addendum.

Impact of the Proposed Project

As identified in the 2009 SPW EIS/EIR the nearest airport is the Torrance Municipal Airport, which is more than 4 miles from the Project Site. Therefore, there would be no significant impacts related to airport noise for the Proposed Project. As such, the Proposed Project would not result in new significant airport noise impacts, substantially increase the severity of a previously analyzed airport noise impact, nor require new airport noise mitigation measures that were not already evaluated in the 2009 SPW EIS/EIR.

Previous Mitigation Measures Applicable to the Proposed Project

None.

New Mitigation Measures Applicable to the Proposed Project

None required.

Significance After Mitigation

The Proposed Project would not lead to any new significant impacts, nor a substantial increase in the severity of previously identified significant impacts related to airport and airstrip noise levels. Because there are no significant impacts related to airport and airstrip noise, no mitigation measures are proposed for this potential impact.

3.8.9 Alternatives Impact Determination

3.8.9.1 Alternative 1 – No Project Alternative

Alternative 1 is defined as the No Project alternative, where conditions would remain based on the previously approved projects in both the 2009 SPW EIS/EIR and 2016 EIR Addendum.

The 2009 SPW EIS/EIR and 2016 SPPM Addendum determined that construction noise, including from pile driving for the waterfront promenade within Ports O'Call, heavy equipment required to construct the parking areas within the Ports O'Call, and construction of San Pedro Park, would exceed ambient-noise levels by 5 dB or more and cause significant and unavoidable impacts even with implementation of mitigation measures. Additionally, there would be significant operational traffic-noise impacts along Miner Street, south of 22nd Street, and no feasible mitigation measures would reduce impacts to less than significant. Therefore, Alternative 1 would have significant and unavoidable impacts, which is the same overall conclusion to that of the Proposed Project. However, Alternative 1 would avoid the Proposed Project's significant and unavoidable noise impacts from the Amphitheater operations and fireworks displays.

3.8.9.2 Alternative 2 – Half-Capacity Amphitheater Alternative

Alternative 2 includes an Amphitheater with a similar build to that of the Proposed Project, but with an anticipated maximum capacity of 3,100 patrons per event. Overall construction activities for Alternative 2 would be very similar to those for the Proposed Project and would result in the same significant and unavoidable construction noise impacts. Additionally, the operation of the Amphitheater and associated fireworks events would cause significant and unavoidable noise impacts even with the implementation of mitigation measures because the reduction of the seating capacity would not significantly reduce the level of concert noise produced. Therefore, Alternative 2 would cause similar significant and unavoidable noise impacts as those predicted for the Proposed Project.

3.8.10 Summary of Impacts and Mitigation

Implementation of the 2009 SPW EIS/EIR's **MM-NOI-1** and **MMNOI-2**, along with **PF-NOI-1** and **MM-NOI-3–MM-NOI-14**, would reduce potential impacts to the extent feasible. However, impacts

would remain significant and unavoidable. Table 3.8-14 presents a summary of impact determinations for the Proposed Project that are related to noise and vibration.

Table 3.8-14. Summary Matrix of Potential Noise Impacts and Mitigation Measures for the Proposed Project

Environmental Impacts	Impact Determination	Project Feature and Mitigation Measures	Impact After Mitigation
Proposed Project			
Impact NOI-1: Would the Proposed Project generate a substantial temporary or permanent increase in ambient-noise levels in the vicinity of the project in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	The 2009 SPW EIS/ EIR finding of a significant impact remains unchanged for the Proposed Project.	Mitigation measures **MM-NOI-1** and **MM-NOI-2** from the 2009 SPW EIS/EIR would apply to the Proposed Project. New mitigation measures **MM-NOI-3** through **MM-NOI-14**, as well as **PF-NOI-1** would also apply to the Proposed Project.	No new or substantially more severe significant impacts would occur. Implementation **PF-NOI-1** and **MM NOI-1** through **MM-NOI-14** would reduce impacts, but impacts would remain significant.
Impact NOI-2: Would the Proposed Project generate excessive groundborne vibration or groundborne noise levels?	The 2009 SPW EIS/ EIR finding of a less-than-significant impact remains unchanged for the Proposed Project.	No mitigation is required.	No new or substantially more severe significant impacts would occur.
Impact NOI-3: Would the Proposed Project be located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	The 2009 SPW EIS/ EIR finding of a less-than-significant impact remains unchanged for the Proposed Project.	No mitigation is required.	No new or substantially more severe significant impacts would occur.

