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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648-XC585]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Replacement of Pier 302 at Naval Base Point Loma, San Diego, 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 U.S. Navy to incidentally harass, by Level B harassment only, marine mammals during construction activities associated with a Pier 302 Replacement project at Naval Base Point Loma, San Diego, California.

DATES: This authorization is effective from October 1, 2023 through September 30, 2024.

FOR FURTHER INFORMATION CONTACT: Jessica Taylor, Office of Protected Resources, NMFS, (301) 427-8401. 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/national/marine-mammal-protection/incidental-take-authorizations-construction-activities*. In case of problems accessing these documents, please call the contact listed above.

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 July 27, 2022, NMFS received a request from the U.S. Navy for an IHA to take marine mammals incidental to construction activities associated with replacing Pier 302 at Naval Base Point Loma (NBPL), San Diego, CA. Following NMFS' review of the application, the U.S. Navy submitted a revised version on September 22, 2022. The application was deemed adequate and complete on October 27, 2022. The U.S. Navy's request is for take of six species of marine mammals by Level B harassment only. Neither the U.S. Navy nor NMFS expect serious injury or mortality to result from this activity,

therefore, an IHA is appropriate. There were no changes from the proposed to the final IHA.

NMFS has previously issued IHAs to the U.S. Navy for similar work over the past 9 years at NBPL in San Diego Bay (Bay), including IHAs issued effective from September 1, 2013, through August 31, 2014 (78 FR 44539, July 24, 2013; Year 1 Project), October 8, 2014 through October 7, 2015 (79 FR 65378, November 4, 2014; Year 2 Project), October 8, 2015 through October 7, 2016 (80 FR 62032, October 15, 2015; Year 3 Project), October 8, 2016 through October 7, 2017 (81 FR 66628, September 28, 2016; Year 4 Project), October 8, 2017 through October 7, 2018 (82 FR 45811, October 2, 2017; Year 5 Project), September 15, 2020 through September 14, 2021 (85 FR 33129, June 1, 2020; Floating Dry Dock Project), October 1, 2021 through September 30, 2022 (86 FR 7993, February 3, 2021; Pier 6 Replacement Project), and January 15, 2022 through January 14, 2023 (86 FR 48986, September 1, 2021; Fuel Pier Inboard Pile Removal Project). The U.S. Navy complied with all the requirements (*e.g.*, mitigation, monitoring, and reporting) of the previous IHA and information regarding their monitoring results specific to NBPL may be found in the **Estimated Take** section.

Description of Activity

The U.S. Navy plans to replace Pier 302 at the Naval Information Warfare Center (NIWC) Pacific Bayside Complex on NBPL. Pier 302 houses the U.S. Navy marine mammal pens and support vessels. As part of the project, the U.S. Navy will use vibratory extraction to remove the existing components of marine mammal pens, and impact and vibratory hammers to install new pens. The purpose of the project is to provide the U.S. Navy's marine mammal program with adequate facilities to house its marine mammals and provide a safe working environment for personnel to support the U.S. Navy's overall mission to maintain, train, and equip combat ready Naval forces.

The Navy's activity includes impact and vibratory pile driving, which may result in the incidental take of marine mammals, by Level B harassment only. No Level A harassment is anticipated to occur, and none is authorized. Due to mitigation measures, only takes by Level B harassment are requested. NBPL is located along the mouth and northern edge of San Diego Bay, CA. The project covers an area of 9,061 feet (ft.)^2 (842 meters (m)^2). Construction activities will occur over 32 days within a 1 year window from October 1, 2023 to September 30, 2024. The Navy states that it will conduct work only in daylight hours. A detailed description of the planned construction project is provided in the **Federal Register** notice for the proposed IHA (87 FR 68442, November 15, 2022). 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 specific activity. Mitigation, monitoring, and reporting measures are described in detail later in this document (please see **Mitigation** and **Monitoring and Reporting**).

Comments and Responses

A notice of NMFS' proposal to issue an IHA to the U.S. Navy was published in the **Federal Register** on November 15, 2022 (87 FR 68442). That notice described, in detail, the U.S. Navy's activities, the marine mammal species that may be affected by the activities, and the anticipated effects on marine mammals. During the 30-day public comment period, no 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, incorporated here by reference, 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 1 lists all species or stocks for which take is expected and 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 expected to occur, 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.

