



DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648-XG017]

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Marine Structure Maintenance and Pile Replacement Program in Puget Sound, Washington

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

ACTION: Notice; issuance of incidental harassment authorization.

SUMMARY: In accordance with 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) for authorization to take marine mammals incidental to the Marine Structure Maintenance and Pile Replacement Program in Puget Sound, Washington.

DATES: This authorization is effective from September 25, 2026 through September 24, 2027.

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. Section 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) directs 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; 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 as “mitigation”); and requirements pertaining to the monitoring and reporting of the takings. The definitions of all applicable MMPA statutory terms used above are included in the relevant sections below (see also 16 U.S.C. 1362; 50 CFR 216.3, 216.103).

Summary of Request

On February 26, 2026, NMFS received a request from the Navy for an IHA to take marine mammals incidental to construction associated with the Navy’s 2026 Marine Structure Maintenance and Pile Replacement project in Puget Sound, Washington. Following NMFS’ review of the application, and subsequent discussions between NMFS and the Navy, the application was deemed adequate and complete on June 4, 2026. The

Navy submitted a revised application reflecting the previous discussions on June 26, 2026. We received another revision on August 6, 2026 and a final revision on August 12, 2026. The Navy's request is for take of 10 species of marine mammals, by Level B harassment and, for a subset of these species, Level A harassment. Neither the Navy nor NMFS expect serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

NMFS previously promulgated regulations for (84 FR 15963, April 17, 2019) and issued two consecutive IHAs to (89 FR 47539, June 3, 2024) the Navy for related and similar work. The Navy complied with all the requirements (*e.g.*, mitigation, monitoring, and reporting) of the previous IHAs, and information regarding their monitoring results may be found in the Effects of the Specified Activity on Marine Mammals and their Habitat.

Description of the Specified Activity

Overview

To ensure continuance of necessary missions at its 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 Maintenance and Pile Replacement (MPR) Program. Under the MPR program, the Navy is planning to conduct repairs and maintenance of existing marine structures and replacement of degraded piles at three Navy installations within Puget Sound, Washington. Construction is planned for up to a total of 227 days, with 22 days planned at Naval Base Kitsap (NBK) Bangor between July 16 and January 15, 77 days planned at Naval Station (NS) Everett between July 16 and February 15, and 128 days planned at NBK Manchester between July 16 and February 15, up to 7 days per week, during daylight hours only. Repairs include replacing up to 234 structurally unsound concrete or steel piles with 233 concrete or steel piles over

a 1-year period using impact and vibratory pile driving and removal. The activities that have the potential to take marine mammals include the impact and vibratory installation and removal of concrete and steel piles, and steel casings.

A detailed description of the planned construction project is provided in the **Federal Register** notice for the proposed IHA (91 FR 53486, August 18, 2026). Since that time, Navy has revised the size pile casings to be installed at NBK Manchester (see **Changes from Proposed to Final IHA** section). No other changes have been made to the planned activities, and a detailed description is not provided here. Please refer to the **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 August 18, 2026. 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, NMFS received one comment letter from a private citizen. All relevant, substantive comments, and NMFS' responses, are provided below. The comments and recommendations are available online at:

<https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities>. Please see the comment submission for full details regarding the recommendations and supporting rationale.

Comment 1: Citing their status under the Endangered Species Act (ESA), a private citizen urged NMFS to require robust real-time monitoring and shutdown protocols specifically calibrated for southern resident killer whales (SRKW) at NS Everett and

NBK Manchester, rather than standard harbor seal or harbor porpoise-focused mitigation measures.

Response: NMFS clarifies that the required mitigation for this project, at all installations, has been designed to account for all hearing groups that could be present in the project area, including ESA-listed SRKW. Measures specifically designed to mitigate impacts to ESA-listed SRKW include shutting down pile driving should a large whale or killer whale be observed within or approaching the largest harassment zone, and on at least a daily basis, contacting the Orca Network and monitoring their social media to review updated sighting locations of large whales, and shutting down or delaying pile driving if any large whale species are approaching, or within the shutdown zone. In addition to applying to killer whales, these mitigation requirements apply to all large whales, including gray whales and ESA-listed humpback whales.

Comment 2: A private citizen requested that NMFS consider whether additional precautionary buffers or seasonal restrictions near NS Everett are warranted, given its proximity to a gray whale feeding Biologically Important Area (BIA) and given that gray whales are currently experiencing high numbers of strandings along the Washington coast and in Puget Sound.

Response: While we acknowledge that the Eastern North Pacific stock of gray whales is currently experiencing elevated numbers of strandings along the Washington coast and in Puget Sound, we do not agree that this stock cannot sustain eight incidents of Level B harassment, which are likely to be relatively low-level, temporary behavioral reactions, without incurring greater than a negligible impact on the stock.

