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Dated: May 30, 2024.

Sharon H Yuan,

Counselor and Chief Negotiator for IPEF.

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DEPARTMENT OF COMMERCE**National Oceanic and Atmospheric Administration**

[RTID 0648-XD889]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to U.S. Navy Maintenance and Pile Replacement Project in Puget Sound, Washington

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

ACTION: Notice; issuance of incidental harassment authorizations.

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 United States Navy (Navy) to incidentally harass marine mammals during construction activities associated with the Naval Facilities Engineering Command Northwest (NAVFAC NW) Maintenance and Pile Replacement (MPR) project in Puget Sound, Washington.

DATES: These authorizations are effective from July 1, 2024 through June 30, 2025 and July 1, 2025 through June 30, 2026.

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/national/marine-mammal-protection/incidental-take-authorizations-construction-activities>. In case of problems accessing these documents, please call the contact listed below.

FOR FURTHER INFORMATION CONTACT: Kate Fleming, 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 monitoring and reporting of the takings. The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

Summary of Request

On October 5, 2023, NMFS received a request from the Navy for two consecutive 1-year IHAs to take marine mammals incidental to construction associated with the Navy’s NAVFAC NW MPR project in Puget Sound, Washington. Following NMFS’ review of the application, the Navy submitted a revised version on December 14, 2023, additional information on January 10, 2024, and the marine mammal monitoring plan on January 23, 2024. Final revisions to both the application and the marine mammal monitoring plan were provided on March 2, 2024. The application was deemed adequate and complete on February 27, 2024. The Navy’s request is for take of 10 species of marine mammals by Level B harassment and, for harbor seal, Level B and Level A harassment. Neither the Navy nor NMFS expect serious injury or mortality to result from this activity. Therefore, IHAs are appropriate.

NMFS previously issued a regulation and associated Letters of Authorization (LOAs) to the Navy for related work (84 FR 15963, April 17, 2019); <https://www.fisheries.noaa.gov/action/incidental-take-authorization-us-navy-marine-structure-maintenance-and-pile-replacement-wa>. The Navy complied with all the requirements (*e.g.*, mitigation, monitoring, and reporting) of the previous LOAs, and information regarding their monitoring results may be found in the Effects of Specified Activities on Marine Mammals and Their Habitat of the **Federal Register** Notice for the proposed IHA. Please refer to the notice of proposed IHAs (89 FR 25580, April 11, 2024).

There are no changes from the Proposed IHAs to the Final IHAs.

Description of the Specified Activity*Overview*

Maintaining existing wharfs and piers is vital to sustaining the Navy’s mission and ensuring readiness. To ensure continuance of necessary missions at the four installations, the Navy must conduct annual maintenance and repair activities at existing marine waterfront structures, including removal and replacement of piles of various types and sizes. The Navy refers to this program as the Marine Structure MPR program.

The activities that have the potential to take marine mammals by Level A harassment and Level B harassment include installation and/or removal of timber, concrete, and steel piles by vibratory and impact pile driving and down-the hole (DTH) drilling. Construction will span the course of 2 years, with the first year beginning on July 15, 2024, and lasting through July 14, 2025. The second year of construction activities will begin July 15, 2025, and continue through July 14, 2026.

A detailed description of the planned construction project is provided in the **Federal Register** notice for the proposed IHAs (89 FR 25580, April 11, 2024). 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.

Comments and Responses

A notice of NMFS’ proposal to issue an IHA to the Navy was published in the **Federal Register** on April 11, 2024 (89 FR 25580). That notice described, in detail, the Navy’s activity, the marine mammal species that may be affected by the activity, 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, the Bureau of Land Management noted that they “do not have additional comments to submit at this time.” NMFS received no other public comments.

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; <https://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 both IHAs, 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. Alaska and Pacific SARs. All values presented in table 1 are the most recent available at the time of publication (including from the draft 2023 SARs) and are available online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>.

TABLE 1—MARINE MAMMAL SPECIES⁴ LIKELY TO BE AFFECTED BY THE SPECIFIED ACTIVITIES

Common name	Scientific name	Stock	ESA/MMPA status; strategic (Y/N) ¹	Stock abundance (CV, N _{min} , most recent abundance survey) ²	PBR	Annual M/SI ³
Order Artiodactyla—Cetacea—Mysticeti (baleen whales)						
<i>Family Eschrichtiidae:</i>						
Gray Whale	<i>Eschrichtius robustus</i>	Eastern N Pacific	-, -, N	26,960 (0.05, 25,849, 2016).	801	131
<i>Family Balaenopteridae (rorquals)</i>						
Humpback Whale	<i>Megaptera novaeangliae</i>	Central America/Southern Mexico—CA/OR/WA.	E, D, Y	1,494 (0.171, 1,284, 2021).	3.5	14.9
		Mainland Mexico—CA/OR/WA	T, D, Y	3,477 (0.101, 3,185, 2018).	43	22
		Hawai’i	-, -, N	11,278 (0.56, 7,265, 2020).	127	27.09
Minke Whale	<i>Balaenoptera acutorostrata</i>	CA/OR/WA	-, -, N	915 (0.792, 509, 2018) ...	4.1	0.19
Odontoceti (toothed whales, dolphins, and porpoises)						
<i>Family Delphinidae:</i>						
Killer Whale	<i>Orcinus orca</i>	Eastern North Pacific Southern Resident.	E, D, Y	73 (N/A, 73, 2022)	0.13	0
		West Coast Transient	-, -, N	349 ⁵ (N/A, 349, 2018)	3.5	0.4
<i>Family Phocoenidae (porpoises):</i>						
Dall’s Porpoise	<i>Phocoenoides dalli</i>	CA/OR/WA	-, -, N	16,498 (0.61, 10,286, 2018).	99	≥0.66
Harbor Porpoise	<i>Phocoena phocoena</i>	Washington Inland Waters	-, -, N	11,233 (0.37, 8,308, 2015).	66	≥7.2

TABLE 1—MARINE MAMMAL SPECIES⁴ LIKELY TO BE AFFECTED BY THE SPECIFIED ACTIVITIES—Continued

Common name	Scientific name	Stock	ESA/ MMPA status; strategic (Y/N) ¹	Stock abundance (CV, N _{min} , most recent abundance survey) ²	PBR	Annual M/SI ³
Order Carnivora—Pinnipedia						
<i>Family Otariidae (eared seals and sea lions):</i>						
CA Sea Lion	<i>Zalophus californianus</i>	U.S.	- , - , N	257,606 (N/A, 233,515, 2014).	14,011	>321
Steller Sea Lion	<i>Eumetopias jubatus</i>	Eastern	- , - , N	36,308 ⁶ (N/A, 36,308, 2022).	2,178	93.2
<i>Family Phocidae (earless seals):</i>						
Harbor Seal	<i>Phoca vitulina</i>	Washington Inland Hood Canal Washington Northern Inland Waters.	- , - , N - , - , N	3,363 (0.16, 2,940, 2019) 16,451 (0.07, 15,462, 2019).	88 928	2 40
Northern Elephant Seal	<i>Mirounga angustirostris</i>	CA Breeding	- , - , N	187,386 (N/A, 85,369, 2013).	5,122	13.7

¹ 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 SARs online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region>. CV is coefficient of variation; N_{min} 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.

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/>).

⁵ Nest is based upon count of individuals identified from photo-ID catalogs in analysis of a subset of data from 1958–2018.

⁶ Nest is best estimate of counts, which have not been corrected for animals at sea during abundance surveys. Estimates provided are for the U.S. only.

A detailed description of the species likely to be affected by the Navy's NAVFAC NW MPR 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 IHAs (89 FR 25580, April 11, 2024); 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 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, <i>Kogia</i> , river dolphins, Cephalorhynchid, <i>Lagenorhynchus cruciger</i> & <i>L. australis</i>).	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.

Effects of Specified Activities on Marine Mammals and Their Habitat

The effects of underwater noise from the Navy'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 IHAs (89 FR 25580, April 11, 2024) included a discussion of the effects of anthropogenic noise on marine mammals and the potential effects of underwater noise from the Navy's construction on marine mammals and their habitat. That information and analysis is referenced in this final IHA determination and is not repeated here; please refer to the notice of proposed IHAs (89 FR 25580, April 11, 2024).