There are six marine mammal species that are potentially expected to be present during all or a portion of the in-water work associated with this project in San Diego Bay, including the California sea lion (*Zalophus californianus*), the northern elephant seal (*Mirounga angustirostris*), the harbor seal (*Phoca vitulina*), the bottlenose dolphin (*Tursiops truncatus*), the Pacific white-sided dolphin (*Lagenorhynchus obliquidens*), and the common dolphin (*Delphinus delphis*). The Committee on Taxonomy (*https://marinemammalscience.org/science-and-publications/list-marine-mammal-species-subspecies/*) recently determined both the long-beaked and short-beaked common dolphin belong in the same species and we adopt this taxonomy. However, the SARs still describe the two as separate stocks, and that stock information is presented in Table 1. 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 some species, this geographic area may extend beyond U.S. waters. All stocks managed under the MMPA in this region are assessed in NMFS' U.S. Pacific 2021 SARs. All values presented in Table 2 are the most recent available at the time of publication and are available online at: *www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*).

Table 1 -- Marine Mammal Species[4] Likely Impacted by the Specified Activities

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N)[1]	Stock abundance (CV, Nmin, most recent abundance survey)[2]	PBR	Annual M/SI[3]
Order Artiodactyla – Infraorder Cetacea– Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae						
Bottlenose dolphin	*Tursiops truncatus*	California Coastal	-, -, N	453 (0.06, 346, 2011)	2.7	≥2.0
Short-beaked common dolphin	*Delphinus delphis delphis*	California/Oregon/Washington	-, -, N	1,056,308 (0.21, 888,971, 2018)	8889	≥30.5
Long-beaked common dolphin	*Delphinus delphis capensis*	California	-, -, N	83,379 (0.216, 69,636, 2018)	668	≥29.7
Pacific white-sided dolphin	*Lagenorhynchus obliquidens*	California/Oregon/Washington	-, -, N	34,999 (0.222, 29,090, 2018)	279	7
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)	14011	>320
Family Phocidae (earless seals)						
Harbor seal	*Phoca vitulina*	California	-, -, N	30,968 (N/A, 27,348, 2012)	1641	43
Northern elephant seal	*Mirounga angustirostris*	California breeding	-, -, N	187,386 (N/A, 85,369, 2013)	5122	13.7

[1] - Endangered Species Act (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.
[2]- 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; Nmin is the minimum estimate of stock abundance.
[3] - 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, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value or range. A CV associated with estimated mortality due to commercial fisheries is presented in some cases.
[4]- 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)).

As indicated above, all six species (with seven managed stocks) in Table 1 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur. While gray whales, Risso's dolphins, and Steller sea lions have been sighted around California coastal waters in the past, these species' general spatial occurrence is such that take is not expected to occur as they typically occur more offshore. Therefore, the Navy did not request, and NMFS is not authorizing take of these species.

A detailed description of the species likely to be affected by the Naval Base Point Loma Pier 302 Replacement 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 (87 FR 68442, November 15, 2022); 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 2.

Table 2 -- 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 and Holt, 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 the Navy's pile driving 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 (87 FR 68442, November 15, 2022) included a discussion of the effects of anthropogenic noise on marine mammals and the potential effects of underwater noise from the Navy's pile driving 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 (87 FR 68442, November 15, 2022).

Estimated Take

This section provides an estimate of the number of incidental takes authorized through this IHA, which has 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 will be by Level B harassment only, in the form of disruption of behavioral patterns for individual marine mammals resulting from exposure to the acoustic sources. Based on the nature of the activity and the anticipated effectiveness of the mitigation measures (*i.e.*, vibratory or impact pile driving and removal) discussed in

detail below in the **Mitigation** section. Level A harassment is neither anticipated nor authorized.

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

For acoustic impacts, 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 permanent threshold shift (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, 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 pressure received 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.

The Navy's construction activities include the use of continuous (vibratory pile-driving) and impulsive (impact pile-driving) sources, and therefore the RMS SPL threshold of 160 dB re 1 μPa is applicable for impulsive noise. For continuous noise, the RMS SPL threshold of 129.6 dB re 1 μPa is applicable as a de facto harassment threshold, based upon measured noise data for San Diego Bay as referenced in the Description of Activity section in the notice for the proposed IHA (87 FR 68442, November 15, 2022).

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). The Navy's activity includes the use of impulsive (impact hammer) and non-impulsive (vibratory hammer) sources.