As described in the notice of the proposed IHA for this action (91 FR 53486, August 18, 2026), NMFS finds that small numbers of marine mammals may be taken relative to the population size of the affected species or stocks and that the incidental take of marine

mammals from the Navy's specified activities will have a negligible impact on all affected marine mammal species or stocks, including gray whales.

Changes from the Proposed IHA to the Final IHA

Changes from the proposed IHA to the final issued IHA pertain to a revision to the size of the steel casings that are to be used to support the installation of 24-inch concrete piles at NBK Manchester. The Navy has indicated that 74 42-in steel casings may be vibratory installed and removed instead of 74 36-in steel casings, at the same production rates (table 1).

Table 1 -- ¹Pile types, installation methods, and durations at NBK Bangor, NS Everett, and NBK Manchester

Installation or Removal	Pile Size	Pile Type	Method	Bubble Curtain Planned?	Location	# of piles	Piles/day	Minutes (vibratory) or strikes (impact) per pile	Construction Days
NBK Bangor									
Removal	24-in	Concrete	Vibratory	No	Olympic Pier	4	2	10 ²	2
			Vibratory	No	EHW-1	11	3	10	4
Installation	20-in	Steel	Vibratory	No	Olympic Pier	4	2	10 ²	2
			Impact proofing	Yes			2	500	2
	30-in	Steel	Vibratory	No	EHW-1	12	2	10	6
			Impact proofing	Yes			2	1000	6
NS Everett									
Removal	12-in	Steel	Vibratory	No	Piers A, B, and South Wharf	144	4	10	36
Installation	18-in	Steel	Vibratory	No	Piers A, B, and South Wharf	144 (up to 20 may be impact proofed)	4	10	36
			Impact proofing	Yes			4	400	5
NBK Manchester									
Removal	14-in H	Steel	Vibratory	No	Fuel Pier	74	3	10	25
	36-in Casing	Steel	Vibratory	No		74	3	30	25
	42-in Casing								
Installation	36-in Casing	Steel	Vibratory	No	Fuel Pier	74 ³	2	30	37
	42-in Casing								
	24-in	Concrete	Impact	No	Fuel Pier	30 ⁴	2	1000	15
Installation and Removal	24-in	Steel	Vibratory	No	Fuel Pier	52	4	15	26

¹Impact and vibratory driving may occur on the same or separate days depending on contractor needs and scheduling.

²The Navy estimates that vibratory installation will take a median time of 10 minutes per pile, with a maximum time of 45 minutes.

³The vibratory installation and removal of 74 steel casings used to support the installation of 24-in concrete may be 42-in rather than 36-in in diameter.

⁴Up to 30 out of 74 24-inch concrete piles may be installed with impact driving. The remaining piles are expected to be placed after the casing is installed via vibratory driving and auger drilling.

This change is minor in terms of its effects on marine mammals and does not change our small numbers and negligible impact analysis and determinations. To complete the analysis to support this determination, NMFS and the Navy used a sound source proxy level of 170 referenced to 1 micropascal (dB re 1 μ Pa) root mean square (RMS) at 10 m for vibratory installation and removal of 42-in steel casings (table 5) at the same production rates planned for vibratory installation and removal of 36-in steel casings (table 1; table 6).

This change from vibratory installation and removal of 36-in steel casings to vibratory installation and removal of 42-in steel casings increases the size of the estimated Level A and Level B harassment zones associated with this activity (table 7). However, the clearance and shutdown zones associated with vibratory pile driving and removal of 42-in steel casings are established following the same logic applied to the establishment of clearance and shutdown zones of 36-in steel casings (table 9); for Very High Frequency (VHF) cetaceans, phocids (PW), and otariids (OW), clearance zones are equivalent to the shutdown zones and are based on the Level A harassment isopleths. For large cetaceans and killer whales, the clearance zones are based on the distance that can reliably be observed by Protected Species Observers (PSOs) and remain unchanged. For large cetaceans and killer whales, the shutdown zones correspond to the Level B harassment isopleths. Although the projected Level B harassment isopleth for vibratory 42-in steel casings is much larger than the Level B harassment isopleth for 36-in steel casings (21,544 m and 13,594 m, respectively, table 7), land truncates the Level B harassment isopleth at 13.9 km at its furthest distance, requiring only a small increase in the size of the shutdown zone. As such, there is no increase to the estimated take (table 8).

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 2 lists all species or stocks for which take is expected and authorized for this activity and summarizes information related to the population or stock, including regulatory status under the MMPA and 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 mortality and serious injury (M/SI) 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 2 are the most recent available at the time of

publication (including from the 2024 SARs) and are available online at:

<https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments>.