Environmental Impacts	Impact Determination	Project Feature and Mitigation Measures	Impact After Mitigation
Alternative 1 – No Project Alternative			
Impact NOI-1: Would the Proposed Project generate a substantial temporary or permanent increase in ambient-noise levels in the vicinity of the project in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	The 2009 SPW EIS/ EIR finding of a significant impact remains unchanged for Alternative 1.	Mitigation measures **MM-NOI-1** and **MM-NOI-2** from the 2009 SPW EIS/EIR would apply to Alternative 1.	No new or substantially more severe significant impacts would occur. Implementation **PF-NOI-1** and **MM NOI-1** through **MM-NOI-14** would reduce impacts, but impacts would remain significant.
Impact NOI-2: Would the Proposed Project generate excessive groundborne vibration or groundborne noise levels?	The 2009 SPW EIS/ EIR finding of a less-than-significant impact remains unchanged for Alternative 1.	No mitigation is required.	No new or substantially more severe significant impacts would occur.
Impact NOI-3: Would the Proposed Project be located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	The 2009 SPW EIS/ EIR finding of a less-than-significant impact remains unchanged for Alternative 1.	No mitigation is required.	No new or substantially more severe significant impacts would occur.
Alternative 2 – Half-Capacity Amphitheater Alternative			
Impact NOI-1: Would the Proposed Project generate a substantial temporary or permanent increase in ambient-noise levels in the vicinity of the project in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	The 2009 SPW EIS/ EIR finding of a significant impact remains unchanged for Alternative 2.	Mitigation measures **MM-NOI-1** and **MM-NOI-2** from the 2009 SPW EIS/EIR would apply to Alternative 2. New mitigation measures **MM-NOI-3** through **MM-NOI-14**, as well as **PF-NOI-1** would also apply to Alternative 2.	No new or substantially more severe significant impacts would occur. Implementation **PF-NOI-1** and **MM NOI-1** through **MM-NOI-14** would reduce impacts, but impacts would remain significant.

Environmental Impacts	Impact Determination	Project Feature and Mitigation Measures	Impact After Mitigation
Impact NOI-2: Would the Proposed Project generate excessive groundborne vibration or groundborne noise levels?	The 2009 SPW EIS/ EIR finding of a less-than-significant impact remains unchanged for Alternative 2.	No mitigation is required.	No new or substantially more severe significant impacts would occur.
Impact NOI-3: Would the Proposed Project be located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	The 2009 SPW EIS/ EIR finding of a less-than-significant impact remains unchanged for Alternative 2.	No mitigation is required.	No new or substantially more severe significant impacts would occur.

EIR = Environmental Impact Report; EIS = Environmental Impact Statement; SPW = San Pedro Waterfront

3.8.11 Mitigation Monitoring Program

Table 3.8-15 summarizes the applicable project feature and mitigation measures for the Proposed Project.

Table 3.8-15. Mitigation Monitoring Program

PF-NOI-1: Incorporate Sound-Focusing Design into the Amphitheater Sound System. Design, install, and use a house sound system (i.e., loudspeakers and software processing) with sound-focusing capabilities that provides the allowable front-of-house sound pressure level (SPL)[12] limits within the Amphitheater, while reducing the amount of noise energy spillage outside the Amphitheater. The loudspeaker system will allow for alternative system-tuning parameters to optimize community noise control under different atmospheric conditions.	
Timing	During design, specification, and construction of the proposed Amphitheater.
Methodology	This measure will be incorporated into contract specifications for the design, installation, and operation of the Amphitheater sound system. Any sound system design team working on the project will include an individual with experience in sound-focusing design and implementation. The Tenant and/or their sound system designer will work with manufacturer(s) who offer hardware, software, and expertise capable of addressing the project's sound-focusing requirements through permanent or removable sound system installations. The Tenant, sound system designer, and manufacturer(s) will review the focused technical study (AcousticsLab 2022**)**, *Music Performance Community Noise Level Estimation and Assessment,* to understand the intent and design parameters of the required system. The system will be installed per