These thresholds are provided in the table 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 3 -- Thresholds Identifying the Onset of Permanent Threshold Shift

	PTS Onset Thresholds* (Received Level)	
Hearing Group	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	*Cell 1* $L_{p,0\text{-pk,flat}}$: 219 dB $L_{E,p,\text{LF,24h}}$: 183 dB	*Cell 2* $L_{E,p,\text{LF,24h}}$: 199 dB
Mid-Frequency (MF) Cetaceans	*Cell 3* $L_{p,0\text{-pk,flat}}$: 230 dB $L_{E,p,\text{MF,24h}}$: 185 dB	*Cell 4* $L_{E,p,\text{MF,24h}}$: 198 dB
High-Frequency (HF) Cetaceans	*Cell 5* $L_{p,0\text{-pk,flat}}$: 202 dB $L_{E,p,\text{HF,24h}}$: 155 dB	*Cell 6* $L_{E,p,\text{HF,24h}}$: 173 dB
Phocid Pinnipeds (PW) (Underwater)	*Cell 7* $L_{p,0\text{-pk.flat}}$: 218 dB $L_{E,p,\text{PW,24h}}$: 185 dB	*Cell 8* $L_{E,p,\text{PW,24h}}$: 201 dB
Otariid Pinnipeds (OW) (Underwater)	*Cell 9* $L_{p,0\text{-pk,flat}}$: 232 dB $L_{E,p,\text{OW,24h}}$: 203 dB	*Cell 10* $L_{E,p,\text{OW,24h}}$: 219 dB

* Dual metric 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 are recommended for consideration. *Note*: Peak sound pressure level ($L_{p,0\text{-pk}}$) has a reference value of 1 µPa, and weighted cumulative sound exposure level ($L_{E,p}$) has a reference value of 1µPa^{2}s. In this Table, thresholds are abbreviated to be more reflective of International Organization for Standardization standards (ISO, 2017). The subscript "flat" is being included to indicate peak sound pressure are flat weighted or unweighted within the generalized hearing range of marine mammals (*i.e.*, 7 Hz to 160 kHz). 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 weighted 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 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 coefficient.

The sound field in the project area is the existing background noise plus additional construction noise from the project. Marine mammals are expected to be affected by sound generated by the primary components of the project (*i.e.,* impact and vibratory pile driving).

In order to calculate distances to the Level A harassment and Level B harassment thresholds for the methods and piles being used in this project, the Navy used acoustic monitoring data from various similar locations to develop source levels for the different pile types, sizes, and methods planned for use (Table 4).

Table 4 -- Source Levels for Removal and Installation Activities

Method	Pile Size/Type	Peak Sound Pressure (dB re 1 µPa)[1]	Mean Maximum RMS SPL (dB re 1 µPa)[1]	SEL (dB re 1 µPa2 sec) [1]	Source
Pile Removal Activities					
Vibratory Extraction	18" Octagonal Concrete [2]	-	162 [3]	-	NAVFAC SW, 2022
	18" Steel Pipe	-	156 [4]	-	Denes *et al.,* 2016
Pile Installation Activities					
Impact Pile Driving	24" Octagonal Concrete	188	176	166	Caltrans, 2020
	14" Square Concrete	183	166	154	Caltrans, 2020
Vibratory Hammer	6" Round Steel [5]	171	155	155	Illingworth and Rodkin, 2007

[1] As measured, or calculated, at 10 m (33 ft).
[2] In the absence of information on vibratory extraction of 18-inch octagonal concrete piles, source data from 20-inch concrete square piles NAVFAC SW (2022) was used as a proxy source level.
[3] The maximum mean calculated source value for 20-inch square concrete piles (NAVFAC SW, 2022) was 162 dB RMS based on unpublished data from the Pier 6 Replacement Project.
[4] Table 20 in Denes *et al.* (2016) records a value of 152.4 dB RMS at 17 m (56 ft) for vibratory extraction. This data point, and a transmission loss of 15LogR, was used to back-calculate a value of 155.9 dB RMS at 10 m (33 ft) (rounded to 156 dB RMS).
[5] In the absence of information on vibratory installation of 6-inch round steel piles, source data from 12-inch round steel piles (Illingworth & Rodkin, 2017) was used as a proxy source level.
Abbreviations: µPa = microPascal; dB = decibel; RMS = root mean square; SPL = sound pressure level; m= meters; SEL = sound exposure level.

