E 3510-22-P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648-XD136]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to San Francisco Bay Area Water Emergency Transportation Authority's Ferry Terminal Refurbishment in Alameda, California

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; issuance of an incidental harassment authorization.

SUMMARY: In accordance with the regulations implementing the Marine Mammal Protection Act (MMPA) as amended, notification is hereby given that NMFS has issued an incidental harassment authorization (IHA) to the San Francisco Bay Area Water Emergency Transportation Authority (WETA) to incidentally harass, by Level A and Level B harassment, marine mammals during construction activities associated with the refurbishment of the Alameda Main Street Ferry Terminal in Alameda, California. There are no changes from the proposed authorization to the final authorization.

DATES: This authorization is effective from August 15, 2023, through August 14, 2024.

ADDRESSES: Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at *https://www.fisheries.noaa.gov/action/incidental-take-authorization-san-francisco-bay-area-water-emergency-transportation*. In case of problems accessing these documents, please call the contact listed below.

FOR FURTHER INFORMATION CONTACT: Alyssa Clevenstine, Office of Protected Resources, NMFS, (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Background

The MMPA prohibits the "take" of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq*.) direct the Secretary of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are proposed or, if the taking is limited to harassment, a notice of a proposed IHA is provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other "means of effecting the least practicable adverse impact" on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stocks for taking for certain subsistence uses (referred to in shorthand as "mitigation"); and requirements pertaining to the mitigation, monitoring, and reporting of the takings are set forth. The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

Summary of Request

On February 9, 2023, NMFS received a request from WETA for an IHA to take marine mammals incidental to construction activities associated with refurbishment of the Alameda Main Street Ferry Terminal in Alameda, CA. Following NMFS' review of the application, WETA submitted revised versions on March 15, April 18, May 18, and May 24, 2023. The application was deemed adequate and complete on May 25, 2023, and the applicant submitted a minor modification on June 12, 2023. WETA's request is for take

of harbor seals (*Phoca vitulina*) and California sea lions (*Zalophus californianus*) by Level B harassment, and by Level A harassment for certain activities. Neither WETA nor NMFS expect serious injury or mortality to result from this activity and, therefore, an IHA is appropriate. This final notice also includes a description of the hydroacoustic monitoring report, which was accidentally omitted from the proposed notice (88 FR 42304, June 30, 2023). There are no changes from the proposed IHA to the final IHA.

Description of the Specified Activity

WETA plans to refurbish the Alameda Main Street Ferry Terminal in the Oakland Inner Harbor, Alameda, CA, to update and replace ageing ferry terminal components and structural support. WETA plans to use vibratory extraction to remove four existing 30 inch (in) (76.2 centimeter (cm)) steel guide piles and vibratory installation to drive nine new steel piles: two 24 in (60.9 cm) steel pipe piles with concrete cap beams on land, one 48 in (121.9 cm) steel pipe monopile in water, four 36 in (91.4 cm) steel guide piles in water, and two 36 in (91.4 cm) donut fender piles in water. A maximum of 6 consecutive days (5 days in water, 1 day on land) of piling activities will occur during the course of construction (4-6 weeks) from August through November 2023 (Table 1). WETA plans to use vibratory pile driving and, if necessary, impact pile driving to achieve required tip elevation for the nine new piles. No in-air impacts to marine mammals are anticipated from the installation of the two 24 in (60.9 cm) piles driven on land. All project activities for which take is being requested will be located in the Oakland Inner Harbor, Alameda (see Figure 2 in IHA application).

A detailed description of the planned construction project is provided in the **Federal Register** notice for the proposed IHA (88 FR 42304, June 30, 2023). Since that time, no changes have been made to the planned activities. Therefore, a detailed description is not provided here. Please refer to that **Federal Register** notice for the description of the specified activity.

Table 1 -- Pile Extraction and Installation Activities

Pile Activity	Structure	Pile Size (in)	Piles per Day	Duration of Activity	Duration of vibratory activity per pile (minutes)	Estimated blows of impact driving per pile (strikes)*
Extraction	Removal of existing guide piles	30	4	1-3 days	45	N/A
Installation	Terminal bridge and foundation replacement	48	1	1 day	45	1,015
Installation	Float replacement (guide piles and donut fender piles)	36	6	1 day	45	1,015

Note: Impact pile installation will only be used if vibratory methods are insufficient to achieve required tip elevation.
*Impact pile driving assumes approx. 20-30 minutes of driving

Comments and Responses

A notice of NMFS' proposal to issue an IHA to WETA was published in the **Federal Register** on June 30, 2023 (88 FR 42304). That notice described, in detail, WETA's planned activities, the marine mammal species that may be affected by the activities, and the anticipated effects on marine mammals. In that notice, we requested public input on the request for authorization described therein, our analyses, the proposed authorization, and any other aspect of the notice of proposed IHA, and requested that interested persons submit relevant information, suggestions, and comments. During the 30-day public comment period, no substantive public comments were received.

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history of the potentially affected species. NMFS fully considered all of this information, and we refer the reader to these descriptions, instead of reprinting the information. Additional information regarding population trends and threats may be found in NMFS' Stock

Assessment Reports (SARs; *www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*) and more general information about these species (*e.g.*, physical and behavioral descriptions) may be found on NMFS' website (*https://www.fisheries.noaa.gov/find-species)*.

Table 2 lists all species for which take is authorized for this activity, and summarizes information related to the population or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no serious injury or mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species or stocks and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS' stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS' U.S. Pacific SARs. All values presented in Table 2 are the most recent available at the time of publication (including from the draft 2022 SARs) and are available online at: *www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*.