[12] *Sound pressure* is the sound force per unit area, usually expressed in micro Pascals (or micro Newtons 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. *Sound pressure level* is the quantity that is directly measured by a sound level meter

	the manufacturer's specifications and tested to ensure it is operating within specified parameters for both favorable and unfavorable atmospheric conditions. Tenant staff will be trained by the manufacturer in the proper use of the system to minimize noise energy spillage outside the Amphitheater under the expected range of operational and atmospheric conditions at the Project Site.
MM-NOI-1: Construct temporary noise barriers, muffle and maintain construction equipment, prohibit idling, locate equipment, use quiet construction equipment, and notify residents. The following will reduce impact of noise from construction activities. a) **Temporary Noise Barriers**: When construction is occurring within 500 feet of a residence or park, temporary noise barriers (solid fences or curtains) will be located between noise-generating construction activities and sensitive receivers. b) **Construction Equipment**: All construction equipment powered by internal combustion engines will be properly muffled and maintained. c) **Idling Prohibitions**: Unnecessary idling of internal combustion engines near noise sensitive areas will be prohibited. d) **Equipment Location**: All stationary noise-generating construction equipment, such as air compressors and portable power generators, will be located as far as practical from existing noise sensitive land uses. e) **Quiet Equipment Selection**: Select quiet construction equipment whenever possible. Comply where feasible with noise limits established in the City's Noise Ordinance. f) **Notification**: Notify residents within 500 feet of the Project Site of the construction schedule in writing.	
Timing	Throughout all construction phases.
Methodology	This measure will be incorporated into contract specifications for all construction work to reduce noise impacts. The contractor(s) will submit an Environmental Compliance Plan for review and approval by LAHD prior to beginning of any construction activity. The contractor will adhere to these specifications and Compliance Plan throughout construction phases. Enforcement will include oversight by the LAHD project/construction manager or designated building inspectors to ensure compliance with contract specifications.
MM-NOI-2. Construction Hours: Construction activities for the Proposed Project would not exceed the ambient-noise level by 5 dBA at a noise sensitive use between the hours of 6:00 p.m. and 7:00 a.m., Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday. If extended construction hours are needed during weekdays under special circumstances, LAHD and the contractor will provide at least 72 hours' notice to sensitive receptors within 0.5 miles of the construction area. Under no circumstances will construction hours exceed the range prescribed by the City of Los Angeles Municipal Code.	
Timing	During construction.
Methodology	This measure will be incorporated into contract specifications for all construction work to reduce noise impacts. The contractor(s) will submit an Environmental Compliance Plan for review and approval by LAHD prior to beginning of any construction activity. The contractor will adhere to these specifications and Compliance Plan throughout construction phases. Enforcement will include oversight by the LAHD project/construction manager or designated building inspectors to ensure compliance with contract specifications.
MM-NOI-3: Limit Noise Levels within the Amphitheater during all Tier 1 Events. Limit the maximum front-of-house noise level within the Amphitheater during all Tier 1 Events to a 5-minute A-weighted equivalent noise level of 100 decibels, designated as 100 dBA $L_{eq(5min)}$[1]. The *front-of-house* position is defined as the sound mixing position approximately 95 feet from the Amphitheater stage.	