Level B Harassment Zones

Transmission loss (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 and topography. The general formula for underwater TL is:

TL = B * Log10 (R1/R2), where

TL = transmission loss in dB

B = transmission loss coefficient; for practical spreading equals 15

R1 = the distance of the modeled SPL from the driven pile, and

R2 = 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, which is the most appropriate assumption for the Navy's activities. The Level B harassment zones and areas of zones of influence (ZOIs) for the Navy's activities are shown in Table 5.

Table 5 -- Distance to Level B harassment thresholds and ZOI areas

Method	Pile Size/Type	Maximum RMS SPL (dB re 1 µPa)[1]	Projected radial distance to Level B harassment thresholds and ensonified area [1,2]	
			Distance m	Area km^2
Pile Removal Activities				
Vibratory Extraction	18" Octagonal Concrete	162	1,445	3.13
	18" Steel Pipe	156	575	0.68
Pile Installation Activities				
Impact Pile Driving [3]	24" Octagonal Concrete	176	117	0.041
Impact Pile Driving	14" Square Concrete	166	25	<0.01

Vibratory Hammer	6" Round Steel	155	494	0.45

[1] The Level B ZOIs for continuous pile removal and installation activities are based on the distance for noise to decay to ambient levels (129.6 dB re 1µPa), while 160 dB was used for impulsive sound.
[2] Assumes Practical Spreading Loss.
[3] With or without High-pressure Water Jetting.
Abbreviations: dB re 1 µPa = decibels referenced to a pressure of 1 microPascal, km^2 = square kilometers, m = meters, ft = feet, RMS = root mean square, ZOI = Zone of Influence.

Level A Harassment Zones

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, such as pile installation or removal, 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. The isopleths generated by the User Spreadsheet used the same TL coefficient as the Level B harassment zone calculations (*i.e.,* the practical spreading value of 15). Inputs used in the User Spreadsheet (*e.g.,* number of piles per day, duration and/or strikes per pile) are presented in Table 1 of the notice for the proposed IHA (87 FR 68442, November 15, 2022). The maximum RMS SPL/SEL SPL and resulting isopleths are reported below in Table 6. The maximum RMS SPL value was used to calculate Level A harassment isopleths for

vibratory pile driving and extraction activities, while the single strike SEL SPL value was used to calculate Level A isopleths for impact pile driving activities.

Table 6 -- Distances to Level A Harassment Thresholds

Method	Pile Size/Type	Maximum RMS SPL (dB re 1 µPa)[1]	Single strike SEL (dB re 1 µPa^2 sec) [1]	Duration (hrs/day)	Project distances to Level A thresholds (m)		
					MF	PW	OW
	Pile Removal Activities						
Vibratory Extraction	18" Octagonal Concrete [2]	162	N/A	1.25	0.8	5.6	0.4
	18" Steel Pipe	156 [2]	N/A	0.25	0.1	0.8	0.1
	Pile Installation Activities						
Impact Pile Driving	24" Octagonal Concrete	176	166	1.33	4.1	62.4 [3]	4.5
	14" Square Concrete	166	154	0.25	0.2	2.5	0.2
Vibratory Hammer	6" Round Steel	155	155	0.07	0.0	0.3	0.0

[1] As measured at 10 m (33 ft.).
[2] Table 20 in Denes *et al.* (2016) records a value of 152.4 dB RMS at 17 m (56 ft.) for vibratory extraction. This data point, and a transmission loss of 15LogR, was used to back-calculate a value of 156 dB RMS at 10 m (33 ft.).
[3] Value is greater than the standard shutdown zone of 20 m (see **Mitigation** section) and will be monitored as shutdown zone to ensure no Level A takes of harbor seals or northern elephant seals occur during impact pile driving of 24-inch octagonal concrete piles.
Abbreviations: RMS = root mean square, dB re 1 µPa = decibels referenced to a pressure of 1 microPascal, m = meters, ft = feet, SEL = sound exposure level, MF = mid-frequency cetaceans, PW = phocid pinnipeds, OW = otariid pinnipeds.

Marine Mammal Occurrence

In this section, we provide information about the occurrence of marine mammals, including density or other relevant information that will inform the take calculations. Unless otherwise specified, the term “pile driving” in this section, and all following sections, may refer to either pile installation or removal. NMFS has carefully reviewed the Navy’s analysis and concludes that it represents an appropriate and accurate method for estimating incidental take that may be caused by the Navy’s activities.