Table 2 -- Marine Mammal Species Likely Impacted by the Specified Activities[1]

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N)[2]	Stock abundance (CV, N_{min}, most recent abundance survey)[3]	PBR	Annual M/SI[4]
Order Carnivora – Pinnipedia						
Family Otariidae (eared seals and sea lions)						
California sea lion	*Zalophus californianus*	U.S.	-/-; N	257,606 (N/A; 233,515; 2014)	14,011	>321
Family Phocidae (earless seals)						
Harbor seal	*Phoca vitulina richardii*	California	-/-; N	30,968 (0.157; 27,348; 2012)	1,641	42.8

[1] Information on the classification of marine mammal species can be found on the web page for The Society for Marine Mammalogy's Committee on Taxonomy (*https://marinemammalscience.org/science-and-publications/list-marine-mammal-species-subspecies/*; Committee on Taxonomy (2022)).
[2] ESA status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.
[3] NMFS marine mammal stock assessment reports online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*. CV is coefficient of variation; N_{min} is the minimum estimate of stock abundance.
[4] These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.,* commercial fisheries, vessel strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value or range.

As indicated above, both species in Table 2 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur and are also included in Table 2 of the IHA application. No other marine mammal species are expected to occur in the project area.

A detailed description of the species likely to be affected by this project, including brief introductions to the species and relevant stocks as well as available information regarding population trends and threats, and information regarding local occurrence, were provided in the **Federal Register** notice for the proposed IHA (88 FR 42304, June 30, 2023); since that time, we are not aware of any changes in the status of these species and stocks; therefore, detailed descriptions are not provided here. Please refer to that **Federal Register** notice for these descriptions. Please also refer to the NMFS website (*https://www.fisheries.noaa.gov/find-species*) for generalized species accounts.

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Not all marine mammal species have equal hearing capabilities (*e.g.*, Richardson *et al.*, 1995, Wartzok and Ketten, 1999, Au and Hastings, 2008). To reflect this, Southall *et al.* (2007, 2019) recommended that marine mammals be divided into hearing groups based on directly measured (behavioral or auditory evoked potential techniques) or estimated hearing ranges (behavioral response data, anatomical modeling, *etc.*). Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.*, low-frequency cetaceans). Subsequently, NMFS (2018) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound was deemed to be biologically implausible and the lower bound from Southall *et al.* (2007) retained. Marine mammal hearing groups and their associated hearing ranges are provided in Table 3.

Table 3 -- Marine Mammal Hearing Groups (NMFS, 2018)

Hearing Group	Generalized Hearing Range*
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz
High-frequency (HF) cetaceans (true porpoises, *Kogia*, river dolphins, Cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*)	275 Hz to 160 kHz
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz
* Represents the generalized hearing range for the entire group as a composite (*i.e.,* all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall *et al.* 2007) and PW pinniped (approximation).	

The pinniped functional hearing group was modified from Southall *et al.* (2007) on the basis of data indicating that phocid species have consistently demonstrated an extended frequency range of hearing compared to otariids, especially in the higher frequency range (Hemilä *et al.*, 2006, Kastelein *et al.*, 2009, Reichmuth *et al.*, 2013).

For more detail concerning these groups and associated frequency ranges, please see NMFS (2018) for a review of available information.

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

The effects of underwater noise from WETA's construction activities have the potential to result in behavioral harassment of marine mammals in the vicinity of the project area. The notice of the proposed IHA (88 FR 42304, June 30, 2023) included a discussion of the effects of anthropogenic noise on marine mammals and the potential effects of underwater noise from WETA's construction activities on marine mammals and their habitat. That information and analysis is incorporated by reference into this final IHA determination and is not repeated here; please refer to the notice of the proposed IHA (88 FR 42304, June 30, 2023).

Estimated Take of Marine Mammals

This section provides an estimate of the number of incidental takes authorized through this IHA, which informed both NMFS' consideration of "small numbers" and the negligible impact determinations.

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as any act of pursuit, torment, or annoyance, which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes would primarily be by Level B harassment, as use of the acoustic sources (*i.e.*, vibratory removal, vibratory driving, impact driving) has the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for permanent threshold shift (PTS) (Level A harassment) to result, primarily for phocids because predicted auditory injury zones are larger than for otariids. Auditory injury is unlikely to occur for otariids. The mitigation and monitoring measures are expected to minimize the severity of the taking to the extent practicable (see **Mitigation** and **Monitoring and Reporting** sections).

As described previously, no serious injury or mortality is anticipated or authorized for this activity. Below we describe how the take numbers are estimated.

Generally speaking, we estimate take by considering: (1) acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) the number of days of activities. We note that while these factors can contribute to a basic calculation to

provide an initial prediction of potential takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.,* previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the authorized take estimates.

Acoustic Thresholds

NMFS recommends the use of acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment).

Level B Harassment – Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source or exposure context (*e.g.*, frequency, predictability, duty cycle, duration of the exposure, signal-to-noise ratio, distance to the source), the environment (*e.g.*, bathymetry, other noises in the area, predators in the area), and the receiving animals (hearing, motivation, experience, demography, life stage, depth) and can be difficult to predict (*e.g.*, Southall *et al.*, 2007, Southall *et al.*, 2021, Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a metric that is both predictable and measurable for most activities, NMFS typically uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS generally predicts that marine mammals are likely to be behaviorally harassed in a manner considered to be Level B harassment when exposed to underwater anthropogenic noise above root-mean-squared sound pressure levels (RMS SPL) of 120 dB (referenced to 1 microPascal (re 1 μPa)) for continuous (*e.g.,* vibratory pile driving, drilling) and above RMS SPL 160 dB re 1 μPa for non-explosive impulsive (*e.g.*, seismic airguns) or intermittent (*e.g.*, scientific sonar) sources. Generally speaking, Level B harassment take estimates based on these

behavioral harassment thresholds are expected to include any likely takes by temporary threshold shift (TTS) as, in most cases, the likelihood of TTS occurs at distances from the source less than those at which behavioral harassment is likely. TTS of a sufficient degree can manifest as behavioral harassment, as reduced hearing sensitivity and the potential reduced opportunities to detect important signals (conspecific communication, predators, prey) may result in changes in behavior patterns that would not otherwise occur.