Estimated Take

This section provides an estimate of the number of incidental takes authorized through the IHAs, which will inform 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 primarily be by Level B harassment, as use of the acoustic sources (*i.e.*, impact and vibratory pile driving and removal and DTH drilling) has the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for auditory injury (Level A harassment) to result, primarily for phocids because predicted auditory injury zones are larger than for mid-frequency cetacean species and/or otariids, and they can be difficult to detect. Auditory injury is unlikely to occur for mid, low, and high-frequency cetacean species and otariids. The planned mitigation and monitoring measures are expected to minimize the

severity of the taking to the extent practicable.

As described previously, no serious injury or mortality is anticipated or authorized for this activity. Below, we describe how the 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 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 (c) of 120 dB (re 1 μ Pa) for continuous (*e.g.*, vibratory pile driving, drilling) and above root mean square (RMS) sound pressure level (SPL) 160 dB re 1 μ Pa 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 activity includes the use of continuous (vibratory pile driving and removal and DTH drilling) and impulsive (impact pile driving and DTH drilling) sources, and therefore the RMS SPL thresholds of 120 and 160 dB re 1 μ Pa is applicable, respectively.

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 pile driving and DTH drilling) and non-impulsive (vibratory pile driving and removal) 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: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance>.

TABLE 3—THRESHOLDS IDENTIFYING THE ONSET OF PERMANENT THRESHOLD SHIFT

Hearing group	PTS onset acoustic thresholds* (received level)	
	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; $L_{E,F,24h}$: 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 μ Pa, and SEL_{cum} (L_E) has a reference value of 1 μ Pa²s. In this table, thresholds are abbreviated to reflect American National Standards Institute (ANSI) 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 SEL_{cum} 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 SEL_{cum} 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.

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 via sound generated by the primary components of the project (*i.e.*, pile driving and removal and DTH drilling).

The project includes vibratory pile installation and removal, impact pile driving, and DTH drilling in year 1 and vibratory pile installation and removal and impact pile driving in year 2. Source levels for these activities are based on reviews of measurements of the same or similar types and dimensions of piles available in the literature. Source levels for each pile size and activity each year are presented in table 4. Source levels for vibratory installation and removal of piles of the

same diameter are assumed to be the same.

NMFS recommends treating DTH systems as both impulsive and continuous, non-impulsive sound source type simultaneously. Thus, impulsive thresholds are used to evaluate Level A harassment, and continuous thresholds are used to evaluate Level B harassment. With regards to DTH mono-hammers, NMFS recommends proxy levels for Level A harassment based on available data regarding DTH systems of similar sized piles and holes (Heyvaert and Reyff, 2021) (table 5 and table 6 includes number of piles and duration each year; table 4 includes sound pressure and sound exposure levels for each pile type).

The Navy plans to use bubble curtains when impact driving steel piles (relevant to year 2 activities only). For the reasons described in the next paragraph, we assume here that use of the bubble curtain would result in a reduction of 8 dB from the assumed SPL (rms) and SPL (peak) source levels for these pile sizes, and reduce the applied source levels accordingly.

During the 2023 study at Naval Base Kitsap (NBK) Bremerton, the Navy conducted comparative measurements of source levels when impact driving steel piles with and without a bubble curtain. Underwater sound levels were measured at two locations during the installation of one 24-in diameter steel pile and four 36-in steel piles. The bubble curtain used during the measurements reduced median peak sound levels by between 8 and 12 dB, median RMS sound levels by 10 and 12 dB, and median single strike SEL sound levels by 7 and 8 dB. The analysis included in the proposed rule for the regulations preceding these IHAs (83 FR 9366, March 5, 2018) as well as results from the NBK Bangor Trident Support Facilities Explosive Handling Wharf study (Navy, 2013), are consistent with these findings. While proper set-up and operation of the system is critical, and variability in performance should be expected, we believe that in the circumstances evaluated here an effective attenuation performance of 8 dB is a reasonable assumption.

TABLE 4—ESTIMATES OF MEAN UNDERWATER SOUND LEVELS GENERATED DURING VIBRATORY AND IMPACT PILE INSTALLATION, DTH DRILLING, AND VIBRATORY PILE REMOVAL FOR YEAR 1 AND YEAR 2

Pile driving method	Pile type	Pile size	dB RMS	dB peak	dB SEL	Attenuation	Reference
Year 1							
Impact	Concrete	18-in	170	184	159	N/A	Navy 2015.
		24-in	174	188	164	N/A	Navy 2015.
Vibratory	Timber	13-in	161	N/A	N/A	N/A	Greenbusch Group, Inc. 2019.
DTH	Concrete	24-in	167	184	159	N/A	Heyvaert & Reyff 2021.
Year 2							
Impact	Steel ¹	12	177	192	167	-8 dB ¹	Caltrans 2015, 2020.
		36	194	211	181	-8 dB ¹	Navy 2015b.
Vibratory .....	.....	12	153	N/A	N/A	N/A	Navy 2015b.
		24	161	N/A	N/A	N/A	Navy 2015b.

TABLE 4—ESTIMATES OF MEAN UNDERWATER SOUND LEVELS GENERATED DURING VIBRATORY AND IMPACT PILE INSTALLATION, DTH DRILLING, AND VIBRATORY PILE REMOVAL FOR YEAR 1 AND YEAR 2—Continued

Pile driving method	Pile type	Pile size	dB RMS	dB peak	dB SEL	Attenuation	Reference
		36	166	N/A	N/A	N/A	Navy 2015b.

Note: dB peak = peak sound level; DTH = down-the-hole drilling; rms = root mean square; SEL = sound exposure level.
¹ Values modeled for impact driving of 12-inch and 36-inch steel piles will be reduced by 8 dB for noise exposure modeling to account for attenuation from a bubble curtain.

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:

$$TL = B * \text{Log}_{10} (R1/R2),$$

where

TL = transmission loss in dB

B = transmission loss coefficient

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

R2 = the distance from the driven pile of the initial measurement

Absent site-specific acoustical monitoring with differing measured TL,

a practical spreading value of 15 is used as the TL coefficient in the above formula. Site-specific TL data for the Puget Sound are not available; therefore, the default coefficient of 15 is used to determine the distances to the Level A harassment and Level B harassment thresholds.

The ensoufied 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 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 driving, 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 below.

TABLE 5—USER SPREADSHEET INPUTS, YEAR 1

	Vibratory		Impact		DTH
	13-in Timber	18-in Concrete	24-in Concrete	24-in Concrete	
	Installation or removal	Installation	Installation	Installation	
Spreadsheet Tab Used	A.1) Vibratory Pile Driving.	E.1) Impact Pile Driving.	E.1) Impact Pile Driving.	E.2) DTH Drilling.	
Source Level (SPL)	161 RMS	159 SEL	164 SEL	167 RMS, 159 SEL.	
Transmission Loss Coefficient	15	15	15	15.	
Weighting Factor Adjustment (kHz)	2.5	2	2	2.	
Activity Duration per day (minutes)	90 .....	.....	.....	80.
Strike Rate per second .....	.....	.....	.....	12.
Number of strikes per pile .....	.....	1000	1000 .....	.....
Number of piles per day	6	5	4	2.	
Distance of sound pressure level measurement.	10	10	10	10.	

TABLE 6—USER SPREADSHEET INPUTS, YEAR 2

	Vibratory			Impact	
	12-in Steel	24-in Steel	36-in Steel	12-in Steel; BC	36-in Steel; BC
	Installation or removal	Installation or removal	Installation or removal	Installation	Installation
Spreadsheet Tab Used	A.1) Vibratory Pile Driving.	A.1) Vibratory Pile Driving.	A.1) Vibratory Pile Driving.	E.1) Impact Pile Driving.	E.1) Impact Pile Driving.
Source Level (SPL)	153 RMS	161 RMS	166 RMS	167 SEL	181 SEL.
Transmission Loss Coefficient	15	15	15	15	15.
Weighting Factor Adjustment (kHz)	2.5	2.5	2.5	2	2.
Activity Duration per day (minutes)	30	90	133	N/A	N/A.
Number of strikes per pile	N/A	N/A	N/A	1000	1000.
Number of piles per day	2	6	4	2	4.
Distance of sound pressure level measurement.	10	10	10	10	10.

BC = Bubble Curtain.