Daily occurrence estimates of marine mammals in the project area are based upon the Year 4 IHA monitoring report from the Fuel Pier Replacement Project (NAVFAC

SW, 2017b). Year 4 is expected to be most representative of typical species occurrences as this monitoring period had the highest number of activity days and the highest average number of animals observed per day for the three most common species in the area (California sea lion, harbor seal, bottlenose dolphin), with the exception of Year 2. However, Year 2 was an El Niño year and not considered representative of typical species occurrences. The Year 2 monitoring report data was used for any species not observed in Year 4 (common dolphin, Pacific white-sided dolphin, northern elephant seal) (NAVFAC SW, 2015) (Table 7). Years 1, 3, and 5 included significantly less monitoring effort than Years 2 and 4, and may also not be representative of typical species richness and occurrences.

Table 7 -- Total and Daily Species Occurrences During Years 2 and 4 IHA Monitoring

Species	Year 2 IHA (100 monitoring days; El Nino year)		Year 4 IHA (152 monitoring days)	
	Total observed	Average per day	Total observed	Average per day
California sea lion	7,507	75.1	2,263	14.9 *
Harbor seal	248	2.5	88	0.6 *
Bottlenose dolphin	695	7	67	0.4 *
Common dolphin	850	8.5 *	N/a	N/a
Pacific white-sided dolphin	27	0.3 *	N/a	N/a
Northern elephant seal	1 [1]	1 [1]	N/a	N/a

*Mean estimate used for daily occurrences for current analysis.
[1] Same individual hauled out each day.

Year 4 monitoring consisted of the longest effort of all 5 IHA years for the Navy Fuel Pier Replacement Project, and daily occurrence estimates for California sea lions, harbor seals, and bottlenose dolphins were selected from this year. Common dolphins, Pacific white-sided dolphins, and northern elephant seals were not sighted in Year 4; however, these species were sighted in Year 2 monitoring. Pacific white-sided dolphins were only sighted during this year. Daily occurrence estimates for common dolphins and Pacific white-sided dolphins were selected from Year 2. Only one northern elephant seal

was sighted during the Year 2 monitoring, and the same individual was hauled out each day. Using a daily occurrence estimate from past monitoring was, therefore, not an accurate approach for estimating occurrence of northern elephant seals. Past monitoring efforts, including the one northern elephant seal sighted during Year 2 monitoring and a sighting north of the project area, (McConchie, 2015; NAVFAC SW, 2015) documented a total of two juvenile northern elephant seals in the project area, as described in the Description of Marine Mammals in Areas of Specified Activities section in the proposed IHA (87 FR 68442, November 15, 2022). Due to increasing stock numbers, there is a reasonable probability that this species could be sighted in the project area during construction activities. Instead of using past monitoring data to estimate daily occurrence, it is expected that two northern elephant seals may be observed in the project area during construction activities, based upon previous sighting data. The Navy added a buffer of five seals to this estimate for a total of seven expected elephant seals in the area during construction activities, and NMFS agrees with this approach.

Monitoring during Year 4 yielded an observation of 2,263 California sea lions over the course of the 152-day monitoring period. These observations equate to an average of 14.9 California sea lions observed per day, and approximately 15 California sea lions expected to be in the vicinity of Pier 302, when this estimate is rounded.

Based upon monitoring during Year 4, 88 harbor seals were observed over the course of the 152-day monitoring period. These observations equate to an average of 0.6 harbor seals observed per day, and approximately 1 seal per day expected to be in the vicinity of Pier 302 when this estimate is rounded.

Monitoring during Year 4 yielded an observation of 67 bottlenose dolphins in the project area over the course of the 152-day monitoring period. This observation equates to an average of 0.4, or 1 if rounded, bottlenose dolphins expected to be in the vicinity of Pier 302 each day of the construction activities.

During Year 2 monitoring, 850 common dolphins were sighted in the project area over the course of the 152-day monitoring period. This equates to an average of 8.5 common dolphins observed per day. When rounded to the nearest whole number, 9.0 individuals are expected to be sighted per day in the vicinity of Pier 302.