WETA's construction activities include the use of continuous (vibratory pile removal and installation) and, potentially, impulsive (impact pile installation) sources and, therefore, the RMS SPL thresholds of 120 and 160 dB re 1 μPa are applicable.

Level A harassment – NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). WETA's construction activities include the use of impulsive (impact hammer) and non-impulsive (vibratory hammer) sources.

These thresholds are provided in Table 4 below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS' 2018 Technical Guidance, which may be accessed at: *www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance*.

Table 4 -- Thresholds Identifying the Onset of Permanent Threshold Shift.

	PTS Onset Acoustic Thresholds* (Received Level)	
Hearing Group	Impulsive	Non-impulsive

Low-Frequency (LF) Cetaceans	*Cell 1* $L_{pk,flat}$: 219 dB $L_{E,LF,24h}$: 183 dB	*Cell 2* $L_{E,LF,24h}$: 199 dB
Mid-Frequency (MF) Cetaceans	*Cell 3* $L_{pk,flat}$: 230 dB $L_{E,MF,24h}$: 185 dB	*Cell 4* $L_{E,MF,24h}$: 198 dB
High-Frequency (HF) Cetaceans	*Cell 5* $L_{pk,flat}$: 202 dB $L_{E,HF,24h}$: 155 dB	*Cell 6* $L_{E,HF,24h}$: 173 dB
Phocid Pinnipeds (PW) (Underwater)	*Cell 7* $L_{pk,flat}$: 218 dB $L_{E,PW,24h}$: 185 dB	*Cell 8* $L_{E,PW,24h}$: 201 dB
Otariid Pinnipeds (OW) (Underwater)	*Cell 9* $L_{pk,flat}$: 232 dB $L_{E,OW,24h}$: 203 dB	*Cell 10* $L_{E,OW,24h}$: 219 dB

* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.

Note: Peak sound pressure (L_{pk}) has a reference value of 1 µPa, and cumulative sound exposure level (L_E) has a reference value of 1µPa^{2}s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript "flat" is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (*i.e.*, varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that are used in estimating the area ensonified above the acoustic thresholds, including source levels and transmission loss (TL) coefficient.

Pile driving activities, using an impact hammer as well as a vibratory hammer, generate underwater noise that could result in disturbance to marine mammals near the project area. A review of underwater sound measurements for similar projects was conducted to estimate the near-source sound levels for impact and vibratory pile driving and vibratory extraction. Source levels and sound exposure levels (SEL) for planned removal and installation activities derived from this review are shown in Table 5.

Table 5 -- Project Sound Source Levels

Driving Method	Location	Pile Size (in)	Peak SPL dB re 1 µPa	RMS SPL dB re 1 µPa	SEL dB re 1 μPa^2-sec	Source
Impact*	Water	36	206	188	178	Caltrans 2020
Impact*	Water	48	208	187	174	Caltrans 2020
Vibratory	Water	30†	200	168	168	POA 2016
Vibratory	Water	36	200	168	168	POA 2016
Vibratory	Water	48	200	168	168	POA 2016

* Attenuated condition achieved using a bubble curtain system for all impact pile driving; attenuated condition assumes a 5-dB reduction in sound

† Vibratory driving of 36 in piles used as proxy for vibratory extraction of 30 in piles

Level B Harassment Zone — TL is the decrease in acoustic intensity as an acoustic pressure wave propagates out from a source. TL parameters vary with frequency, temperature, sea conditions, current, source and receiver depth, water depth, water chemistry, and bottom composition topography. The general formula for underwater TL is:

$$TL = B * Log_{10} (R_1 / R_2),$$

where

TL = transmission loss in dB;

B = transmission loss coefficient;

R_1 = the distance of the modeled SPL from the driven pile; and

R_2 = the distance from the driven pile of the initial measurement.

The recommended TL coefficient for most nearshore environments is the practical spreading value of 15. This value results in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions, known as practical spreading, which is the most appropriate assumption for WETA's planned activity in the absence of specific modeling and site-specific information. Sound propagation in the Oakland Inner Harbor is limited by bends in the channel and substantial sound is not anticipated to travel beyond 4,200 m (13,780 ft) to the west (out the shipping channel into the bay) and 1,700 m (5,577 ft) east of the project site (where the channel bends around

the island of Alameda), and will be confined to the north and south by the narrow channel of the Oakland Inner Harbor (see Figure 1 in the IHA application). Therefore, the distance for noise impacts would be limited to 4,200 m west and 1,700 m east of the project location. The Level A shutdown zones and Level B harassment zones for WETA's planned activities are shown in Table 6.