TABLE 7—LEVEL A HARASSMENT AND LEVEL B HARASSMENT ISOPLETHS FROM VIBRATORY AND IMPACT PILE DRIVING AND DTH DRILLING

Pile type	Level A harassment isopleths (m)					Level B harassment isopleth (m)	Area of harassment zone (km ²)
	LF	MF	HF	PW	OW		
Year 1							
Vibratory:							
13-inch timber	8.9	<1	13.2	5.4	<1	5,412	16
Impact:							
18-inch concrete	73.3	2.6	87.4	39.3	2.9	46	0.007
24-inch concrete	136.2	4.8	162.2	72.9	5.3	86	0.02
DTH:							
24-inch concrete	374.1	13.3	445.6	200.2	14.6	13,594	75
Year 2							
Vibratory:							
12-inch steel	1.3	<1	<1	<1	<1	1,585	8
24-inch steel	8.9	<1	13.2	5.4	<1	5,412	16
36-inch steel	25.1	2.2	37.0	15.2	1.1	11,659	31
Impact:							
12-inch steel	39.8	1.4	47.4	21.3	1.6	39.8	0.005
36-inch steel	542.1	19.3	645.8	290.1	21.1	541.2	0.92

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.

Available information regarding marine mammal occurrence in the vicinity of the four installations includes density information aggregated in the Navy’s Marine Mammal Species Density Database (NMSDD; Navy, 2019) or site-specific survey information from particular installations (e.g., local pinniped counts). More recent density estimates for harbor porpoise are available in Smultea *et al.* (2017) and

Rone *et al.*, (2024). First, for each installation we describe anticipated frequency of occurrence and the information deemed most appropriate for the exposure estimates. For all facilities, large whales (humpback whale, minke whale, and gray whale), killer whales (transient and resident), Dall’s porpoise, and elephant seal are considered as occurring only rarely and unpredictably, on the basis of past sighting records. For these species, average group size is considered in concert with expected frequency of occurrence to develop the most realistic exposure estimate. Although certain species are not expected to occur at all at some facilities—for example, resident

killer whales are not expected to occur in Hood Canal—the Navy has developed an overall take estimate and request for these species for each project year.

All species described above are considered as rare, unpredictably occurring species. A density-based analysis is used for harbor porpoise (table 8), while data from site-specific abundance surveys are used for California sea lion, Steller sea lion, and harbor seal at all installations. One exception is that for Steller sea lion at NBK Bremerton, a density-based analysis is used because local data have resulted in no observations of this species (Navy, 2023).

TABLE 8—MARINE MAMMAL DENSITIES

Species	Region	Density (June–February)
Harbor porpoise	Hood Canal (Bangor)	¹ 0.81
	East Whidbey Island (Everett)	² 0.75
	Sinclair Inlet (Bremerton)	² 0.53
	Vashon (Manchester)	² 0.25
Steller Sea Lion	Puget Sound—Fall/Winter	³ 0.05

Sources: ¹ Rone *et al.*, 2024; ² Smultea *et al.*, 2017; ³ Navy, 2019.

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.

To quantitatively assess exposure of marine mammals to noise from pile driving activities, the Navy plans three methods, to be used depending on the species’ assumed spatial and temporal occurrence. For species with rare or infrequent occurrence at a given

installation during the in-water work window, the likelihood of interaction was reviewed on the basis of past records of occurrence (described in Description of Marine Mammals in the Area of Specified Activities) and the potential maximum duration of work days at each installation, as well as total work days for all installations. Occurrence of the species in this category [*i.e.*, large whales, killer whales, elephant seal (all installations), and Dall’s porpoise (Hood Canal only)]

would not be anticipated to extend for multiple days. Except for southern resident killer whales (SRKW), the probable duration of all rare, unpredictably occurring species is assumed to be 2 days, roughly equivalent to one transit in and out of a project site. In the case of SRKW, the probable duration is assumed to be 1 day only, as SRKW have not been observed near naval installations during work completed previously at these

installations. The calculation for species with rare or infrequent occurrence is:

$$\text{Exposure estimate} = \text{expected group size} \times \text{probable duration}$$

For species that occur regularly but for which site-specific abundance information is not available, density estimates (table 8) were used to determine the number of animals potentially exposed on any one day of pile driving or removal. The calculation for density-based analysis of species with regular occurrence is:

$$\text{Exposure estimate} = N (\text{density}) \times \text{Zone of Influence (ZOI, area)} \times \text{days of pile driving}$$

For remaining species, site-specific abundance information (*i.e.*, primarily the mean of monthly average counts per surveys completed between 2008 and 2022) was used. In cases where documented presence of a given pinniped species was variable throughout year and the mean of monthly average count (2008–2022) was ≥ 1 , the mean of monthly maximum counts of surveys completed between 2008 and 2022 was used:

$$\text{Exposure estimate} = \text{Abundance} \times \text{days of pile driving}$$

Large Whales—For each species of large whale (*i.e.*, humpback whale, minke whale, and gray whale), we assume rare and infrequent occurrence at all installations. For all three species, if observed, they typically occur singly or in pairs. Therefore, for all three species, we assume that a pair of whales may occur in the vicinity of an installation for a total of 2 days. We do not expect that this would happen multiple times, and cannot predict where such an occurrence may happen, so propose to authorize take by Level B harassment of four of each large whale species each project year.

It is important to note that the Navy proposes to implement a shutdown of pile driving activity if any large whale is observed within any defined harassment zone (see Mitigation). Therefore, the IHAs are intended to provide insurance against the event that whales occur within Level B harassment zones that cannot be fully observed by monitors. As a result of this planned mitigation, we do not believe that Level A harassment is a likely outcome upon occurrence of any large whale. The calculated Level A harassment zone is a maximum of 374 m for DTH installation of 24-in concrete piles in year 1 and 542 m for impact installation of 36-in steel piles with a bubble curtain in year, and this requires that a whale be present at that range for the full duration of 1,000 pile strikes. Given the Navy's

commitment to shut down upon observation of a large whale in any harassment zone, and the likelihood that the presence of a large whale in the vicinity of any Navy installation would be known due to reporting via Orca Network, we do not expect that any whale would be present within a Level A harassment zone for sufficient duration to actually experience PTS.

Killer Whales—For transient killer whales, the take authorization is derived via the same process described above for large whales: we assume an average group size of six whales occurring for a period of 2 days. The resulting total authorization of take by Level B harassment of 12 for transient killer whales would also account for the low probability that a larger group occurred once. For SRKW, we assume an average group size of 20 whales occurring within the Level B harassment zone on 1 day each year. A group of 20 SRKW closely represents the average size of the pod most likely to occur near a Navy installation (the J pod), and corresponds to 75 percent of the average of all 3 pods that make up the stock. SRKW have not been observed near naval installations during work completed previously at these installations.

Similar to large whales, the Navy plans to implement shutdown of pile driving activity at any time that any killer whale is observed within any calculated harassment zone. We expect this to minimize the extent and duration of any behavioral harassment. Given the small size of calculated Level A harassment zones—maximum of 13 m for DTH in year 1, and 20 m for the worst-case scenario of impact-driven 36-in steel piles with a bubble curtain—we do not anticipate any potential for Level A harassment of killer whales.

Dall's Porpoise—We assume rare and infrequent occurrence of Dall's porpoise at all installations. If observed, they typically occur in groups of five (Smultea *et al.*, 2017). Therefore, we assume that a group of Dall's porpoise may occur in the vicinity of an installation for a total of 2 days. We do not expect that this would happen multiple times, and cannot predict where such an occurrence may happen, so conservatively propose to authorize take by Level B harassment of a total of 10 Dall's porpoise each project year.

The Navy plans to implement shutdown of pile driving activity at any time if a Dall's porpoise is observed in the Level A harassment zone. The calculated Level A harassment zone is as large as 445 m for DTH of 24-in concrete in year 1 and as large as 646 m for impact driving of 36-in steel piles with a bubble curtain in year 2. Take by

level A harassment would require that a porpoise be present at that range for the full duration of 1,000 pile strikes. Given the rarity of Dall's porpoise in the area, the Navy's commitment to shut down upon observation of a porpoise within the Level A harassment zone, and the likelihood that a porpoise would engage in aversive behavior prior to experiencing PTS, we do not expect that any porpoise would be present within a Level A harassment zone for sufficient duration to actually experience PTS.

Harbor Porpoise—Level B exposure estimates for harbor porpoise were calculated for each installation each year using the appropriate density given in table 8, the largest appropriate Zone of Influence (ZOI) for each pile type, and the appropriate number of construction days.