Table 2 -- Species, Stocks, and the Status of Marine Mammals¹ with Estimated Take from the Specified Activities

Common name	Scientific name	Stock	ESA/MMPA status; Strategic (Y/N) ²	Stock abundance (CV, Nmin, most recent abundance survey) ³	PBR	Annual M/SI ⁴
Order Artiodactyla – Cetacea – Mysticeti (baleen whales)						
Family Eschrichtiidae						
Gray Whale	<i>Eschrichtius robustus</i>	Eastern North Pacific	-, -, N	26,960 (0.05, 25,849, 2016)	801	131
Family Balaenopteridae (rorquals)						
Humpback Whale ⁵	<i>Megaptera novaeangliae</i>	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)						
Family Delphinidae						
Killer Whale	<i>Orcinus orca</i>	Eastern North Pacific Southern Resident	E, D, Y	73 (N/A, 73, 2023)	0.13	0
		West Coast Transient	-, -, N	349 (N/A ⁶ , 349, 2018)	3.5	0.4
Family Phocoenidae (porpoises)						
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
Order Carnivora – Pinnipedia						
Family Otariidae (eared seals and sea lions)						
California 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 (N/A ⁷ , 36,308, 2022)	2,178	93.2
Family Phocidae (earless seals)						
Harbor Seal	<i>Phoca vitulina</i>	Washington Inland Hood Canal	-, -, N	UNK (UNK ⁸ , UNK, 1999)	UND	0.2
		Washington Inland Southern Puget Sound	-, -, N	UNK (UNK ⁸ , UNK, 1999)	UND	3.4
		Washington Northern Inland Waters	-, -, N	UNK (UNK ⁸ , UNK, 1999)	UND	9.8
Northern Elephant Seal	<i>Mirounga angustirostris</i>	California Breeding	-, -, N	194,907 (N/A, 88,794, 2023)	5,328	11.2

¹Information 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/>).

²Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

³NMFS marine mammal stock assessment reports online at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports>. CV is coefficient of variation; Nmin is the minimum estimate of stock abundance.

⁴These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.*, commercial fisheries, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value or range. A CV associated with estimated mortality due to commercial fisheries is presented in some cases.

⁵According to Curtis *et al.* (2025), the probability that whales encountered in the Salish Sea are from the ESA-listed Central America DPS (Central America/Southern Mexico stock) is 4.3 percent. As such no take of this stock is authorized.

⁶Nest is based upon count of individuals identified from photo-ID catalogs in analysis of a subset of data from 1958 to 2018.

⁷Nest 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.

⁸Abundance estimates are greater than 8 years old, so stock abundance is considered unknown. Pearson *et al.*, 2024 estimates the population abundance of the Washington Northern Inland Waters stock of harbor seal to be 15,898, the Washington Inland Southern Puget Sound stock of harbor seal to be 2,529, and the population abundance of the Hood Canal stock of harbor seal to be 2,832.

A detailed description of the species likely to be affected by the 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 IHA (91 FR 53486, August 18, 2026); 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 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 or hear over the same frequency range (*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.*). Subsequently, NMFS (2018, 2024) described generalized hearing ranges for these marine mammal hearing groups (table 3). Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from composite audiograms, previous analyses in NMFS (2018), and/or data from Southall *et al.* (2007) and Southall *et al.* (2019).

Table 3 -- Marine Mammal Hearing Groups (NMFS, 2024)

Hearing Group	Generalized Hearing Range*
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 36 kHz
High-frequency (HF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz
Very High-frequency (VHF) cetaceans (true porpoises, <i>Kogia</i> , river dolphins, Cephalorhynchid, <i>Lagenorhynchus cruciger</i> & <i>L. australis</i>)	200 Hz to 165 kHz
Phocid pinnipeds (PW) (underwater) (true seals)	40 Hz to 90 kHz
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 68 kHz
* Represents the generalized hearing range for the entire group as a composite (<i>i.e.</i> , all species within the group), where individual species' hearing ranges may not be as broad. Generalized hearing range chosen based on ~65 dB threshold from composite audiogram, previous analysis in NMFS (2018), and/or data from Southall <i>et al.</i> (2007) and Southall <i>et al.</i> (2019). Additionally, animals are able to detect very loud sounds above and below that “generalized” hearing range.	

For more details concerning these groups and associated generalized hearing ranges, please see NMFS (2024) for a review of available information.

Potential Effects of Specified Activities on Marine Mammals and their Habitat

The effects of underwater noise from the Navy's construction activities have the potential to result in behavioral harassment of marine mammals in the vicinity of the project area. The notice of the proposed IHA (91 FR 53486, August 18, 2026) included a discussion of the effects of anthropogenic noise on marine mammals and the potential effects of underwater noise from the Navy's construction activity 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 the proposed IHA (91 FR 53486, August 18, 2026).

Estimated Take of Marine Mammals

This section provides an estimate of the number of incidental takes authorized through the IHA, which will inform NMFS' consideration of "small numbers," the negligible impact determinations, and impacts on subsistence uses.