Table 6 -- Distance to the Level A and Level B Harassment Thresholds for Pile-driving Activities

Method	Pile Type	Pile Size (in)	Level A Threshold for Phocids (m)	Level A Threshold for Otariids (m)	Level B Harassment Zone (m)
Impact, installation	Steel	36	827	60	736
Impact, installation	Steel	48	136	10	631
Vibratory, extraction*	Steel	30	33	10	4,200 W; 1,700 E
Vibratory, installation*	Steel	36	33	10	4,200 W; 1,700 E
Vibratory, installation*	Steel	48	10	10	4,200 W; 1,700 E

Note: Vibratory driving of 36 in piles used as proxy for vibratory extraction of 30 in piles.
* Constrained by bends in the Oakland Estuary and relatively shallow bathymetry near the shipping channel: 4,200 m (13,780 ft) west, 1,700 m (5,577 ft) east

Level A Harassment Thresholds — The ensonified area associated with Level A harassment is more technically challenging to predict due to the need to account for a duration component. Therefore, NMFS developed an optional User Spreadsheet tool to accompany the Technical Guidance that can be used to relatively simply predict an isopleth distance for use in conjunction with marine mammal density or occurrence to help predict potential takes. We note that because of some of the assumptions included in the methods underlying this optional tool, we anticipate that the resulting isopleth estimates are typically going to be overestimates of some degree, which may result in an overestimate of potential take by Level A harassment. However, this optional tool offers the best way to estimate isopleth distances when more sophisticated modeling methods

are not available or practical. For stationary sources (*i.e.*, vibratory and impact piling), the optional User Spreadsheet tool predicts the distance at which, if a marine mammal remained at that distance for the duration of the activity, it would be expected to incur PTS. Inputs used in the optional User Spreadsheet tool, and the resulting estimated isopleths, are reported in Table 7. The isopleths generated by the User Spreadsheet used the same TL coefficients as the Level B harassment zone calculations, as indicated above for each activity type. Inputs used in the User Spreadsheet (*e.g.,* number of piles per day, duration and/or strikes per pile) are presented in Table 1. The maximum RMS SPL, SEL, and peak SPL are reported in Table 7. The cumulative SEL and peak SPL were used to calculate Level A harassment isopleths for vibratory pile driving and extraction activities, while the single strike SEL value was used to calculate Level A isopleths for impact pile driving activity.

Table 7 – Sound Levels Used for Predicting Underwater Sound Impacts

Driving Method	Location	Pile Size (in)	Peak SPL dB re 1 µPa	RMS SPL dB re 1 µPa	SEL dB re 1 μPa^2-sec	Peak SPL Attenuated* dB re 1 µPa	RMS SPL Attenuated* dB re 1 µPa	SEL Attenuated* dB re 1 μPa^2-sec
Impact	Water	36	211	193	183	206	188	178
Impact	Water	48	213	192	179	208	187	174
Vibratory	Water	36	200	168	168	NA	NA	NA
Vibratory	Water	48	200	168	168	NA	NA	NA

Note: Using estimates for vibratory installation of 36 in (91.4 cm) steel pile as proxy for vibratory extraction of 30 in (76.2 cm) steel pile. Sound pressure levels (SPL) measured in dB re 1 µPa at 10 meters
* Attenuated condition assumes 5 dB reduction in source level
NA: No additional attenuation applied to piles driven with a vibratory hammer

Marine Mammal Occurrence

In this section we provide information about the occurrence of marine mammals, including density or other relevant information which will inform the take calculations.

The California Department of Transportation (Caltrans) conducted monitoring of marine mammals in the vicinity of the San Francisco-Oakland Bay Bridge for 16 years. From those data, Caltrans produced at-sea density estimates for California sea lions and harbor seals (Caltrans, 2016). Using these density estimates and the estimated Level A

and Level B harassment areas, take estimates were calculated for all potential construction options.

WETA ferry boat captains have reported frequently seeing both California sea lions and harbor seals in the estuary channel and within the Oakland Inner Harbor (in-water sightings, not hauled out) but did not report seeing either species or other marine mammals near the Alameda Main Street Ferry Terminal dock or platform (WETA, pers. comm.).

California sea lion – Caltrans's at-sea density estimate for California sea lions is 0.161 animals/km^2 for the summer-late fall season (Caltrans, 2016). During El Niño conditions, the density of California sea lions in San Francisco Bay may be much greater than the value used above. Development of El Niño conditions in 2023 is ongoing, with chances of a strong event currently estimated at 56 percent (*https://www.climate.gov*, June 8, 2023). To account for the potential increase in California sea lions within San Francisco Bay during the project, daily take estimated has been increased by a factor of 10 for each pile activity and type (*e.g.*, 82 FR 17799, April 13, 2017). California sea lions have occupied docks near Pier 39 in San Francisco (approx. 10.4 kilometers (km) (6.47 mi) west northwest) since 1987. The highest number of sea lions recorded at Pier 39 was 1,701 individuals in November 2009. Occurrence of sea lions here is typically lowest in June (during pupping and breeding seasons) and highest in August. Approximately 85 percent of the animals that haul out at this site are males, and no pupping has been observed here or at any other site in San Francisco Bay. Pier 39 is the only regularly used haul out site in the project vicinity, but sea lions occasionally haul out on human-made structures such as bridge piers, jetties, or navigation buoys (Riedman, 1990).

Harbor seal – Caltrans at-sea density estimate for harbor seals is 3.957 animals/ km^2 (Caltrans, 2016). No resident harbor seals occur within the Oakland Inner Harbor. The closest haul out to the project area is located outside of the Oakland Inner Harbor at

Alameda Point (approx. 37.770127°, -122.296819°), where a float was installed by WETA in 2016 to accommodate harbor seals. This haulout can carry approximately 80 individuals, with highest sightings occurring during winter months. Additionally, the southern shoreline of Yerba Buena Island (approx. 6.2 km (3.8 mi) west northwest) is a haulout site with the highest numbers hauled out during afternoon low tides in fall and winter months.

Take Estimation

Here we describe how the information provided above is synthesized to produce a quantitative estimate of the take that is reasonably likely to occur and authorized.