- **NBK Bangor:** Pile driving is not planned at this installation in year 1. For year 2, using the Hood Canal sub-region density, 36 days of pile driving in year 2, and the largest ZOIs calculated for each pile type at this location (31 km² for vibratory installation of 36-in steel piles) produces an estimate of 905 incidents of Level B harassment for harbor porpoise.

- **NBK Bremerton:** In year 1, using the Sinclair Inlet sub-region density, 31 days of pile driving, and the largest ZOI calculated for each pile type at this location (16 km² for removal and installation of 13-in timber piles, 0.2 km for impact installation of 24-in concrete piles, and 0.07 km for impact installation of 18-in concrete) produces an estimate of 93 incidents of Level B harassment for harbor porpoise. In year 2, using the Sinclair Inlet sub-region density, 24 days of pile driving, and the largest ZOI calculated for each pile type at this location (16 km² for vibratory removal and installation of 24-in steel piles) produces an estimate of 204 incidents of Level B harassment for harbor porpoise.

- **NBK Manchester:** In year 1, using the Vashon sub-region density, 37 days of pile driving, and the largest ZOI calculated for each pile type at this location (75.8 km² for DTH of 24-in concrete piles) produces an estimate of 701 incidents of Level B harassment for harbor porpoise. There are no pile driving activities planned at this installation in year 2.

- **Naval Station (NS) Everett:** There are no pile driving activities planned at this installation in year 1. In year 2, using the East Whidbey sub-region density, 8 days of pile driving, and the largest ZOI calculated each pile type at this location (8 km²) produces an

estimate of 24 incidents of Level B harassment for harbor porpoise.

The Navy plans to implement shutdown of pile driving activity at any time if a harbor porpoise is observed in the Level A harassment zone. As a result of this planned mitigation, we do not believe that Level A harassment is a likely outcome. There are two instances where the Level A harassment zone may extend beyond a distance where harbor porpoise may reliably be detected by protected species observers (PSOs). In year 1, the Level A harassment zone is 445 m during DTH drilling of 24-in concrete at NBK Manchester. In year 2, the Level A harassment zone is 645 m during impact driving of 36-in steel piles with a bubble curtain at NBK Bangor. However, Rone *et al.* (2024) reported a notable absence of harbor porpoise within 21 km² in front of NBK Bangor. In both cases, harbor porpoise are uncommon in the area. Given the Navy's commitment to shut down upon observation of a porpoise within the Level A harassment zone, and the likelihood that a porpoise would engage in aversive behavior prior to experiencing PTS, we do not expect that any porpoise would be present within a Level A harassment zone for sufficient duration to actually experience PTS.

Across all installations, we propose to authorize 794 takes by Level B harassment of harbor porpoise in year 1 and 1,157 takes by Level B harassment of harbor porpoise in year 2.

Steller Sea Lion—Level B harassment estimates for Steller sea lions were calculated for each installation using the appropriate density given in table 8 or site-specific abundance, the largest appropriate ZOI for each pile type at each installation, and the appropriate number of days. Please see Marine Mammal Monitoring Report at Navy Region Northwest Installations: 2008–2022 (<https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities>) for details of site-specific abundance information (Navy, 2023).

- **NBK Bangor:** Steller sea lions are routinely seen hauled out from mid-September through May, with a maximum daily haulout count of 21 individuals in November (based on data collected between 2008 and 2022). Because the mean of monthly average counts per surveys between 2008–2022 was 1, we relied the average of the maximum count of hauled out Steller sea lions for each month in the in-water work window (July–January). The average of the monthly maximum counts during the in-water work window provides an estimate of 7.25 sea

lions present per day. Using this value for 36 days in year 2 results in an estimate of 261 incidents of Level B harassment in year 2. There are no pile driving activities planned at this installation in year 1.

- **NBK Bremerton:** Steller sea lions have been documented only twice at this installation between 2008 and 2022. As such density values were used to estimate take at this location. Using the Puget Sound density value for fall-winter, 31 days of pile driving in year 1, and the largest ZOI calculated for each pile type at this location (16 km² for removal and installation of 13-in timber piles, 0.2 km for impact installation of 24-in concrete piles, and 0.07 km for impact installation of 18-in concrete) produces an estimate of 9 incidents of Level B harassment for Steller sea lion in year 1. Using the Puget Sound density value for fall-winter, 24 days of pile driving in year 2, and the largest ZOI calculated for each pile type at this location (16 km² for vibratory removal and installation of 24-in steel piles) produces an estimate of 18 incidents of Level B harassment for Steller sea lion in year 2.

- **NBK Manchester:** Steller sea lions are observed periodically at NBK Manchester since surveys began in 2012. We estimate take based on the monthly mean counts per surveys conducted from July to February, between 2012 and 2022, which provides an estimate of six Steller sea lions per day. In year 1, using this value for 37 days in results in an estimate of 222 incidents of Level B harassment. There are no pile driving activities planned at this installation in year 2.

- **NS Everett:** Steller sea lions were rarely observed at NS Everett between 2012 and 2022. All observations were of lone individuals hauled out on a Port Security Barrier (PSB) or in a nearby basin. We conservatively estimate that one Steller sea lion could occur within the project area per day. Using this value for 8 days in year 2 results in an estimate of 8 incidents of Level B harassment in year 2. There are no pile driving activities planned at this installation in year 1.

Given the small size of calculated Level A harassment zones—maximum of 15 m for the worst-case scenario of DTH-installed 24-in concrete piles in year 1 and maximum of 21 m for the worst-case scenario of impact-driven 36-in steel piles with the use of a bubble curtain in year 2—we do not anticipate any potential for Level A harassment of Steller sea lions.

Across all installations we propose to authorize take by 231 takes by Level B harassment of Steller sea lion in year 1

and 287 takes by Level B harassment of Steller sea lions in year 2.

California Sea Lion—Level B harassment estimates for California sea lions were calculated for each installation using the appropriate site-specific abundance, the largest appropriate ZOI for each pile type at each installation, and the appropriate number of days. Please see Marine Mammal Monitoring Report at Navy Region Northwest Installations: 2008–2022 (<https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities>) for details of site-specific abundance information (Navy, 2023).

- **NBK Bangor:** California sea lions haul out in all months on floating PSB and on submarines docked at Delta Pier, with lower numbers in June through July. We estimate take based on the monthly mean counts per surveys conducted from July to January, between 2012 and 2022, which provides an estimate of 25 California sea lions per day. In year 2, using this value for 36 days results in an estimate of 900 incidents of Level B harassment in year 2. There are no pile driving activities planned at this installation in year 1.

- **NBK Bremerton:** California sea lions are routinely seen hauled out on floats at NBK Bremerton during most of the year. We estimate take based on the monthly mean count per surveys conducted from July through February, between 2010 and 2022, which provides an estimate of 98 California sea lions per day. In year 1, using this value for 31 days generates an estimate of 3,038 incidents of Level B harassment. In year 2, using this value for 24 days generates an estimate of 2,352 incidents of Level B harassment in year 2.

- **NBK Manchester:** California sea lions have been observed at this installation at least once each month of the year, with peak numbers occurring in October and November. Floats used as haulouts are periodically installed and removed, making numbers in the vicinity highly variable. We estimate take based on the monthly mean count per surveys conducted from July through February, between 2012 and 2022, which provides an estimate of 24 California sea lions per day. In year 1, using this value for 37 days generates an estimate of 1,274 incidents of Level B harassment. There are no pile driving activities planned at this installation in year 2.

- **NS Everett:** California sea lions have been observed every month of the year. We estimate take based on the monthly mean count per survey conducted from July through February

between 2012 and 2022, which provides an estimate of 48 California sea lions per day. In year 2, using this value for 8 days in year 2 generates an estimate of 384 incidents of Level B exposures. There are no pile driving activities planned at this installation in year 1.

Given the small size of calculated Level A harassment zones—maximum of 15 m for the worst-case scenario of DTH-installed 24-in concrete piles in year 1 and maximum of 21 m for the worst-case scenario of impact-driven 36-in steel piles with the use of a bubble curtain in year 2—we do not anticipate any potential for Level A harassment of California sea lions.

Across all installations we propose to authorize 3,926 takes by Level B harassment of California sea lions in year 1 and 3,636 takes by Level B harassment of California sea lions in year 2.