Monitoring during Year 2 documented 7 sightings of Pacific white-sided dolphins, comprising 27 individuals, with an average of 0.28 individuals sighted per day of monitoring. Rounding this estimate to the nearest whole number leads to 1.0 individual per day to be expected to be in the vicinity of Pier 302 during the construction activities.

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.

Daily occurrence estimates were multiplied by the number of days of pile removal and installation (32 days) to calculate estimated take by Level B harassment of California sea lions, harbor seals, bottlenose dolphins, common dolphins, Pacific white-sided dolphins, and northern elephant seals (Table 8).

Table 8 -- Authorized Takes by Level B Harassment and Percent of Stock Authorized for Take

Species	Expected Daily Average Individuals	Authorized Take by Level B Harassment	Percentage of Stock Authorized for Take
California sea lion [1]	15	480	0.19
Harbor seal [1]	1	32	0.10
Bottlenose dolphin [1]	1	32	7.1
Common dolphin (long and short beaked) [2]	9	288	0.35*
Pacific white-sided dolphin [2]	1	32	0.09
Northern elephant seal	-[3]	7	0.004

[1] Average daily counts based on observations during Year 4 Fuel Pier Replacement Project Monitoring (NAVFAC SW, 2017b).

[2] Average daily counts based on observations during Year 2 Fuel Pier Replacement Project Monitoring (NAVFAC SW, 2015).
[3] Expected potential of two northern elephant seals over the duration of project activity with a +5 buffer for Level B Take.
* Percent population calculated for each stock of common dolphins. Percentage in the table represents the percent of take of long-beaked common dolphins as this would be a greater percentage than if all take were attributed to short-beaked common dolphins (0.03 percent).

By using the sighting-based approach, take values are not affected by the estimated harassment distances from Tables 5 and 6. Given the very small Level A harassment isopleths for all species and mitigation measures, no take by Level A harassment is anticipated or authorized.

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.

Shutdown Zones

Before the commencement of in-water construction activities, the Navy will establish shutdown zones for all activities. The purpose of a shutdown zone is 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). During all in-water construction activities, the Navy will implement a standard 20 m (66 ft) shutdown zone, with the exception of a 70 m (230 ft) zone for phocids during the use of impact pile driving for the 24-inch octagonal concrete piles. These distances exceed the estimated Level A harassment distances (Table 10). During the impact installation of the 24-inch octagonal concrete piles, the shutdown zone for phocids will be buffered to 70 m (230 ft) to encompass the Level A harassment zone. Adherence to this expanded shutdown zone will avoid the potential for the take of phocids by Level A harassment during impact pile driving. If a marine mammal enters a buffered shutdown zone, in-water activities will be stopped until visual confirmation that the animal has left the zone or the animal is not sighted for 15 minutes.

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 the animal's presence within the estimated harassment zone will be documented.

The Navy will also establish shutdown zones for all marine mammals for which take has not been authorized or for which incidental take has been authorized, but the authorized number of takes has been met. These zones are equivalent to the Level B

harassment zones for each activity. If a marine mammal species not covered under this IHA enters the shutdown zone, all in-water activities will cease until the animal leaves the zone or has not been observed for at least 1 hour, and NMFS will be notified about species and precautions taken. Pile removal will proceed if the non-IHA species is observed to leave the Level B harassment zone or if 1 hour has passed since the last observation.

If shutdown and/or clearance procedures would result in an imminent safety concern, as determined by the Navy, the in-water activity will be allowed to continue until the safety concern has been addressed, and the animal will be continuously monitored. The Navy Point of Contact (POC) will be consulted before re-commencing activities.

Table 9 -- Shutdown Zones and Level B Harassment Zones

Method	Pile Size/Type	Shutdown Zones m (ft)			Level B Harassment Zones m (ft)
		MF	PW	OW	
Pile Removal Activities					
Vibratory Extraction	18" Octagonal Concrete	20 (66)	20 (66)	20 (66)	1,445 (4,742)
	18" Steel Pipe	20 (66)	20 (66)	20 (66)	575 (1,888)
Pile Installation Activities					
Impact Pile Driving	24" Octagonal Concrete	20 (66)	70[1] (230)	20 (66)	117 (383)
	14" Square Concrete	20 (66)	20 (66)	20 (66)	25 (82)
Vibratory Hammer	6" Round Steel	20 (66)	20 (66)	20 (66)	494 (1,619)

[1] Level A ZOI buffered from 62.5 m up to 70 m.