Incidental take is estimated for each species by estimating the maximum number of marine mammals potentially present within a harassment zone during active pile driving based on density estimates, harassment zone size, and length of construction activity. Animal exposure estimates for each species were calculated by multiplying the estimated density of each species by the area of each harassment zone during active each type of pile driving activity (vibratory removal, vibratory driving, impact driving) and pile size (30 in, 36 in, 48 in). The estimated density is based on Caltrans (2016) offshore at-sea density and increased to account for the likely increase of animals in a nearshore environment based on previous comments from the Marine Mammal Commission (see Tables 3 and 4 in the IHA application and 82 FR 17799, April 13, 2017).

$$Maximum\ number\ of\ animals\ exposed\ per\ activity = Density \times Level\ A\ or\ Level\ B\ harassment\ area$$

Estimated take was calculated using the exposure estimate multiplied by the number of days each in-water pile driving activity will occur. An additional take of zero to two animals per day was added to account for the potential occurrence of small groups or additional individuals. This was done because small numbers of both species are known to use the Oakland Inner Harbor but extensive surveys have not been completed in the project area. Using these density estimates and the areas within the Level A and B

harassment isopleths, the take estimates were calculated for all possible construction options and here we show the maximum take estimates. Maximum estimated take by Level A harassment is based on 3 days of in-water vibratory pile removal plus 2 days of in-water impact driving, as the Level A harassment isopleth is larger for impact driving than vibratory driving (Table 8). Maximum estimated take by Level B harassment is based on 3 days of in-water vibratory removal plus 2 days of in-water vibratory pile installation, as the Level B harassment isopleth for vibratory driving is larger than for impact driving (Table 9). This results in a conservative estimate of how many marine mammals might be present to ensure that take estimates will not be exceeded (Table 10).

$$Estimated\ take = \ Maximum\ number\ of\ animals\ exposed \times \ number\ of\ days\ per\ activity + additional\ individuals$$

Finally, due to the probability of El Niño conditions developing throughout 2023 (*https://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/ensodisc.shtml*), the daily take estimate for California sea lions was multiplied by a factor of 10 for each day to account for a potential increase in occurrence that has been previously documented for the species under expected climatological conditions (see 82 FR 17799, April 13, 2017).

Table 8 -- Estimated Take by Level A Harassment per Activity

Construction Activity	Pile Size (in)	Species	Potential Take/Day	Duration of Activity (day)	Estimated Incidental Take	Additional Level A Take Requested (animals/day)	Total Level A Take
Vibratory removal	30*	HASE	0.04	1-3	<1	1	1-3
Vibratory removal	30*	CASL	NA	1-3	NA	NA	NA
Vibratory installation	36	HASE	0.04	1	<1	1	1
Vibratory installation	36	CASL	NA	1	NA	NA	NA
Vibratory installation	48	HASE	0.001	1	<1	1	1
Vibratory installation	48	CASL	NA	1	NA	NA	NA
Impact driving	36	HASE	2.57	1	3	1	4
Impact driving	36	CASL	0.002	1	<1	1	1
Impact driving	48	HASE	0.15	1	<1	1	1
Impact driving	48	CASL	0.00005	1	<1	1	1

Note: All California sea lion estimates were multiplied by a factor of 10 to account for the increased occurrence of this species due to potential for El Niño conditions

* Using estimates for vibratory installation of 36 in (91.4 cm) steel pile as proxy for vibratory extraction of 30 in (76.2 cm) steel pile

HASE: Harbor seal density 3.957 animals/km^2

CASL: California sea lion density 0.161 animals/km^2

Table 9 -- Estimated Take by Level B Harassment per Activity

Construction Activity	Pile Size (in)	Condition	Species	Potential Take/Day	Duration of Activity (day)	Estimated Incidental Take	Additional Level B Take Requested (animals/day)	Total Level B Take
Vibratory removal	30*	Unattenuated	HASE	7.64	1-3	8-24	2	10-30
Vibratory removal	30*	Unattenuated	CASL	3.1	1-3	1-3	2	5-15
Vibratory installation	36	Unattenuated	HASE	7.64	1	8	2	10
Vibratory installation	36	Unattenuated	CASL	3.1	1	1	2	5
Vibratory installation	48	Unattenuated	HASE	7.64	1	8	2	10
Vibratory installation	48	Unattenuated	CASL	3.1	1	1	2	5
Impact driving	36	Attenuated	HASE	2.33	1	3	2	5
Impact driving	36	Attenuated	CASL	0.9	1	<1	2	2
Impact driving	48	Attenuated	HASE	1.94	1	2	2	4
Impact driving	48	Attenuated	CASL	0.8	1	<1	2	2

Note: All California sea lion estimates were multiplied by a factor of 10 to account for the increased occurrence of this species due to potential for El Niño conditions

* Using estimates for vibratory installation of 36 in (91.4 cm) steel pile as proxy for vibratory extraction of 30 in (76.2 cm) steel pile

HASE: Harbor seal density 3.957 animals/km^2

CASL: California density 1.61 animals/km^2

Table 10 -- Estimated Take by Level A and Level B Harassment for Authorization

Species common name	Scientific name	Stock	Maximum estimated Level A harassment*	Maximum estimated Level B harassment†	Estimate take as a percentage of population
California sea lion‡	*Zalophus californianus*	U.S.	2	25	0.011
Harbor seal	*Phoca vitulina richardii*	California	8	50	0.187

Source: NMFS SARs 2015, 2021

* Based on 3 days of vibratory removal plus 2 days of impact installation (36 in (91.4 cm), 48 in (121.9 cm) piles only)

† Based on 3 days of vibratory removal plus 2 days of vibratory installation (36 in (91.4 cm), 48 in (121.9 cm) piles only)

‡ To account for the increase in California sea lion density due to potential El Niño conditions, the daily take estimated from the density has been increased by a factor of 10 for each day that pile driving or removal occurs

Mitigation

In order to issue an IHA under section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to the activity, and other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for certain subsistence uses (latter not applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting the activity or other means of effecting the least practicable adverse impact upon the affected species or stocks, and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, NMFS considers two primary factors:

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat. This considers the nature of the potential adverse

impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned), the likelihood of effective implementation (probability implemented as planned), and;

(2) The practicability of the measures for applicant implementation, which may consider such things as cost, and impact on operations.