Harbor Seal—Harbor seals are expected to occur year-round at all installations, with the greatest numbers expected at installations with nearby haul-out sites. Level B exposure estimates for harbor seals were calculated for each installation using the appropriate site-specific abundance, the largest appropriate ZOI for each pile type at each installation, and the appropriate number of days. Please see Marine Mammal Monitoring Report at Navy Region Northwest Installations: 2008–2022 (<https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities>) for details of site-specific abundance information (Navy, 2023).

Harbor seals are expected to be the most abundant marine mammal at all installations, often occurring in and around existing in-water structures in a way that may restrict observers' ability to adequately observe seals and subsequently implement shutdowns. In addition, the calculated Level A harassment zones are significantly larger than those for sea lions, which may also be abundant at various installations at certain times of year. For harbor seals in year 1, the largest calculated Level A harassment zone is 200 m (compared with a maximum zone of 15 m for sea lions), calculated for the worst-case scenario of DTH-installed 24-in concrete piles (other scenarios range from 5–75 m). In year 2, the largest calculated Level A harassment zone is 290 m (compared with a maximum zone of 21 m for sea lions), calculated for the worst-case scenario of impact-driven 36-in steel piles with the use of a bubble curtain (other scenarios range from 1–21 m). Therefore, we assume that some Level A harassment is likely to occur for

harbor seals and provide installation-specific estimates below.

- **NBK Bangor:** Harbor seals are year-round residents at NBK Bangor and have been identified at least once during each calendar month over several survey years. They have been observed swimming and hauled out on man-made structures including docks, catwalks under the dock at Marginal Pier, PSBs, and boats along the NBK Bangor waterfront. The Navy plans to place fencing around the catwalks at Marginal Pier, which may reduce harbor seal haulout opportunities at NBK Bangor. Because the mean of monthly average counts per surveys between 2008–2022 was <1, we estimate take by Level B harassment based on the mean maximum count per month of surveys conducted from July to January, between 2008 and 2022, which provides an estimate of 16 harbor seals per day. In year 2, using this value for 36 days results in an estimate of 576 incidents of Level B exposures. There are no pile driving activities planned at this installation in year 1.

The Level A harassment zone expected to occur during impact installation of 36-in steel at NBK Bangor is 290 m. Since the Navy plans to maintain a shutdown zone of at 180 m (see table 11), the Navy estimates and NMFS agrees that one seal per day ($n = 20$) could remain within the calculated Level A harassment zone for a sufficient period to accumulate enough energy to result in PTS. As such, we propose to authorize 20 incidents of take by Level A harassment.

- **NBK Bremerton:** Observations of harbor seals are intermittent at NBK Bremerton. They are primarily observed swimming in the water around piers and structures and less frequently hauled out on floats and docked submarines. Because the mean of monthly average counts per surveys between 2008–2022 was <1, we estimate take based on the mean maximum count per month of surveys from July to February, between 2010 and 2022, which provides an estimate of two harbor seals per day. In year 1, using this value for 31 days results in an estimate of 62 incidents of Level B exposures. In year 2, using this value for 24 days results in an estimate of 48 incidents of Level B harassment.

In year 1, the Level A harassment zone expected to occur during impact installation of 18-in steel at NBK Bremerton is 39 m and the Level A harassment zone expected to occur during impact installation of 24-in steel is 73 m. Although the Navy plans to shut down at distances slightly larger than these Level A harassment zones

(see table 10), the Navy assumes and NMFS agrees that it is possible that one seal per day could go unobserved and remain within the calculated zone for a sufficient period to accumulate enough energy to result in PTS. As such, we propose to authorize 20 takes by Level A harassment. In year 2, the largest Level A harassment zone is much smaller (<10 m) and as such we do not expect take by Level A harassment to occur and we do not propose to authorize such take.

- **NBK Manchester:** No harbor seal haulouts have been identified at NBK Manchester, but seals regularly haul out at Orchard Rocks and are observed swimming through the project area. We estimate take based on the monthly mean count per survey conducted from July through February between 2020 and 2022 (Orchard Rocks was incorporated into surveys in 2020), which provides an estimate of 10 harbor seals per day. In year 1, using this value for 37 days results in an estimate of 370 incidents of Level B harassment. There are no pile driving activities planned at this installation in year 2.

The Level A harassment zone expected to occur during DTH installation of 24-in concrete at NBK Manchester is 200 m. Since the Navy plans to shut down at 150 m due to practicability concerns (see table 10), the Navy assumes and NMFS agrees that one seal per day ($n = 37$) could remain within the calculated zone for a sufficient period to accumulate enough energy to result in PTS. As such, we propose to authorize 37 incidents of take by Level A harassment.

- **NS Everett:** Harbor seals haul out year round on floats, riprap, and human structures at NS Everett. We estimate take based on the monthly mean count per survey conducted from July through February between 2019 and 2022 (the east side of East Waterway was incorporated into surveys in 2019), which provides an estimate of 266 harbor seals per day. In year 2, using this value for 8 days results in an estimate of 2,128 incidents of Level B harassment. There are no planned pile driving activities at this installation in year 1.

The largest Level A harassment zone expected to occur at NS Everett is 21 m and the Navy plans to shut down at this distance should a harbor seal be observed entering or within this zone. As such we do not expect take by Level A harassment to occur and we do not propose to authorize such take here.

Any individuals exposed to the higher levels associated with the potential for PTS closer to the source might also be behaviorally disturbed, however, for the

purposes of quantifying take we do not count those exposures of one individual as both a Level A harassment take and a Level B harassment take, and therefore takes by Level B harassment calculated as described above are further modified to deduct the amount of take by Level A harassment. Therefore, in year 1, across all installations, NMFS proposes to authorize 57 takes by Level A harassment and 432 takes by Level B harassment for harbor seal, for a total of 489 takes. In year 2, across all

installations, NMFS proposes to authorize 20 takes by Level A harassment and 2,752 takes by Level B harassment for harbor seal, for a total of 2,772 takes.

Northern Elephant Seal—Northern elephant seals are considered rare visitors to Puget Sound. However, solitary juvenile elephant seals have been known to sporadically haul out to molt in Puget Sound during spring and summer months. Because there are occasional sightings in Puget Sound, the

Navy reasons that exposure of up to one seal to noise above Level B harassment thresholds could occur for a 2-day duration for a total of two takes by Level B harassment of northern elephant seals each year.

The total take authorization for all species each year is summarized in table 9 below. No authorization of take by Level A harassment is authorized except a total of 57 such incidents for harbor seals in year 1 and 20 such incidents for harbor seals in year 2.

TABLE 9—TAKE AUTHORIZATION BY LEVEL B HARASSMENT

Species	Stock	Year 1			Year 2		
		Level A harassment	Level B harassment	Take as a percentage of stock abundance	Level A harassment	Level B harassment	Take as a percentage of stock abundance
Humpback Whale	CenAmer./S Mex-CA-OR-WA	0	0	0	0	0	0
	Mex-CA-OR-WA	1	3	<1	0	1	<1
	Hawai'i	0	1	<1	0	3	<1
Minke Whale	CA-OR-WA	0	4	<1	0	4	<1
Gray Whale	Eastern N Pacific	0	4	<1	0	4	<1
Killer Whale	W Coast Transient	0	12	3	0	12	3
	E.N.P.—S Resident	0	20	27	0	20	27
Harbor Porpoise	WA. Inland	0	794	7	0	1,157	10
Dall's Porpoise	CA-OR-WA	0	10	<1	0	10	<1
Steller Sea Lion	Eastern US	0	231	<1	0	287	<1
California Sea Lion	US	0	3,926	2	0	3,636	1.4
Northern Elephant Seal	CA Breeding	0	2	<1	0	2	<1
Harbor Seal	WA N Inland	57	375	4	0	2,176	13
	Hood Canal	0	0	0	20	576	17

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.

Timing—As described previously, the Navy will adhere to in-water work windows designed for the protection of fish. These timing windows would also benefit marine mammals by limiting the annual duration of construction activities. At NBK Bangor, the Navy will adhere to a July 16 through January 15 window, while at the remaining facilities this window is extended to February 15 each project year.

On a daily basis, in-water construction activities will occur only during daylight hours (sunrise to sunset) except from July 16 to September 15, when impact pile driving will only occur starting 2 hours after sunrise and ending 2 hours before sunset in order to

protect marbled murrelets (*Brachyramphus marmoratus*) during the nesting season. The exception is NBK Bremerton, where marbled murrelets do not occur.