The noise level will be monitored and reported in accordance with **MM-NOI-5**, *Monitor Amphitheater Event Noise*, and **MM-NOI-6**, *Noise Reporting Requirements Following Amphitheater Events*. Tier 1 Events are defined as all public or private performance events with amplified sound and intended audiences of more than 500 people. Tier 1 events may include, but are not limited to, Tenant events, public events, leased events, rental events, and other third-party events. Any supporting activities for a Tier 1 Event, such as sound checks and rehearsals, are considered part of the Tier 1 Event and will be subject to the same noise level restrictions, reporting, and penalties, regardless of the presence and/or size of the audience inside the Amphitheater at the time of such activities.

[1] *Equivalent Noise Level* (L_{eq}) is the average A-weighted noise level during the measurement period. The 5-minute L_{eq} values used for the analyses and assessment of Amphitheater noise levels are denoted as $L_{eq(5min)}$.

Timing	During the operation of the proposed Amphitheater.
Methodology	This measure will be implemented as described in **MM-NOI-3**, **MM-NOI-4**, **MM-NOI-5**, and **MM-NOI-6**. The requirements for limiting, monitoring, and reporting Amphitheater noise levels will be incorporated into the lease agreement(s) with the Amphitheater Tenant. The requirement to limit noise levels will also be included in all leases, contracts, permits, or other agreements made with all Users of the Amphitheater (e.g., musical acts, promoters, event organizers)

MM-NOI-4: Require all Tier 1 Events to Utilize the House Public Address/Sound Reinforcement System. All leases, contracts, and/or permits for the use of the Amphitheater will require all Tier 1 Events to use the house sound system with the required noise-mitigation features implemented. Users[2] may provide alternative and/or additional stage sound monitors and consoles, but may not use alternative or additional sound system(s) to provide sound to the audience/front-of-house. All auxiliary sound must go through the house sound console prior to amplification, and the sound console must be controlled by an employee of the Tenant. Tier 2 Events (i.e., small events, attended by 500 people or less, such as community events or viewing parties) will be permitted to use an alternative temporary sound system, provided that the system generates lower noise levels than the house sound system. Under no circumstances will Users be permitted to disable or circumvent any of the noise-control measures required as part of the Amphitheater's lease.

[2] A *User of the Amphitheater* is any company or organization, and their associated staff, authorized to operate events at the Amphitheater, including the Tenant and any parties operating under a lease, contract, or permit.

Timing	During the operation of the proposed Amphitheater.
Methodology	The requirement to use the house public address system will be included in all leases, contracts, permits, or other agreements made with all Users of the Amphitheater (e.g., musical acts, promoters, event organizers) for Tier 1 events. The Amphitheater Tenant will be responsible for ensuring the compliance of all Amphitheater Users.

MM-NOI-5: Monitor Amphitheater Noise for all Tier 1 Events.

Noise Monitoring Requirements Prior to Project Occupancy

Prior to the use of the house sound system, the Tenant will construct and maintain a permanent noise-monitoring station at the front-of-house sound mixing location and will demonstrate to the satisfaction of the Port that the noise-monitoring station is functional. The noise monitoring hardware will meet the requirements of an ANSI Class 1 SLM and will be designed for permanent/semipermanent installation in outdoor environments under the full range of local weather conditions, including rain and fog. The noise monitoring station and associated software will be capable of data logging and continuous noise-level averaging over various time periods. At a minimum, the station will be capable of reporting the L_{max} and L_{eq} for each consecutive 1-minute, 5-minute, and 1-hour period, as well as the moving 3-minute and 5-minute average L_{eq}, accurately synchronized with the local time. The station will include an interface so the measurement results can be viewed in real time by staff designated to monitor noise levels. The interface will also be available and visible to the User at the front-of-house sound mixing location[3] so that the User can review noise levels in real time. Maintenance of the noise monitoring equipment will include annual calibration of the noise measurements system. The front-of-house noise monitoring microphone will have an unobstructed line of sight to the sound system loudspeaker arrays.

The funding required to meet all costs associated with the required noise monitoring will be the financial responsibility of the Tenant. Such costs may include, but are not limited to, payment of technicians or contractors involved in the monitoring process and any costs associated with the purchase, installation, repair, maintenance, or replacement of the sound-monitoring equipment, including any software or hardware required to support the measurement and reporting program.