WETA must ensure that construction supervisors and crews, the monitoring team, and relevant WETA staff are trained prior to the start of all pile driving activities, so that responsibilities, communication procedures, monitoring protocols, and operational procedures are clearly understood. New personnel joining during the project must be trained prior to commencing work.

Timing Restrictions

All piling activities shall be conducted between June 1 and November 30, when the likelihood of sensitive fish species being present in the work area is minimal, following U.S. Army Corps of Engineers' (USACE) Proposed Additional Procedures and Criteria for Permitting Projects under a Programmatic Determination of Not Likely to Adversely Affect Select Listed Species in California (USACE, 2018). Consistent with municipal code, noise-generating construction activities will be limited to the hours between 0700 and 1900 Monday through Friday, and 0800 and 1300 on Saturdays.

Protected Species Observers

The placement of protected species observers (PSOs) during all pile driving activities (described in the **Monitoring and Reporting** section) will ensure that the entire shutdown zone is visible. Should environmental conditions deteriorate such that the entire shutdown zone would not be visible (*e.g.,* fog, heavy rain), pile driving will be delayed until the PSO is confident marine mammals within the shutdown zone could be detected.

PSOs will monitor the full shutdown zones and the Level B harassment zones to the extent practicable. Monitoring zones provide utility for observing by establishing monitoring protocols for areas adjacent to the shutdown zones. Monitoring zones enable observers to be aware of and communicate the presence of marine mammals in the project areas outside the shutdown zones and thus prepare for a potential cessation of activity should the animal enter the relevant shutdown zone.

Pre- and Post-Activity Monitoring

Monitoring must take place from 30 minutes prior to initiation of pile driving activities (*i.e.,* pre-clearance monitoring) through 30 minutes post-completion of pile driving. Prior to the start of daily in-water construction activity, or whenever a break in pile driving of 30 minutes or longer occurs, PSOs will observe the shutdown and monitoring zones for a period of 30 minutes. The shutdown zone will be considered cleared when a marine mammal has not been observed within the zone for a 30-minute period. If a marine mammal is observed within the shutdown zones listed in Table 11, pile driving activity will be delayed or halted. If work ceases for more than 30 minutes, the pre-activity monitoring of the shutdown zones will commence. A determination that the shutdown zone is clear must be made during a period of good visibility (*i.e.,* the entire shutdown zone and surrounding waters must be visible to the naked eye).

Soft-Start Procedures for Impact Driving

Soft-start procedures provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the hammer operating at full capacity. If impact pile driving is necessary to achieve required tip elevation, WETA staff and/or contractors will be required to provide an initial set of three strikes from the hammer at reduced energy, followed by a 30-second waiting period, then two subsequent reduced-energy strike sets. Soft-start will be implemented at

the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer.

Bubble Curtain for Impact Driving

WETA plans to use a bubble curtain to mitigate effects from impact pile driving on marine mammals, and NMFS concurs with the effectiveness of this measure. Therefore, a bubble curtain will be employed during all impact installation of piles. The bubble curtain must distribute air bubbles around 100 percent of the piling circumference for the full depth of the water column. The lowest bubble ring must be in contact with the mudline for the full circumference of the ring. The weights attached to the bottom ring must ensure 100 percent substrate contact. No parts of the ring or other objects may prevent full substrate contact. Air flow to the bubblers must be balanced around the circumference of the pile.

Shutdown Zones

WETA must establish shutdown zones for all pile driving activities. The purpose of a shutdown zone is generally to define an area within which shutdown of the activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). Shutdown zones are based upon the Level A harassment zone for each pile size/type and driving method where applicable, as shown in Table 6. A minimum shutdown zone of 10 meters (m) is required for all in-water construction activities to avoid physical interaction with marine mammals. For pile driving, the radii of the shutdown zones are rounded to the next largest 10 m interval in comparison to the Level A harassment zone for each activity type. If a marine mammal is observed entering or within a shutdown zone during pile driving activity, the activity must be stopped until there is visual confirmation that the animal has left the zone or the animal is not sighted for a period of 15 minutes. Shutdown zones for each activity type are shown in Table 11.

All marine mammals will be monitored in the Level B harassment zones and throughout the area as far as visual monitoring can take place. If a marine mammal enters the Level B harassment zone, in-water activities will continue and PSOs will document the animal's presence within the estimated harassment zone.

Table 11 -- Shutdown and Harassment Zones

Method	Pile Type	Pile Size (in)	Shutdown Zone for Phocids (m)	Shutdown Zone for Otariids (m)	Level B Harassment Zone (m)
Impact, installation	Steel	36	830	60	736
Impact, installation	Steel	48	140	10	631
Vibratory, extraction*	Steel	30	40	10	4,200 W; 1,700 E
Vibratory, installation*	Steel	36	40	10	4,200 W; 1,700 E
Vibratory, installation*	Steel	48	10	10	4,200 W; 1,700 E

Note: Vibratory driving of 36 in (91.4 cm) piles used as proxy for vibratory extraction of 30 in (76.2 cm) piles.
* Constrained by bends in the Oakland Estuary and relatively shallow bathymetry near the shipping channel: 4,200 m (13,780 ft) west, 1, 700 m (5,577 ft) east

Based on our evaluation of the applicant's planned measures, NMFS has determined that the planned mitigation measures provide the means of effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Monitoring and Reporting

In order to issue an IHA for an activity, section 101(a)(5)(D) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104(a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present while conducting the activities. Effective reporting is critical both to

compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.*, presence, abundance, distribution, density);
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.*, source characterization, propagation, ambient noise); (2) affected species (*e.g.*, life history, dive patterns); (3) co-occurrence of marine mammal species with the activity; or (4) biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas);
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.*, marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and,
- Mitigation and monitoring effectiveness.