Shutdown Zone—For all pile driving, removal, and DTH drilling, the Navy will implement shutdowns within designated zones. The purpose of a shutdown zone is generally to define an area within which shutdown of activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). For all pile driving activities, the Navy will establish a minimum shutdown zone with a radial distance of 10 m. This minimum zone is intended to prevent the already unlikely possibility of physical interaction with construction equipment and to establish a precautionary minimum zone with regard to acoustic effects. In most circumstances where the predicted Level A harassment zone exceeds the minimum zone, the Navy proposes to implement a shutdown zone greater or equal to the predicted Level A harassment zone (see tables 12 and 13). However, in cases where it would be challenging to detect marine mammals at the Level A harassment isopleth and frequent shutdowns would create practicability concerns (e.g., for phocids

during DTH at NBK Manchester in year 1 and impact pile driving at NBK Bangor in year 2), smaller shutdown zones have been established. In addition, the Navy proposes to implement shutdown upon observation of any large whales and killer whales within a calculated Level B harassment zone. Recognizing that the entirety of the Level B harassment zone cannot

practicably be monitored, the Orca Network would be consulted prior to commencing pile driving each day, and pile driving would also be delayed or shutdown if low-frequency or mid-frequency cetaceans are reported near or approaching the Level B harassment zone. In all cases, predicted injury zones are calculated on the basis of cumulative sound exposure, as peak

pressure source levels produce smaller predicted zones.

Finally, construction activities will be halted upon observation of a species for which incidental take is not authorized or a species for which incidental take has been authorized but the authorized number of takes has been met entering or within the harassment zone.

TABLE 10—SHUTDOWN ZONES, YEAR 1

Activity	Pile size/type	Shutdown zones (m)					Level B harassment zone (m)	Level B monitoring zone (m)
		LF	MF	HF	PW	OW		
Impact Installation	18-in Concrete	100	50	100	40	10	46	N/A
	24-in Concrete	170	90	170	75	10	86	N/A
Vibratory Installation or Removal	13-in Timber	² 5,412	² 5,412	15	10	10	5,412	¹ 400
	24-in Concrete	² 13,594	² 13,594	³ 450	150	20	13,594	¹ 450

¹ Observers must be able to monitor at minimum the Level B monitoring zone prior to commencing vibratory pile driving and removal and DTH drilling.
² This shutdown zone likely extends beyond the distance that low- and mid-frequency cetaceans can be reliably detected. Observers will monitor this shutdown zone to the maximum extent possible based on the number and location of PSOs deployed and weather conditions.
³ This shutdown zone likely extends beyond the distance that harbor porpoise can be reliably detected. However, harbor porpoise are uncommon near NKB Manchester, and it is likely that they would engage in aversive behavior prior to experiencing PTS. As such, we do not expect that any porpoise would be present within a Level A harassment zone for sufficient duration to actually experience PTS.

TABLE 11—SHUTDOWN ZONES, YEAR 2

Activity	Pile size/type	Shutdown zones (m)					Level B harassment zone (m)	Level B monitoring zone (m)
		LF	MF	HF	PW	OW		
Impact Installation	12-in Steel	50	50	50	30	10	39.8	N/A
	36-in Steel	650	650	³ 650	180	25	541.2	N/A
Vibratory Installation or Removal	12-in Steel	1,585	1,585	10	10	10	1,585	¹ 400
	24-in Steel	² 5,412	² 5,412	15	10	10	5,412	¹ 400
	36-in Steel	² 11,659	² 11,659	40	20	10	11,659	¹ 400

¹ Observers must be able to monitor at minimum the Level B monitoring zone prior to commencing vibratory pile driving and removal.
² This shutdown zone likely extends beyond the distance that low- and mid-frequency cetaceans can be reliably detected. Observers will monitor this shutdown zone to the maximum extent possible based on the number and location of deployed PSOs and weather conditions.
³ This shutdown zone likely extends beyond the distance that harbor porpoise can be reliably detected. However, harbor porpoise were notably absent within 21 km² in front of NKB Bangor (Rone *et al.*, 2024) and it is likely that they would engage in aversive behavior prior to experiencing PTS. As such, we do not expect that any porpoise would be present within a Level A harassment zone for sufficient duration to actually experience PTS.

Protected Species Observers—The number and placement of PSOs during all construction activities (described in the Monitoring and Reporting section) would ensure that the entire shutdown zone is visible, except in cases when the shutdown zone is based on the Level B harassment zone (large whales and killer whales). In such cases, PSOs must be able to monitor at minimum the Level A harassment zone. The Navy will employ at least three PSOs for all pile driving and DTH drilling.

Monitoring for Level B Harassment—PSOs will monitor the shutdown zones and beyond to the extent that PSOs can see. Monitoring beyond the shutdown zones enables 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 shutdown zone. Additionally, prior to commencing pile driving, PSOs will contact Navy marine biologists or the

Orca Network directly to obtain reports of large whales in the area.

In order to document observed incidents of harassment, PSOs record all marine mammal observations, regardless of location. The PSO's location and the location of the pile being driven are known, and the location of the animal may be estimated as a distance from the observer and then compared to the location from the pile. It may then be estimated whether the animal was exposed to sound levels constituting incidental harassment on the basis of predicted distances to relevant thresholds in post-processing of observational data, and a precise accounting of observed incidents of harassment created.

Pre and Post-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 zone, Level A harassment zone, and Level B harassment zone (to the extent possible based on the number

and location of PSOs and weather conditions) for a period of 30 minutes. Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine that the shutdown zones and, during vibratory driving and removal and DTH drilling, the Level B monitoring zone, are clear of marine mammals. If these zones are obscured by fog or poor lighting conditions, in-water construction activity will not be initiated until the entire shutdown zone is visible. Pile driving may commence following 30 minutes of observation when the determination is made that the shutdown zones and, during vibratory driving and removal and DTH drilling, the Level B monitoring zone, are clear of marine mammals. If a marine mammal is observed entering or within these zones, pile driving activity must be delayed or halted. During vibratory driving and removal and DTH, the Navy will shut down upon any observation of large whales and killer whales. If pile driving is delayed or halted due to the

presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone or 15 minutes have passed without re-detection of the animal.

The Navy also plans to take measures to ensure that killer whales and large cetaceans (*i.e.*, humpback whale, gray whale, and minke whale) are not located within the vicinity of the project area, including, but not limited to, contacting and/or reviewing the latest sightings data from the Orca Network and/or Center for Whale Research, including passive acoustic detections, to determine the location of the nearest marine mammal sightings.

Soft Start—The use of a soft start procedure is believed to provide additional protection to marine mammals by warning marine mammals or providing them with a chance to leave the area prior to the hammer operating at full capacity. The Navy will utilize soft start techniques for impact pile driving. We require an initial set of three strikes from the impact hammer at reduced energy, followed by a 30-second waiting period, then two subsequent three-strike sets. Soft start will be required at the beginning of each day's impact pile driving work and at any time following a cessation of impact pile driving of 30 minutes or longer; the requirement to implement soft start for impact driving is independent of whether vibratory driving has occurred within the prior 30 minutes. Soft start is not required during vibratory pile driving activities.

Bubble Curtain—A bubble curtain will be used for all impact driving of steel piles to attenuate noise. A bubble curtain will be employed during impact installation or proofing of steel pile where water depths are greater than 2 ft (0.67 m). Bubble curtains are not planned for installation of other pile types due to the relatively low source levels, as the requirement to deploy the curtain system at each driven pile results in a significantly lower production rate. Where a bubble curtain is used, the contractor will be required to turn it on prior to the soft start in order to flush fish from the area closest to the driven pile.

To avoid loss of attenuation from design and implementation errors, the Navy will require specific bubble curtain design specifications, including testing requirements for air pressure and flow at each manifold ring prior to initial impact hammer use, and a requirement for placement on the substrate. The bubble curtain must distribute air bubbles around 100

percent of the piling perimeter for the full depth of the water column. The lowest bubble ring shall be in contact with the mudline for the full circumference of the ring, and the weights attached to the bottom ring shall ensure 100 percent mudline contact. No parts of the ring or other objects shall prevent full mudline contact. The contractor shall also train personnel in the proper balancing of air flow to the bubblers, and must submit an inspection/performance report to the Navy for approval within 72 hours following the performance test. Corrections to the noise attenuation device to meet the performance standards shall occur prior to use for marine driving.