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 are primarily by Level B harassment, as use of the acoustic sources (*i.e.*, vibratory pile driving and removal, impact pile driving) has the potential to result in disruption of behavioral patterns for individual marine mammals. There is also some potential for auditory injury (AUD INJ; Level A harassment) to result, primarily for VHF species, PW, and OW, because predicted AUD INJ zones are larger in comparison to the observability for some species. AUD INJ is unlikely to occur for mysticetes and

high-frequency species. The 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 criteria above which NMFS believes there is some reasonable potential for marine mammals to be behaviorally harassed or incur some degree of AUD INJ; (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 Criteria

NMFS recommends the use of acoustic criteria 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 AUD INJ of some degree (equated to Level A harassment).

Level B Harassment

Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source or exposure context (*e.g.*, frequency, predictability, duty cycle, duration of the exposure, signal-to-noise ratio, distance to the source), the environment (*e.g.*, bathymetry, other noises in the area, predators in the area), and the receiving animals (hearing, motivation, experience, demography, life stage, depth) and can be difficult to

predict (*e.g.*, Southall *et al.*, 2007; Southall *et al.*, 2021; Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a metric that is both predictable and measurable for most activities, NMFS typically uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS generally predicts that marine mammals are likely to be behaviorally harassed in a manner considered to be Level B harassment when exposed to underwater anthropogenic noise above RMS Sound Pressure Level (SPL) of 120 dB re 1 μ Pa for continuous (*e.g.*, vibratory pile driving, drilling) and above RMS SPL 160 dB re 1 μ Pa for non-explosive impulsive (*e.g.*, seismic airguns) or intermittent (*e.g.*, scientific sonar) sources. Generally speaking, estimates of take by Level B harassment 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 2026 MPR project includes the use of continuous (vibratory pile driving and removal) and impulsive (impact pile driving) sources, and therefore the RMS SPL thresholds of 120 and 160 dB re 1 μ Pa are applicable.

Level A harassment

NMFS' Updated Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 3.0) (Updated Technical Guidance, 2024) identifies dual criteria to assess AUD INJ (Level A harassment) to five different underwater 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

2026 MPR project includes the use of impulsive (impact pile driving) and non-impulsive (vibratory pile driving and removal) sources.

The 2024 Updated Technical Guidance criteria include both updated thresholds and updated weighting functions for each hearing group. The thresholds are provided in the table below. The references, analysis, and methodology used in the development of the criteria are described in NMFS' 2024 Updated Technical Guidance, which may be accessed at: <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance-other-acoustic-tools>.

Table 4 -- Thresholds Identifying the Onset of Auditory Injury

	AUD INJ Onset Acoustic Thresholds* (Received Level)	
Hearing Group	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	<i>Cell 1</i> $L_{pk,flat}$: 222 dB $L_{E,LF,24h}$: 183 dB	<i>Cell 2</i> $L_{E,LF,24h}$: 197 dB
High-Frequency (HF) Cetaceans	<i>Cell 3</i> $L_{pk,flat}$: 230 dB $L_{E,HF,24h}$: 193 dB	<i>Cell 4</i> $L_{E,HF,24h}$: 201 dB
Very High-Frequency (VHF) Cetaceans	<i>Cell 5</i> $L_{pk,flat}$: 202 dB $L_{E,VHF,24h}$: 159 dB	<i>Cell 6</i> $L_{E,VHF,24h}$: 181 dB
Phocid Pinnipeds (PW) (Underwater)	<i>Cell 7</i> $L_{pk,flat}$: 223 dB $L_{E,PW,24h}$: 183 dB	<i>Cell 8</i> $L_{E,PW,24h}$: 195 dB
Otariid Pinnipeds (OW) (Underwater)	<i>Cell 9</i> $L_{pk,flat}$: 230 dB $L_{E,OW,24h}$: 185 dB	<i>Cell 10</i> $L_{E,OW,24h}$: 199 dB
* Dual metric criteria for impulsive sounds: Use whichever criteria results in the larger isopleth for calculating AUD INJ onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level criteria associated with impulsive sounds, the PK SPL criteria are recommended for consideration for non-impulsive sources. Note: Peak sound pressure level ($L_{p,0-pk}$) has a reference value of 1 μPa, and weighted cumulative sound exposure level ($L_{E,p}$) has a reference value of 1 μPa²s. In this table, criteria are abbreviated to be more reflective of International Organization for Standardization standards (ISO, 2017). The subscript “flat” is being included to indicate peak sound pressure are flat weighted or unweighted within the generalized hearing range of marine mammals underwater (<i>i.e.</i>, 7 Hz to 165 kHz). The subscript associated with cumulative sound exposure level criteria indicates the designated marine mammal auditory weighting function (LF, HF, and VHF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The weighted cumulative sound exposure level criteria could be exceeded in a multitude of ways (<i>i.e.</i>, varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these criteria will be exceeded.		