Visual Monitoring

Marine mammal monitoring must be conducted in accordance with the conditions in this section and this IHA. Marine mammal monitoring during pile driving activities

will be conducted by PSOs meeting NMFS' standards and in a manner consistent with the following:

- PSOs must be independent of the activity contractor (for example, employed by a subcontractor) and have no other assigned tasks during monitoring periods;
- At least one PSO will have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization;
- Other PSOs may substitute other relevant experience, education (degree in biological science or related field), or training for prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization;
- Where a team of three or more PSOs is required, a lead observer or monitoring coordinator must be designated. The lead observer must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization; and
- PSOs must be approved by NMFS prior to beginning any activity subject to the IHA.

PSOs should have the following additional qualifications:

- Ability to conduct field observations and collect data according to assigned protocols;
- Experience or training in the field identification of marine mammals, including the identification of behaviors;
- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;

- Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior; and
- Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

WETA will have one to three PSOs stationed at the best possible vantage points in the project area to monitor during all pile removal and driving activities. Monitoring will occur from elevated locations along the shoreline or on vessels where the entire shutdown zones are visible. PSOs will be equipped with high quality binoculars for monitoring and radios or cells phones for maintaining contact with work crews. Monitoring will be conducted 30 minutes before, during, and 30 minutes after all in-water construction activities. In addition, PSOs will record all incidents of marine mammal occurrence, regardless of distance from activity, and will document any behavioral reactions in concert with distance from piles being driven or removed. Pile driving activities include the time to install or remove a single pile or series of piles, as long as the time elapsed between uses of the pile driving equipment is no more than 30 minutes.

Pre-Construction Monitoring

In addition to monitoring on days that pile removal and driving will occur, as proposed by the applicant, WETA will conduct pre-construction monitoring. Prior to initiation of in-water construction, a qualified NMFS-approved PSO will conduct monitoring of marine mammals to update existing information on species occurrence in and near the project area, their movement patterns, and their site use. This pre-

construction monitoring will take place at least 5 days prior to the start of in-water construction and will cover a period of at least 1 week (with at least 5 days of actual observation over a period of 4 hours each day), 2 hours in the morning at the time that construction activities would begin and 2 hours at midday.

Hydroacoustic Monitoring

WETA will conduct hydroacoustic monitoring during all impact driving activities. Acoustic monitoring must be conducted in accordance with the Acoustic Monitoring Plan, to be submitted to NMFS no less than 30 days prior to commencement of pile driving activity.

The acoustic monitoring report must contain the informational elements described in the Acoustic Monitoring Plan and, at a minimum, must include:

- Hydrophone equipment and methods: recording device, sampling rate, distance (m) from the pile where recordings were made; depth of water at the pile location and recording device(s);
- Type and size of pile being driven, substrate type, method of driving during recordings (*e.g.*, hammer model and energy), and total pile driving duration;
- For all impact driving, a detailed description of the sound attenuation device used and the duration of its use per pile;
- For impact pile driving (per pile): Number of strikes and strike rate; depth of substrate to penetrate; pulse duration and mean, median, and maximum sound levels (dB re: 1 µPa): root mean square sound pressure level (SPL_{rms}), cumulative sound exposure level (SEL_{cum}), peak sound pressure level (SPL_{peak}), and single-strike sound exposure level (SEL_{s-s});
- One-third octave band spectrum and power spectral density plots (average per pile type or for each individual pile); and

- Sound measurement data shall be provided to NMFS in tabular spreadsheet format (Microsoft Excel or similar).

Reporting

WETA will provide the following reporting as necessary during active pile driving activities:

- The applicant will report any observed injury or mortality as soon as feasible and in accordance with NMFS' standard reporting guidelines. Reports will be made by phone (866-767-6114) and by email (*PR.ITP.MonitoringReports@noaa.gov*) and will include the following:
  - Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
  - Species identification (if known) or description of the animal(s) involved;
  - Condition of the animal(s) (including carcass condition if the animal is dead);
  - Observed behaviors of the animal(s), if alive;
  - If available, photographs or video footage of the animal(s); and,
  - General circumstances under which the animal was discovered.
- An annual report summarizing the prior year's activities will be provided that fully documents the methods and monitoring protocols, summarizes the data recorded during monitoring, estimates the number of listed marine mammals that may have been incidentally taken during project pile driving, and provides an interpretation of the results and effectiveness of all monitoring tasks. The annual draft report will be provided no later than 90 days following completion of construction activities. Any recommendations made by NMFS will be addressed in the final report, due after the IHA expires and including a summary of all monitoring activities, prior to acceptance by NMFS. Final

reports will follow a standardized format for PSO reporting from activities requiring marine mammal mitigation and monitoring.

- All PSOs will use a standardized data entry format (see Appendix B of the IHA application).

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be "taken" through harassment, NMFS considers other factors, such as the likely nature of any impacts or responses (*e.g.*, intensity, duration), the context of any impacts or responses (*e.g.*, critical reproductive time or location, foraging impacts affecting energetics), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS' implementing regulations (54 FR 40338, September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the baseline (*e.g.*, as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

To avoid repetition, the discussion of our analysis applies to both California sea lions and harbor seals, given that the anticipated effects of the construction activities on these different marine mammal stocks are expected to be similar. There is little

information about the nature or severity of the impacts, or the size, status, or structure of any of these species or stocks that would lead to a different analysis for these activities.