Noise Monitoring Requirements during Tier 1 Events

The noise-monitoring station will be active during all Tier 1 Events. During all Tier 1 Events, the Tenant will designate staff member(s) to monitor noise levels via the noise-monitoring station. The designated staff member(s) will possess at least 1 year of verifiable experience related to noise monitoring and will be knowledgeable in the fundamentals of noise propagation and operation of noise-monitoring equipment. Alternatively, staff with less than 1 year of experience may conduct noise-monitoring duties under the training and supervision of an individual with at least 5 years of relevant noise-monitoring experience who is knowledgeable in the fundamentals of noise propagation and operation of noise-monitoring equipment. The designated staff member(s) will observe current noise-measurement data from the monitoring station to identify potential violations.

If the measured noise approaches levels that indicate a potential violation of the 100 dBA $L_{eq(5min)}$ front-of-house limit, then the Tenant will take immediate action to reduce amplified noise levels. Immediate actions can include, but are not limited to, reduced sound amplification, temporary suspension of sound amplification, transitioning to quieter portions of the performance, and early termination of events if other actions fail to control noise levels. Proactive steps should be taken to reduce noise levels and avoid the need for noise-related event termination, and any decision to terminate a performance should consider the effect a shutdown may have on the audience.

[3] The front-of-house sound mixing location refers to the location within the audience area in front of the stage where the mixing board/console is located and sound levels are controlled by the User's sound engineer.

Timing	The noise monitoring system will be installed, tested, and deemed operational prior to the use of the house sound system and will be used and maintained for the operational life of the Amphitheater.
Methodology	The requirements for installing noise monitoring equipment and monitoring during all Tier 1 Events will be incorporated into the lease agreement(s) with the Amphitheater Tenant. The requirement for noise monitoring will be disclosed in all leases, contracts, permits, or other agreements made with all Users of the Amphitheater (e.g., musical acts, promoters, event organizers)

MM-NOI-6: Noise Reporting Requirements Following Amphitheater Events.

A sound-monitoring data report will be generated for each Tier 1 Event that includes all amplified activities at the Amphitheater. The report should show the measured L_{max} and L_{eq} for each consecutive 1-minute, 5-minute, and 1-hour period throughout each affected day and should indicate the start and end times of each activity (e.g., rehearsal, sound check, performance). Any $L_{eq(5min)}$ that exceeds 100 dBA at the front-of-house monitoring location will be clearly flagged in the report, and a consolidated summary of all noise exceedances (if any) throughout each day will be provided. The report will identify any actions taken to reduce excessive noise levels and should evaluate the results of these actions.

The Tenant will maintain a log of all sound-monitoring data reports to provide a permanent record and document any violations of the sound level limit(s) that occurred. For events that cause any violations of the sound-level limits, the sound monitoring log will be furnished to the Port within 48 hours of the conclusion of the event. For all other events, the sound monitoring log will be furnished to the Port at the request of the Executive Director. All sound monitoring data and associated reports will be maintained by the Tenant for a minimum of 5 years after each event day.

Timing	Reports should be prepared after each Tier 1 event. For events that cause any violations of the sound-level limits, the sound monitoring log will be furnished to the Port within 48 hours of the conclusion of the event.