Ensonified Area

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

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

Source levels for these activities are based on reviews of measurements of the same or similar pile types and dimensions of piles available in literature. Source levels used for each pile size and activity are presented in table 5. Source levels for vibratory installation and removal of piles of the same diameter are assumed to be the same.

The Navy plans to use bubble curtains when impact driving steel piles. 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), SPL (peak) and Sound Exposure Level (SEL) source levels for these pile sizes, and reduce the applied source levels accordingly.

During the 2023 study at 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 a proposed rule for regulations (83 FR 9366, March 5, 2018) preceding two consecutive IHAs (89 FR 47539, June 3, 2026) that preceded this project 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 5 -- Estimates of mean underwater sound levels generated during vibratory and impact pile installation and vibratory pile removal (unattenuated)

Method	Type	Size (in)	RMS	Peak	SEL	Attenuation to be applied	Reference
Impact	Concrete	24	174	188	164	N/A	Navy, 2015
	Steel	18	185	200	175	-8 dB ¹	Caltrans, 2020
		20	193	210	181	-8 dB ¹	Navy, 2015 ²
		30	195	216	186	-8 dB ¹	Navy, 2015
Vibratory Installation and Removal	Steel	12	155	N/A	N/A	N/A	Caltrans, 2015
		14 H	150	N/A	N/A	N/A	Caltrans, 2015
		18	161	N/A	N/A	N/A	Navy, 2015 ³
		20	161	N/A	N/A	N/A	Navy, 2015 ³
		24	161	N/A	N/A	N/A	Navy, 2015
		30	166	N/A	N/A	N/A	Navy, 2015
	Concrete	24	163	N/A	N/A	N/A	NAVFAC SW ⁴ 2022
	Casings	36	167	N/A	N/A	N/A	Navy, 2015
		42 ⁵	170	N/A	N/A	N/A	Navy, 2012; Navy 2013

Note: dB peak = peak sound Level; rms = root mean square; SEL = sound exposure level

¹Values modeled for impact driving of 18, 20 and 30-in steel piles will be reduced by 8 dB for noise exposure modeling to account for attenuation from a bubble curtain.

²The Navy uses sound levels estimated for impact pile driving of 24-in steel as proxy for this pile type.

³The Navy uses sound levels estimated for vibratory pile driving of 16 and 24-in steel as proxy for these pile types.

⁴The Navy uses sound levels estimated for vibratory pile driving of 20-in concrete as proxy for this pile type.

⁵NMFS and the Navy refer to measured sound levels for vibratory driving of 48-in steel pipe piles as proxy for this pile type and find that 170 dB RMS is a generally conservative value based on those measurements.

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:

$$TL = B \times \text{Log}_{10} (R_1/R_2), \text{ where}$$

TL = transmission loss in dB

B = transmission loss coefficient

*R*₁ = the distance of the modeled SPL from the driven pile, and

*R*₂ = the distance from the driven pile of the initial measurement

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 and Hood Canal 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 ensonified area associated with Level A harassment is more technically challenging to predict due to the need to account for a duration component. Therefore, NMFS developed an optional User Spreadsheet tool to accompany the 2024 Updated Technical Guidance that can be used to relatively simply predict an isopleth distance for use in conjunction with marine mammal density or occurrence to help predict potential takes. We note that because of some of the assumptions included in the methods underlying this optional tool, we anticipate that the resulting isopleth estimates are typically going to be overestimates of some degree, which may result in an overestimate of potential take by Level A harassment. However, this optional tool offers a practical, alternative 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 AUD INJ. Inputs used in the optional User Spreadsheet tool (table 6), and the resulting estimated isopleths (table 7), are reported below.

Table 6 -- User Spreadsheet Input Parameters used for Calculating Level A harassment isopleths for pile driving and removal based on User Spreadsheet inputs Provided by the Navy

Location	Pile Size and Type	Spreadsheet tab used	Weighting factor adjustment	Piles per day	Duration to drive a single pile (minutes)	Strikes
Bangor						
Olympic Pier	24-in Concrete	A.1. Vibratory pile driving	2.5	2	10	N/A
EHW-1		A.1. Vibratory pile driving	2.5	3	10	N/A
Olympic Pier	20-in Steel	A.1. Vibratory pile driving	2.5	2	10	N/A