Based on our evaluation of the applicant's planned 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 must be conducted in accordance with the Marine Mammal Monitoring and Mitigation Plan. Marine mammal monitoring during pile driving and removal and DTH drilling must be conducted by NMFS-approved PSOs 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 must 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 experience performing the duties of a PSO during construction activities pursuant to a NMFS-issued incidental take authorization;

- Where a team of three or more PSOs is required, a lead observer or monitoring coordinator will be designated. The lead observer will be required to have prior experience working as a marine mammal observer 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 each IHA.

PSOs should also 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 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.

Visual monitoring will be conducted by a minimum of three trained PSOs positioned at suitable vantage points practicable (e.g., from a small boat, the pile driving barge, on shore, piers, or any other suitable location). One PSO will have an unobstructed view of all water within the shutdown zone, and during vibratory pile driving and removal and DTH drilling, the Level B monitoring zone. Remaining PSOs will observe as much as the Level A and Level B harassment zones as possible.

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.

Acoustic Monitoring

The Navy plans to conduct hydroacoustic monitoring for a subset of impact-driven steel piles for projects including more than three piles where a bubble curtain is used (relevant to year 2 project activities only).

Reporting

The Navy will submit a draft marine mammal monitoring report 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. 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: (1) The number and type of piles that were driven and the method (e.g., impact or vibratory); and (2) Total duration of driving time for each pile (vibratory driving) and number of strikes for each pile (impact driving);

- PSO locations during marine mammal monitoring;

- 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;

- Upon observation of a marine mammal, the following information: (1) Name of PSO who sighted the animal(s) and PSO location and activity at time of sighting; (2) Time of sighting; (3) 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; (4) Distance and location of each observed marine mammal relative to the pile being driven for each sighting; (5) Estimated number of animals (min/max/best estimate); (6) Estimated number of animals by cohort (adults, juveniles, neonates, group composition, etc.); (7) Animal's closest point of approach and estimated time spent within the harassment zone; and (8) 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);

- Number of marine mammals detected within the harassment zones, by species; and

- Detailed information about implementation of any mitigation (e.g., shutdowns and delays), a description of specific actions that ensued, and resulting changes in behavior of the animal(s), if any.

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 will be considered final. All PSO data will be submitted electronically in a format that can be queried such as a spreadsheet or database and will be submitted with the draft marine mammal report.

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the Holder must report the incident to the Office of Protected Resources (OPR), NMFS (PR.ITP.MonitoringReports@noaa.gov and itp.fleming@noaa.gov) and the West Coast Regional Stranding Coordinator as soon as feasible. If the death or injury was clearly caused by the specified activity, the Holder must immediately cease the activities until NMFS OPR 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 Holder must not resume their activities until notified by NMFS. The report must include the following information:

- 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.

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 majority of our analysis applies to all the species listed in table 1, given that many of the anticipated effects of this project on different marine mammal stocks are expected to be relatively similar in nature. Where there are meaningful differences between species or stocks, or groups of species, in anticipated individual responses to activities, impact of expected take on the population due to differences in population status, or impacts on habitat, they are described independently in the analysis below.

Pile driving activities associated with the maintenance projects, as described previously, have the potential to disturb or displace marine mammals. Specifically, the specified activities may result in take, in the form of Level B harassment (behavioral disturbance) only (for all species other than harbor seal) from underwater sounds generated from pile driving. Potential takes could occur if individual marine mammals are present in the ensonified zone when pile driving is happening.

No serious injury or mortality would be expected even in the absence of the planned mitigation measures. For all species other than the harbor seal, no Level A harassment is anticipated given the nature of the activities, *i.e.*, much of the anticipated activity would involve measures designed to minimize the possibility of injury. The potential for injury is small for cetaceans and sea lions, and is expected to be essentially eliminated through implementation of the mitigation measures—use of the bubble curtain for steel piles (relevant to year 2 only), soft start (for impact driving), and shutdown zones. Impact driving, as compared with vibratory driving, has source characteristics (short, sharp pulses with higher peak levels and much sharper rise time to reach those peaks) that are potentially injurious or more likely to produce severe behavioral reactions. Given sufficient notice through use of soft start, marine mammals are expected to move away from a sound source that is annoying prior to becoming potentially injurious or resulting in more severe behavioral reactions. Additionally, environmental conditions in inland

waters are expected to generally be good, with calm sea states, and we expect conditions would allow a high marine mammal detection capability, enabling a high rate of success in implementation of shutdowns to avoid injury.

As described previously, there are multiple species that are considered rare in the project areas and for which we authorize limited take, by Level B harassment, of a single group for a minimal period of time in each authorization year (1 or 2 days).

ESA critical habitat for southern resident killer whale occurs in Puget Sound (see the Description of Marine Mammals in the Area of Specified Activities section of this notice). NMFS did not identify in-water sound levels as a separate essential feature of critical habitat, though anthropogenic sound is recognized as one of the primary threats to SRKW (NMFS, 2019). The exposure of SRKW to sound from the planned activities would be minimized by the required mitigation measures (e.g., shutdown zones equivalent to the Level B harassment zones). The effects of the activities on SRKW habitat generally, such as sedimentation and impacts to availability of prey species, are expected to be limited both spatially and temporally, constrained to the immediate area around the pile driver(s) at each pier and returning to baseline levels quickly. Additionally, the timing of the in-water work window for the projects is intended to limit impacts to ESA-listed fishes, which would accordingly reduce potential impacts to SRKW prey.

Puget Sound is part of a biologically important area (BIA) for migrating gray whales (Calambokidis *et al.*, 2015). However, gray whales in this area typically remain further north, primarily in the waters around Whidbey Island (Calambokidis *et al.*, 2018) (an area where only 8 days of pile driving are planned). Therefore, even though the project areas overlap with the BIA, the infrequent occurrence of gray whales suggests that the projects would have minimal, if any, impact on the migration of gray whales, and would therefore not affect reproduction or survival.

Aside from the SRKW critical habitat and BIA for gray whales, there are no known important areas for other marine mammals, such as feeding or pupping areas. Therefore, we do not expect meaningful impacts to these species (*i.e.*, humpback whale, gray whale, minke whale, transient and resident killer whales, Dall's porpoise, and northern elephant seal) and find, for both the year 1 and year 2 IHAs, that the total marine mammal take from the

specified activities will have a negligible impact on these marine mammal species.

For remaining species (harbor porpoise, California sea lion, Steller sea lion, and harbor seal), we discuss the likely effects of the specified activities in greater detail. Effects on individuals that are taken by Level B harassment, on the basis of reports in the literature as well as monitoring from other similar activities, will likely be limited to reactions such as increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (e.g., Thorson and Reyff, 2006; HDR, Inc., 2012; Lerma, 2014). Most likely, individuals will simply move away from the sound source and be temporarily displaced from the areas of pile driving, although even this reaction has been observed primarily only in association with impact pile driving.

The Navy has conducted multi-year activities potentially affecting marine mammals, and typically involving greater or similar levels of activity than is contemplated here in various locations, such as San Diego Bay, and some of the installations considered herein (NBK Bangor, NBK Bremerton, NBK Manchester). Reporting from these activities has similarly reported no apparently consequential behavioral reactions or long-term effects on marine mammal populations (Lerma, 2014; Navy, 2016; Sandoval *et al.*, 2022; Sandoval and Johnson, 2022; Hamer Environmental 2021; DoN, 2021 and 2022). Repeated exposures of individuals to relatively low levels of sound outside of preferred habitat areas are unlikely to significantly disrupt critical behaviors. Thus, even repeated Level B harassment of some small subset of the overall stock is unlikely to result in any significant realized decrease in viability for the affected individuals, and thus would not result in any adverse impact to the stock as a whole. Level B harassment will be reduced to the level of least practicable adverse impact through use of mitigation measures described herein and, if sound produced by project activities is sufficiently disturbing, animals are likely to simply avoid the area while the activity is occurring. While vibratory driving and DTH drilling associated with some project components may produce sound at distances of many kilometers from the pile driving site, thus intruding on higher-quality habitat, the project sites themselves and the majority of sound fields produced by the specified activities are within industrialized areas. Therefore, we expect that animals

annoyed by project sound would simply avoid the area and use more-preferred habitats.