Methodology	The requirements for sound-monitoring data reporting after all Tier 1 Events will be incorporated into the lease agreement(s) with the Amphitheater Tenant. The format and delivery of the sound-monitoring data report will be via methods deemed acceptable to the Port.
MM-NOI-7: Establish a Noise-Complaint Hotline and/or Website. The Tenant will maintain a dedicated noise-complaint hotline and/or website for the proposed Amphitheater. The phone number/web address for the hotline will be published on the Tenant's public website. All noise complaints will be documented and addressed by the Tenant. The Tenant will respond to all complaints, if requested to do so by the complainant, within 48 hours of the complaint or the end of the event that triggered the complaint (whichever occurs last). Complaint logs will be provided to the LAHD on an annual basis or as requested by the Executive Director.	
Timing	The hotline and/or website will be set up prior to the operation of the proposed Amphitheater and be available at least 24 hours before and 7 days after any Tier 1 or Tier 2 Event at the Amphitheater.
Methodology	Complaints will be accepted, and responses will be by one or more current communication methods (e.g., phone, text message, email, web form), and new methods may be added or substituted as they become available in the future.
MM-NOI-8: Enforce a Curfew and Restrict the Hours of Use and Duration for the Amphitheater's Amplified Sound System. All events will conclude no later than 10:30 p.m. on all nights, unless prior written permission has been granted by the Executive Director or designated Deputy. In no case, however, will a performance extend past 11:00 p.m. The use of the sound system at the Amphitheater will start no earlier than 8:00 a.m. The Tenant is responsible for recording event start and end times and logs will be provided to the LAHD on an annual basis or as requested by the Executive Director. On any Tier 1 Event day that includes a public or private performance, the total use of amplified sound equipment for all activities (e.g., rehearsal, soundcheck, performance) will be limited to a cumulative total of 12 hours. Sound amplification may occur over multiple distinct intervals, as long as the sum of those intervals is 12 hours or less. On non-performance days, the total use of amplified sound equipment for all amplified events will be limited to no more than a cumulative total of up to 4 hours.	
Timing	During the operation of the proposed Amphitheater.
Methodology	The curfew requirement and time restrictions will be incorporated into the lease agreement(s) with the Amphitheater Tenant. The requirements will also be included in all leases, contracts, permits, or other agreements made with all Users of the Amphitheater (e.g., musical acts, promoters, event organizers)
MM-NOI-9: Fines for Non-Compliance. The maximum permissible front-of-house noise level within the Amphitheater is a 5-minute A-weighted equivalent noise level of 100 decibels, designated as 100 dBA $L_{eq(5min)}$. For the purposes of assessing compliance, the noise level will be assessed for each discrete consecutive 5-minute period starting at regular clock intervals (e.g., 8:00 p.m., 8:05 p.m., 8:10 p.m.). Every 5-minute interval during which the noise level exceeds 100 dBA $L_{eq(5min)}$ will be considered one Offense, with the exception that the front-of-house noise limit does not apply to noise from fireworks that are operated in compliance with the Amphitheater lease and all other applicable permits and regulations. The noise monitoring station (as defined in **MM-NOI-5**) will include an interface that allows designated noise monitoring staff member(s) to view measured noise levels in real time. If sound levels exceed 100 dBA, sustained over any 3-minute interval, then the designated noise monitoring staff member(s) will issue the User an official warning to lower the sound levels. An official warning will be presumed to have been issued when sound levels exceed 100 dBA, sustained over any 3-minute interval, at the 3-minute mark. If additional violations occur, additional warnings and monetary penalties will apply as set forth below.	

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- **First Offense**: A notification of Offense, including a second warning to lower sound levels, will be issued during the performance to lower if sound levels exceed 100 dBA $L_{eq(5min)}$ over any discrete consecutive 5-minute period starting at regular clock intervals (e.g., 8:00 p.m., 8:05 p.m., 8:10 p.m.).
- **Second Offense**: A $5,000 fine.
- **Third Offense**: A $7,500 fine.
- **Subsequent Offenses**: $10,000 per violation.
- **Curfew Penalty**: A penalty of $1,000 per minute for the first 5 minutes past 11:00 p.m. the applicable curfew for the event (10:30 p.m. or as established in **MM-NOI-8**). A penalty of $5,000 per minute will be assessed thereafter.