		E.1. Impact pile driving	2	2	N/A	500
EHW-1	30-in Steel	A.1. Vibratory pile driving	2.5	2	10	N/A
		E.1. Impact pile driving	2	2	1000	N/A
NS Everett						
Piers A, B, and South Wharf	12-in Steel	A.1. Vibratory pile driving	2.5	4	10	N/A
	18-in Steel	A.1. Vibratory pile driving	2.5	4	10	N/A
		E.1. Impact pile driving	2	4	N/A	400
NBK Manchester						
Fuel Pier	14-in H	A.1. Vibratory pile driving	2.5	3	10	N/A
	36-in or 42-in casing (removal)	A.1. Vibratory pile driving	2.5	3	30	N/A
	36-in or 42-in casing (install)	A.1. Vibratory pile driving	2.5	2	30	N/A
	24-in concrete	E.1. Impact pile driving	2	2	N/A	1000
	24-in Steel	A.1. Vibratory pile driving	2.5	4	15	N/A

Table 7 -- Projected distances to Level A and Level B harassment isopleths (m) by hearing group (practical spreading)

Pile size and Type	Method	Location	Level A harassment isopleth (m) (attenuated as relevant)					Level B harassment zone m
			LF	HF	VHF	PW	OW	
NBK Bangor								
24-in Concrete	Vibratory Removal	Olympic Pier	6.0	2.3	4.9	7.8	2.6	7,356
		EHW-1	7.9	3.0	6.5	10	3.4	7,356
20-in Steel	Vibratory Install	Olympic Pier	4.4	1.7	3.6	5.7	1.9	5,412
	Impact Install		214	27	332	190	71	464
30-in Steel	Vibratory Install	EHW-1	10	3.7	7.8	12	4.1	11,659
	Impact Install		733	94	1,135	651	243	631
NS Everett								
12-in Steel	Vibratory Removal	Piers A, B, and South Wharf	2.8	1.1	2.3	3.6	1.2	2,154
18-in Steel	Vibratory Install	Piers A, B, and South Wharf	7.0	2.7	5.7	9.1	3.0	5,412

	Impact Install		117	15	181	104	39	136
NBK Manchester								
14-in H Steel	Vibratory Removal	Fuel Pier	1.1	0.4	0.9	1.4	0.5	1,000
36-in Steel			30	12	25	39	13	13,594
42-in Steel			37	14	30	47	16	21,544 ¹
36-in Steel	Vibratory Install	Fuel Pier	23	8.9	19	30	10	13,594
42-in Steel			48	19	39	62	21	21,544 ¹
24-in Concrete	Impact Install		86	11	132	76	28	86
24-in Steel	Vibratory Install and Removal	Fuel Pier	9.2	3.5	7.5	12	4.0	5,412

¹Underwater noise would be truncated by land at approximately 13.9 km from Manchester Fuel Pier at its furthest distance.

Marine Mammal Occurrence

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

Available information regarding marine mammal occurrence in the vicinity of the project area includes site-specific and nearby survey information from the Navy and the Washington State Department of Transportation (WSDOT). Specifically, data sources consulted included 1) the Navy’s “Summary of Weekly Marine Mammal Surveys at Navy Northwest Region Installations: 2008 – 2025”, and 2) PSO monitoring completed across a) 156 monitoring days associated with four projects completed by the Navy at Bangor; b) 11 monitoring days associated with one project completed by the Navy at Manchester, and c) 169 monitoring days between 2015 and 2021, between the months of August and February, associated with the multi-year WSDOT Multimodal Construction Project completed by WSDOT, which was located near NS Everett. Species-specific data summaries of the above are included in the **Description of Marine Mammals in the Area of Specified Activities** section.

For large whales (humpback whales, minke whales, and gray whales), killer whales (transient and resident), Dall's porpoise, and elephant seals, NMFS considered the data sources identified above, as well as 1) data collected by The Whale Museum between August 2022 and July 2024 from Blake Island (approximately 3 km from NBK Manchester) provided by the Navy and, 2) The Orca Network archived sightings.

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.

For species with rare or infrequent occurrence at a given installation during the in-water work window, the likelihood of occurrence 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. In most cases, the occurrence of the species in this category (*i.e.*, large whales, killer whales, Dall's porpoise, and elephant seals (all installations)), is not anticipated to extend for multiple days. Except for gray whales, where increased strandings reports suggest individuals may occur in an area for a longer period of time, 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 (across all installations). The equation used to estimate take for species with rare or infrequent occurrence is:

$$\text{Exposure estimate} = \text{Probable abundance during construction} \times \text{probable duration}$$

Where:

Probable abundance = expected group size or number based on data sources referenced above

Probable duration = probable duration of the animal(s) presence at construction sites during the entire in-water pile driving period.