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.

Pre-Activity Monitoring

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 that 30-minute period. If a marine mammal is observed within the shutdown zones listed in Table 10, 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

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. For impact pile driving, 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.

Based on our evaluation of the applicant's measures, NMFS has determined that the 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 during pile driving activities will be conducted by PSOs meeting NMFS' following requirements:

- Independent PSOs (*i.e.,* not construction personnel) who have no other assigned tasks during monitoring periods will be used;
- 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 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; and
- A minimum of two PSOs must be on duty for all in-water construction activities. A lead observer or monitoring coordinator must be designated to coordinate monitoring and log project and monitoring activity data. The lead observer must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization.
- PSOs must be approved by NMFS prior to beginning any activity subject to this IHA.

PSOs will 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.

The Navy will have at least two PSOs stationed at the best possible vantage points in the project area to monitor during all pile driving activities. If a PSO sights a marine mammal in the shutdown zone, the PSO must alert the "command" PSO to notify the equipment operator to shut down. If the "command" PSO does not respond, any PSO has the authority to notify the need for a shutdown. If the "command" PSO calls for a shutdown, the "command" PSO will let the contractor know when activities can re-commence. Additional PSOs may be employed during periods of low or obstructed visibility to ensure the entirety of the shutdown zones are monitored. A marine mammal monitoring plan has been submitted to NMFS for approval.

Reporting

A draft marine mammal monitoring report will be submitted to NMFS within 90 days after the completion of pile driving activities, or 60 days prior to a requested date of issuance of any future IHAs for the project, or other projects at the same location, whichever comes first. A final report must be prepared and submitted within 30 calendar

days following receipt of any NMFS comments on the draft report. If no comments are received from NMFS within 30 calendar days of receipt of the draft report, the report shall be considered final. All draft and final monitoring reports must be submitted to *PR.ITP.MonitoringReports@noaa.gov* and *itp.taylor@noaa.gov*. The marine mammal monitoring report will include an overall description of work completed, a narrative regarding marine mammal sightings, and associated PSO data sheets. Specifically, the report will include:

- Dates and times (begin and end) of all marine mammal monitoring;
- Construction activities occurring during each daily observation period, including: (a) How many and what type of piles were driven or removed and the method (*i.e.,* impact or vibratory); and (b) the total duration of time for each pile (vibratory driving) number of strikes for each pile (impact driving);
- PSO locations during marine mammal monitoring; and
- Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance.

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. Specifically, PSOs will record the following:

- Name of PSO who sighted the animal(s) and PSO location and activity at time of sighting;
- Time of sighting;

- Identification of the animal(s) (*e.g.,* genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species;
- Distance and location of each observed marine mammal relative to the pile being driven or hole being drilled for each sighting;
- Estimated number of animals (min/max/best estimate);
- Estimated number of animals by cohort (adults, juveniles, neonates, group composition, *etc.*);
- Description of any marine mammal behavioral observations (*e.g.,* observed behaviors such as feeding or traveling), including an assessment of behavioral responses thought to have resulted from the activity (*e.g.,* no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching).

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the Navy will report the incident to the Office of Protected Resources (OPR) (*PR.ITP.MonitoringReports@noaa.g*ov), NMFS and to the West Coast regional stranding network (866-767-6114) as soon as feasible. If the death or injury was clearly caused by the specified activity, the Navy will immediately cease the specified activities until NMFS is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of the IHAs. The Navy will not resume their activities until notified by NMFS.

The report will include the following information:

1. Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);

2. Species identification (if known) or description of the animal(s) involved;

3. Condition of the animal(s) (including carcass condition if the animal is dead);

4. Observed behaviors of the animal(s), if alive;

5. If available, photographs or video footage of the animal(s); and

6. General circumstances under which the animal was discovered.

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 all the species listed in Table 1, given that the anticipated effects of this activity 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 this activity.

Level A harassment is extremely unlikely given the small size of the Level A harassment isopleths and the required mitigation measures designed to minimize the possibility of injury to marine mammals. No mortality is anticipated given the nature of the activity.

Pile installation 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 impact and vibratory pile installation, and vibratory pile removal activities. Potential takes could occur if individuals move into the ensonified zones when these activities are underway.