In addition to the expected effects resulting from authorized Level B harassment, we anticipate that harbor seals may sustain some limited Level A harassment in the form of auditory injury at two installations in year 1 (NBK Bremerton and NBK Manchester) and one installation in year 2 (NBK Bangor), assuming they remain within a given distance of the pile driving activity for the full number of pile strikes. However, seals in these locations that experience PTS would likely only receive slight PTS, *i.e.*, minor degradation of hearing capabilities within regions of hearing that align most completely with the energy produced by pile driving, *i.e.*, the low-frequency region below 2 kHz, not severe hearing impairment or impairment in the regions of greatest hearing sensitivity. If hearing impairment occurs, it is most likely that the affected animal would lose a few decibels in its hearing sensitivity, which in most cases is not likely to meaningfully affect its ability to forage and communicate with conspecifics. As described above, we expect that marine mammals would be likely to move away from a sound source that represents an aversive stimulus, especially at levels that would be expected to result in PTS, given sufficient notice through use of soft start.

The pile driving activities are also not expected to have significant adverse effects on these affected marine mammals' habitats. The activities may cause some fish to leave the area of disturbance, thus temporarily impacting marine mammals' foraging opportunities in a limited portion of the foraging range; but, because of the short duration of the activities and the relatively small area of the habitat that may be affected (with no known particular importance to marine mammals), 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 specified activities will have only minor, short-term effects on individuals that will not have any bearing on those individuals' fitness. Thus the specified activities are not expected to impact rates of recruitment or survival and will therefore have a negligible impact on those species or stocks.

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 anticipated incidents of Level B harassment consist of, at worst, temporary modifications in behavior;
 - The additional impact of PTS of a slight degree to few individual harbor seals at two locations in year 1 and one location in year 2 is not anticipated to increase individual impacts to a point where any population-level impacts might be expected;
 - The absence of any significant habitat within the industrialized project areas, including known areas or features of special significance for foraging or reproduction; and
 - The presumed efficacy of the mitigation measures in reducing the effects of the specified activity to the level of least practicable adverse impact.
- The effects on species that serve as prey for marine mammals from the activities are expected to be short-term and, therefore, any associated impacts on marine mammal feeding are not expected to result in significant or long-term consequences for individuals, or to accrue to adverse impacts on their populations from either project;
- The ensouled areas from both projects are very small relative to the overall habitat ranges of all species and stocks, and will not cause more than minor impacts in any ESA-designated critical habitat, BIAs or any other areas of known biological importance.

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, specific to each of the year 1 and year 2 IHAs, 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 less 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.

We propose to authorize incidental take of 14 marine mammal stocks each project year (table 9). The total amount of taking authorized is less than 1 percent for eight of these stocks in year 1 and year 2, equal or less than 10 percent for an additional four stocks in year 1 and three stocks in year 2, and equal or less than 27 percent for another stock in year 1 and three stocks in year 2, all of which we consider relatively small percentages and thus small numbers of marine mammals relative to the estimated overall population abundances for those stocks.

Based on the analysis contained herein of the activity (including the mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS finds, for each of the year 1 and year 2 IHAs, 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 ESA of 1973 (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, in this case with the West Coast Regional Office.

NMFS is authorizing take of SRKW, as well as two distinct population segments (DPSs) of humpback whale (Central American/Southern Mexico–California–Oregon–Washington and Mainland Mexico–California–Oregon–

Washington), which are listed under the ESA.

The NMFS OPR requested initiation of section 7 consultation with the NMFS West Coast Region (WCR) for the issuance of these IHAs. On April 29, 2024, WCR concluded that NMFS' current action remains covered by the programmatic Biological Opinion (WCRO-2016-00018) completed for the issuance of regulations preceding these IHAs (83 FR 9366, March 5, 2018), and that reinitiation of the consultation is not required. WCR specified that the new IHAs are consistent with the original effects analysis included in the original programmatic opinion, and OPR's action would not change the conclusions nor the effects of the proposed action as written in the Biological Opinion.

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 evaluate our action (*i.e.*, the issuance of two consecutive IHAs) 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 the IHAs qualifies to be categorically excluded from further NEPA review.

Authorization

NMFS has issued two consecutive IHAs to the Navy for the potential harassment of small numbers of 10 marine mammal species incidental to the NAVFAC NW MPR Project in Puget Sound, Washington, that includes the previously explained mitigation, monitoring, and reporting requirements.

Dated: May 28, 2024.

Kimberly Damon-Randall,

Director, Office of Protected Resources,
National Marine Fisheries Service.

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

Hydrographic Services Review Panel

AGENCY: National Ocean Service, National Oceanic and Atmospheric Administration (NOAA), Department of Commerce.

ACTION: Notice of solicitation of nominations for NOAA's Hydrographic Services Review Panel Federal Advisory Committee.

SUMMARY: NOAA is seeking nominations for members to serve on the Hydrographic Services Review Panel (HSRP) Federal Advisory Committee. Nominations are due by February 21, 2025.

DATES: Nominations for members to serve on the HSRP Federal Advisory Committee must be submitted by February 21, 2025, and will be kept on file and used for future HSRP vacancies. NOAA anticipates there will be five vacancies starting on January 1, 2026, each with a four-year term. Current members who may be eligible for a second term in 2026 must reapply. Pursuant to the Hydrographic Services Improvement Act, as amended (HSIA; 33 U.S.C. 892 *et seq.*), NOAA maintains an active pool of HSRP candidates and solicits nominations for HSRP candidates once each year.

ADDRESSES: Nominations will be accepted by email and should be sent to: Hydroservices.panel@noaa.gov. You will receive a confirmation response.

FOR FURTHER INFORMATION CONTACT: NOAA HSRP Program Manager, Ashley Chappell, email Hydroservices.panel@noaa.gov or phone: 240-429-0293.

SUPPLEMENTARY INFORMATION: Pursuant to the HSIA, NOAA shall solicit nominations for HSRP membership once each year (33 U.S.C. 892c). The HSRP advises the NOAA Administrator "on matters related to the responsibilities and authorities set forth in [the HSIA] and such other appropriate matters as the Administrator refers to the [HSRP] for review and advice." (33 U.S.C. 892c(b)(1).) The NOAA Administrator's responsibilities and authorities include promoting safe, efficient, and environmentally sound marine transportation under the Coast and Geodetic Survey Act (CGSA; 33 U.S.C. 883 *et seq.*). To promote safe, efficient, and environmentally sound marine transportation under the CGSA, the HSIA states that the NOAA Administrator shall,

1. acquire and disseminate hydrographic data and provide hydrographic services;
2. promulgate standards for hydrographic data and services;
3. ensure comprehensive geographic coverage of hydrographic services;
4. maintain a national database of hydrographic data, in cooperation with other appropriate Federal agencies;
5. provide hydrographic services in uniform, easily accessible formats; and
6. participate in the development of, and implement for the United States in cooperation with other appropriate Federal agencies, international standards for hydrographic data and services.

The HSRP has fifteen voting members appointed by the NOAA Administrator in accordance with the HSIA, 33 U.S.C. 892c. Voting members are individuals who, by reason of knowledge, experience, or training, are especially qualified in one or more disciplines relating to hydrographic data and services, marine transportation, port administration, vessel pilotage, coastal and fishery management, and other disciplines as determined appropriate by the NOAA Administrator. Two NOAA employees, the Directors of the National Geodetic Survey and the Center for Operational Oceanographic Products and Services, and the Co-Directors of the Center for Coastal and Ocean Mapping/Joint Hydrographic Center serve as non-voting members. The Director of the NOAA Office of Coast Survey serves as the Designated Federal Officer (DFO) along with two Alternate DFOs. Full-time officers or employees of the United States may not be appointed as voting members. Any voting member of the HSRP who is an applicant for or beneficiary of (as determined by the Administrator) any assistance under the HSIA shall disclose to the HSRP that relationship, and may not vote on any other matter pertaining to that assistance.

Voting members of the HSRP serve a four-year term, except that vacancy appointments are for the remainder of the unexpired term of the vacancy. Members serve at the Administrator's discretion and are subject to government ethics standards. Public meetings occur at least twice a year. Voting members receive compensation at a rate established by the Administrator, not to exceed the maximum daily rate payable under 5 U.S.C. 5376 when engaged in performing duties for the HSRP during the public meeting. Members are reimbursed for actual and reasonable travel expenses incurred in performing such duties according to Federal Travel Regulation.