For the remaining species, the Navy utilized density estimates or site-specific survey data to estimate the likelihood of occurrence. Specifically, the Navy proposed to use density estimates of harbor porpoise from the Navy's Marine Mammal Species Density Database (Navy, 2019) to estimate the likelihood of occurrence. However, NMFS finds it more appropriate to use local monitoring data to estimate the likelihood of occurrence for harbor porpoise. As such, for harbor porpoise and the other remaining species (California sea lion, Steller sea lion, and harbor seal), the Navy and NMFS predicted a daily occurrence, and estimated take by multiplying the estimated daily occurrence for each species by the number of in-water construction days, generally using the following equation;

$$\text{Take by Level B harassment} = \text{marine mammal occurrence} \times \text{days of pile driving activities.}$$

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—an overall take estimate for these species has been developed across the entire project.

The Navy plans to implement a shutdown of pile driving activity if any large whale or killer whale is observed within or approaching any defined harassment zone (see **Mitigation** section). Additionally, the Navy plans at least daily coordination with the Orca Network to maintain situational awareness of large whales in the vicinity of the project sites and shut down should they be reported or observed by PSOs near the project site. As a result of this mitigation, we do not believe that Level A harassment is a likely outcome upon occurrence of any large whale or killer whale. Likewise, the Navy has not requested take by Level A harassment of large whales or killer whales, nor has NMFS authorized take by Level A harassment of these species.

In most cases where shutdown zones are greater than or equal to the calculated Level A harassment zones, take by Level A harassment is not authorized. However, there

are scenarios for some pinniped species and installations (*i.e.*, California sea lions at NBK Bangor and NS Everett and harbor seals at NS Everett) where take by Level A harassment is authorized to account for the possibility that individuals could enter the shutdown zone and stay long enough to incur AUD INJ before PSOs are able to detect them and enact a shutdown.

Additionally, in cases where the Level A harassment zones are larger than the shutdown zones (*i.e.*, impact proofing of 30-inch steel for VHF and harbor seals at NBK Bangor), take by Level A harassment is authorized. The same general equation is used for take by Level A harassment that is used for take by Level B harassment: marine mammal occurrence multiplied by days of pile driving activities. In cases where the predicted Level A harassment zones exceed the shutdown zones for species that are occasionally or rarely expected to occur in the project area (*e.g.*, Dall's porpoise), it is assumed that takes could be by either Level A or Level B harassment.

We acknowledge that the number of estimated exposures above higher threshold criteria (*e.g.*, sound exposures exceeding Level A harassment criteria) also encompasses the potential for less impactful effects (*e.g.*, Level B harassment). An individual within the estimated Level A harassment isopleth may not incur auditory injury due to limited exposure duration; however, the individual may have experienced Level B harassment. This outcome is accounted for in our authorization of potential higher-level takes and in our analysis. Specifically, due to this approach for calculating Level A harassment and Level B harassment for Dall's porpoise, the number of takes by Level A harassment authorized may be applied to observations of Level B harassment. However, the total number of takes may not exceed the sum of the takes authorized by Level A and Level B harassment (table 8).

The Navy plans to shut down in-water pile driving upon observation of any large whale or killer whale approaching or within any estimated harassment zone. While the

Navy plans to coordinate with the Orca Network to maintain situational awareness of the presence of large whales or killer whales near all three project areas, the Level B harassment zone is larger than is practicably observable by PSOs during most activities. As such, some take by Level B harassment is authorized for these species.

Humpback Whale

The Navy requested and NMFS concurred that one group of two humpback whales may occur in the Level B harassment zone during active pile driving on a total of 2 days over the course of the construction season. Therefore, NMFS has authorized four takes by Level B harassment of humpback whales.

No takes by Level A harassment of humpback whales are anticipated and none are authorized.

Gray Whale

The Navy initially assumed that one group of two gray whales may occur in the Level B harassment zone during active pile driving on a total of 2 days over the course of the construction season. However, given the recent reports of stranded gray whales in Puget Sound, the Navy requested and NMFS concurred that up to eight gray whales may be taken by Level B harassment during the project period. Therefore, NMFS has authorized eight takes by Level B harassment of gray whales.

No takes by Level A harassment of gray whales are anticipated and none are authorized.

Minke Whale

The Navy requested and NMFS concurred that one group of two minke whales may occur in a Level B harassment zone during active pile driving on a total of 2 days over the course of the construction season for a total of four takes by Level B harassment. Therefore, NMFS has authorized four takes by Level B harassment of minke whales.

No takes by Level A harassment of minke whales are anticipated and none are authorized.

Transient Killer Whale

The Navy requested and NMFS concurred that 1 group of 6 transient killer whales may occur in a Level B harassment zone during active pile driving on a total of 2 days over the course of the construction season for a total of 12 takes by Level B harassment. Therefore, NMFS has authorized 12 takes by Level B harassment of transient killer whales.

No takes by Level A harassment of transient killer whales are anticipated and none are authorized.

Southern Resident Killer Whale

The Navy requested and NMFS concurred that 1 group of 10 SRKW may occur in the Level B harassment zone during active pile driving on a total of 2 days over the course of the construction season for a total of 20 takes by Level B harassment. Therefore, NMFS has authorized 20 takes by Level B harassment of SRKWs.