However, should sound levels exceed 105 dBA $L_{eq(5min)}$ at any time, there will be no warnings to lower the sound, and an immediate fine of $10,000 will be assessed to the User and for any subsequent violations that also exceed 105 dBA $L_{eq(5min)}$.
</td></tr>
<tr><td>Timing</td><td>During the operation of the proposed Amphitheater, with fines (if applicable) issued following any performances with noise violations.</td></tr>
<tr><td>Methodology</td><td>As described in MM-NOI-9, with specific fine assessment and payment terms to be defined by POLA.</td></tr>
<tr><td colspan="2">MM-NOI-10: Restrict the Total Number of Tier 1 Event Performance Days to 100 per Year.
The total number of Tier 1 Event performance days will not exceed 100 per calendar year. For Tier 1 Event performances that run over multiple days, each calendar day that includes a performance will count against the allowed total. For example, a 3-night run by the same artist would count as three separate Tier 1 Event performance days, or a 2-day jazz festival would count as two separate Tier 1 Event performance days. Soundchecks or rehearsals on non-performance days will not count against the allowed total, provided they comply with all other applicable restrictions (including noise levels, curfews, and durations).</td></tr>
<tr><td>Timing</td><td>During the operation of the proposed Amphitheater and repeated for every calendar year of Amphitheater operation.</td></tr>
<tr><td>Methodology</td><td>A list of all past and planned future Tier 1 Event counts and dates will be maintained by the Tenant and verified at least once per year by the Port. The Tenant is responsible for accurate accounting of the events and for not overbooking events in any year.</td></tr>
<tr><td colspan="2">MM-NOI-11: Restrict the Total Number of Firework Displays to 25 per Year.
The total number of firework displays will not exceed 25 per calendar year.</td></tr>
<tr><td>Timing</td><td>During the operation of the proposed Amphitheater and repeated for every calendar year of Amphitheater operation.</td></tr>
<tr><td>Methodology</td><td>A list of all past and planned future firework display counts and dates will be maintained by the Tenant and verified at least once per year by the Port. The Tenant is responsible for accurate accounting of the firework displays and for not allowing more than 25 events in any year.</td></tr>
<tr><td colspan="2">MM-NOI-12: Limit the Duration of All Firework Displays.
The duration of all firework displays will be no longer than 20 minutes on all nights, unless prior written permission has been granted by the Executive Director or designated Deputy. The Tenant is responsible for recording firework display start and end times, and logs will be provided to the LAHD on an annual basis or as requested by the Executive Director.</td></tr>
<tr><td>Timing</td><td>During the operation of the proposed Amphitheater for all events involving fireworks.</td></tr>
<tr><td>Methodology</td><td>The requirements for limiting the duration of fireworks displays will be incorporated into the lease agreement(s) with the Amphitheater Tenant. The requirement will also be included in all leases, contracts, permits, or other agreements made with all Users of the Amphitheater (e.g., musical acts, promoters, event organizers) and all vendors designing, planning, and implementing the fireworks displays.</td></tr>
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MM-NOI-13: Limit the Use of "Salute" Fireworks. Fireworks display events will not use concussion type, non-color shells such as "salutes" (*salute fireworks*, also known as maroon fireworks, are fireworks designed to make a very loud bang, or "report," and an intense flash of light) during the initial 25 percent of the duration of any display (e.g., within the first 5 minutes of a 20-minute display).	
Timing	During the operation of the proposed Amphitheater for all events involving fireworks.
Methodology	The requirements for limiting the use of "salute" fireworks will be incorporated into the lease agreement(s) with the Amphitheater Tenant. The requirement will also be included in all leases, contracts, permits, or other agreements made with all Users of the Amphitheater (e.g., musical acts, promoters, event organizers) and all vendors designing, planning, and implementing the fireworks displays.
MM-NOI-14: Replace Fireworks Displays with Drone Displays. To the extent permitted by Amphitheater programming, available technology, and all applicable legal, safety, and permit requirements, replace firework displays with lighted drone displays.	
Timing	During the operation of the proposed Amphitheater for all events involving fireworks.
Methodology	The Tenant will periodically investigate the viability of using drone displays in place of fireworks and work with the Port and Amphitheater Users to implement such displays if they are deemed feasible.

City = City of Los Angeles; dBA = A-weighted decibel; LAHD = Los Angeles Harbor Department; L_{eq} = equivalent noise level; $L_{eq(5min)}$ = 5-minute equivalent noise level; L_{max} = maximum noise level; SLM = sound level meter; SPL = sound pressure level;