The takes from Level B harassment will be due to potential behavioral disturbance. No serious injury or mortality is anticipated for any stocks presented in this analysis given the nature of the activity and mitigation measures designed to minimize the possibility of injury. The potential for harassment is minimized through construction methods and the implementation of planned mitigation strategies (see **Mitigation** section).

Take will occur within a limited, confined area of each stock's range. 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.

No marine mammal stocks for which incidental take authorization is authorized are listed as threatened or endangered under the ESA or determined to be strategic or depleted under the MMPA. The relatively low marine mammal occurrences in the area, small shutdown zones, and planned monitoring make injury takes of marine mammals unlikely. The shutdown zones will be thoroughly monitored before the vibratory pile

installation and removal begins, and construction activities will be postponed if a marine mammal is sighted within the shutdown zone. There is a high likelihood that marine mammals will be detected by trained observers under environmental conditions described for the project. Limiting construction activities to daylight hours will also increase detectability of marine mammals in the area. Therefore, the mitigation and monitoring measures are expected to eliminate the potential for injury and Level A harassment as well as reduce the amount and intensity for Level B behavioral harassment. Furthermore, the pile installation and removal activities analyzed here are similar to, or less impactful than, numerous construction activities conducted in other similar locations which have occurred with no reported injuries or mortality to marine mammals, and no known long-term adverse consequences from behavioral harassment.

Anticipated and authorized takes are expected to be limited to short-term Level B harassment (behavioral disturbance) as construction activities will occur over the course of 32 weeks. Effects on individuals taken by Level B harassment, based upon reports in the literature as well as monitoring from other similar activities, may include increased swimming speeds, increased surfacing time, or decreased foraging (*e.g.,* Thorson and Reyff, 2006; NAVFAC SW, 2018b). Individual animals, even if taken multiple times, will likely move away from the sound source and be temporarily displaced from the area due to elevated noise level during pile removal. Marine mammals could also experience TTS if they move into the Level B monitoring zone. TTS is a temporary loss of hearing sensitivity when exposed to loud sound, and the hearing threshold is expected to recover completely within minutes to hours. Thus, it is not considered an injury. While TTS could occur, it is not considered a likely outcome of this activity. Repeated exposures of individuals to levels of sounds that could cause Level B harassment are unlikely to considerably significantly disrupt foraging behavior or result in significant decrease in

fitness, reproduction, or survival for the affected individuals. In all, there will be no adverse impacts to the stock as a whole.

The project is not expected to have significant adverse effects on marine mammal habitat. There are no Biologically Important Areas or ESA-designated critical habitat within the project area, and the activities will not permanently modify existing marine mammal habitat. The activities may cause fish to leave the area temporarily. This could impact marine mammals' foraging opportunities in a limited portion of the foraging range, however, due to the short duration of activities and the relatively small area of affected habitat, the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences.

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 would have only minor, short-term effects on individuals. The specified activities are not expected to impact reproduction or survival of any individual marine mammals, much less affect rates of recruitment or survival and would 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 or Level A harassment is anticipated or authorized;
- The specified activity and associated ensonified areas are very small relative to the overall habitat ranges of all species;
- Biologically important areas or critical habitat have not been identified within the project area;

- The lack of anticipated significant or long-term effects to marine mammal habitat;
- The Navy is required to implement mitigation measures to minimize impacts, such as PSO observation and shutdown zones of 20 m (66 ft); and,
- Monitoring reports from similar work in San Diego Bay have documented little to no effect on individuals of the same species impacted by the specified activities.

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 authorized activity will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted previously, only small numbers of incidental take 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 all seven species (refer back to Table 8). For most requested species, the authorized take of individuals is less than 1 percent of the abundance of the affected stock (with exception for bottlenose dolphins at 7.1 percent). 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 will count them as separate takes if they cannot be individually identified.

Based on the analysis contained herein of the authorized activity (including the mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds that small numbers of marine mammals will 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 or expected to result from 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 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 NOAA Administrative Order 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 the IHA qualifies to be categorically excluded from further NEPA review.

Authorization

NMFS has issued an IHA to the U.S. Navy for the potential harassment of small numbers of six marine mammal species incidental to construction activities associated with the Naval Base Point Loma Pier 302 Replacement Project in San Diego, California., provided the previously mentioned mitigation, monitoring, and reporting requirements are followed.

Dated: January 27, 2023.

Kimberly Damon-Randall,

Director, Office of Protected Resources,

National Marine Fisheries Service.

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