Pile driving and removal activities have the potential to disturb or displace marine mammals. Specifically, the project activities may result in take, in the form of Level A and Level B harassment, from underwater sounds generated from pile driving and removal. Potential takes could occur if individuals are present in the ensonified zone when these activities are underway.

The authorized takes by Level A and Level B harassment would be due to potential behavioral disturbance, TTS, and PTS. No mortality or serious injury is anticipated given the nature of the activity and measures designed to minimize the possibility of injury to marine mammals. The potential for harassment is minimized through the construction method and the implementation of the mitigation measures (see **Mitigation** section).

The Level A harassment zones identified in Table 11 are based upon an animal exposed to impact pile driving of multiple piles in a single day. Considering duration of impact driving each pile (up to 20 minutes) and breaks between pile installations (to reset equipment and move pile into place), this means an animal would have to remain within the area estimated to be ensonified above the Level A harassment threshold for multiple hours. This is highly unlikely given marine mammal movement throughout the area. If an animal was exposed to accumulated sound energy above the Level A harassment threshold, the resulting PTS would likely be small (*e.g.,* PTS onset) at lower frequencies where pile driving energy is concentrated, and unlikely to result in impacts to individual fitness, reproduction, or survival.

The nature of the project precludes the likelihood of serious injury or mortality. For all species and stocks, take would occur within a limited, confined area (Oakland Inner Harbor, San Francisco Bay) of the stock's range. Level A and Level B harassment

will be reduced to the level of least practicable adverse impact through use of mitigation measures described herein. Further, the amount of take authorized is extremely small when compared to stock abundance.

Behavioral responses of marine mammals to pile driving at the project site, if any, are expected to be mild and temporary. Marine mammals within the Level B harassment zone may not show any visual cues they are disturbed by activities or could become alert, avoid the area, leave the area, or display other mild responses that are not observable such as changes in vocalization patterns. Given the short duration of noise-generating activities per day and that pile driving and removal would occur across 6 consecutive days, any harassment would be temporary. There are no other areas or times of known biological importance for any of the affected species that are likely to be impacted by the planned activities.

In addition, it is unlikely that minor noise effects in a small, localized area of habitat would have any effect on the stocks' ability to recover. In combination, we believe that these factors, as well as the available body of evidence from other similar activities, demonstrate that the potential effects of the specified activities will have only minor, short-term effects on individuals. The specified activities are not expected to impact rates of recruitment or survival and will therefore not result in population-level impacts.

In summary and as described above, the following factors primarily support our determination that the impacts resulting from this activity are not expected to adversely affect any of the species or stocks through effects on annual rates of recruitment or survival:

- No serious injury or mortality is anticipated or authorized;
- The specified activities and associated ensonified areas are very small relative to the overall habitat ranges of both species;

- The project area does not overlap with known Biologically Important Areas (BIAs) or ESA-designated critical habitat;
- The lack of anticipated significant or long-term effects to marine mammal habitat;
- The presumed efficacy of the mitigation measures in reducing the effects of the specified activity; and,
- Monitoring reports from similar work in San Francisco Bay have documented little to no effect on individuals of the same species impacted by the specified activities (AECOM, 2022; AECOM, 2023).

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the monitoring and mitigation measures, NMFS finds that the total marine mammal take from the activity will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted previously, only take of small numbers of marine mammals may be authorized under sections 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted number of individuals to be taken is fewer than one-third of the species or stock abundance, the take is considered to be of small numbers. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

The amount of take NMFS has authorized is below one-third of the estimated stock abundances for both species (see Table 10). For both stocks, the authorized take of individuals is less than 0.2 percent of the abundance of the affected stock. This is likely a conservative estimate because it assumes all takes are of different individual animals, which is likely not the case. Some individuals may return multiple times in a day, but PSOs would count them as separate takes if they cannot be individually identified.

Based on the analysis contained herein of the activity (including the mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds that small numbers of marine mammals would be taken relative to the population size of the affected species or stocks.

Unmitigable Adverse Impact Analysis and Determination

There are no relevant subsistence uses of the affected marine mammal stocks or species implicated by this action. Therefore, NMFS has determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA; 16 U.S.C. 1531 *et seq*.) requires that each Federal agency insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of IHAs, NMFS consults internally whenever we propose to authorize take for endangered or threatened species.

No incidental take of ESA-listed species is authorized for this activity. Therefore, NMFS has determined that formal consultation under section 7 of the ESA is not required for this action.

National Environmental Policy Act

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq*.) and NOAA Administrative Order (NAO) 216-6A, NMFS must review our proposed action (*i.e.*, the issuance of an IHA) with respect to potential impacts on the human environment.

This action is consistent with categories of activities identified in Categorical Exclusion B4 (IHAs with no anticipated serious injury or mortality) of the Companion Manual for NAO 216-6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has determined that the issuance of this IHA qualifies to be categorically excluded from further NEPA review.

Authorization

NMFS has issued an IHA to WETA for the potential harassment of small numbers of two marine mammal species incidental to construction activities in the Oakland Inner Harbor at Alameda, California, that includes the previously explained mitigation, monitoring, and reporting requirements.

Dated: August 14, 2023.

Kimberly Damon-Randall,

Director, Office of Protected Resources,

National Marine Fisheries Service.

[FR Doc. 2023-17744 Filed: 8/17/2023 8:45 am; Publication Date: 8/18/2023]