No takes by Level A harassment of SRKW are anticipated and none are authorized.

Dall's Porpoise

The Navy requested and NMFS concurred that one group of two Dall's porpoise could occur within the project area during active pile driving on a total of 2 days over the course of the construction season for a total of four. Because exposure estimates are low and the Level A harassment zones are larger than are likely observable during impact pile driving, NMFS has authorized these four takes as Level A harassment, acknowledging that instead the takes could be by the less severe Level B harassment.

Harbor Porpoise

NBK Bangor – The Navy requested and NMFS concurred that 12 harbor porpoises could occur within the Level B harassment zone each construction day. This results in 264 takes by Level B harassment of harbor porpoises across the 22 construction days at this project site.

The calculated Level A harassment zone expected to occur during the 6 days of impact proofing of 30-in steel piles at Explosives Handling Wharf-1 (EHW-1) is 1,135 m, and the Navy plans to maintain a shutdown zone of 350 m (table 9). NMFS estimates that 12 harbor porpoises per day could occur within the calculated Level A harassment zone and remain for a sufficient period to accumulate enough energy to result in AUD INJ. As such, NMFS has authorized 72 takes by Level A harassment of harbor porpoises at this project site.

NMFS modified the calculated takes by Level B harassment to deduct the estimated amount of take by Level A harassment (*i.e.*, 264 takes by Level B harassment–72 takes by Level A harassment = 192 takes by Level B harassment). Therefore, for harbor porpoises, NMFS has authorized 192 takes by Level B harassment and 72 takes by Level A harassment for a total of 264 takes across the 22 days of construction planned at this site.

NS Everett – The Navy requested and NMFS concurred that two harbor porpoises could occur within the Level B harassment zone each construction day. This results in 154 takes by Level B harassment of harbor porpoises across the 77 construction days at this project site.

No takes by Level A harassment of harbor porpoises are anticipated at this project site and none are authorized.

NBK Manchester – that the Navy requested and NMFS concurred that two harbor porpoises could occur within the Level B harassment zone each construction day. This

results in 256 takes by Level B harassment of harbor porpoises across 128 construction days at this project site.

No takes by Level A harassment of harbor porpoises are anticipated at this project site and none are authorized.

Across all installations, NMFS has authorized 602 takes by Level B harassment of and 72 takes by Level A harassment of harbor porpoises for a total of 674 takes.

California Sea lion

NBK Bangor – The Navy requested and NMFS concurred that 35 California sea lions could occur within the Level B harassment zone each construction day. This results in 770 takes by Level B harassment of California sea lions across the 22 construction days at this project site.

The Navy plans to shut down at distances slightly larger than the Level A harassment zones associated with this project site (see table 9). However, given the proximity of hauled out California sea lions to the project site, and the fact that on 6 construction days the calculated Level A harassment zone is 243 m (during impact proofing of 30-inch steel at EHW-1), NMFS predicts that it is possible that up to two California sea lions could go unobserved and remain within the calculated Level A harassment zone for a sufficient period to accumulate enough energy to result in AUD INJ. This results in two takes by Level A harassment of California sea lions at this project site.

Takes by Level B harassment were modified to deduct the amount of take by Level A harassment estimated (*i.e.*, 770 takes by Level B harassment– 2 takes by Level A harassment = 768 takes by Level B harassment). This results in 768 takes by Level B harassment and 2 takes by Level A harassment for a total of 770 takes across the 22 days of construction planned at this site.

NS Everett – The Navy requested and NMFS concurred that 35 California sea lions could occur within the Level B harassment zone each construction day. This results in 2,695 takes by Level B harassment across the 77 construction days at this project site.

The Navy plans to shut down at distances slightly larger than the Level A harassment zones associated with this project site (see table 9). However, given the proximity of hauled out California sea lions to the project site (the PSB at this location directly connects to the southwest end of Pier B and runs about 60 m along the southern end of both Piers A and B, and approximately 160 m along the southeastern extent of Pier A), and the fact that on 5 construction days the calculated Level A harassment zone is 38 m (during impact proofing of 18-inch steel fender piles at Piers A, B, and South Wharf), NMFS predicts that it is possible that up to one California sea lion per day could go unobserved and remain within the calculated Level A harassment zone for a sufficient period to accumulate enough energy to result in AUD INJ. This results in five takes by Level A harassment of California sea lions at this project site.

Takes by Level B harassment were modified to deduct the amount of take by Level A harassment estimated (*i.e.*, 2,695 takes by Level B harassment – 5 takes by Level A harassment = 2,690 takes by Level B harassment). This results in 2,690 takes by Level B harassment and 5 takes by Level A harassment for a total of 2,695 takes across the 77 days of construction planned at this site.

NBK Manchester – The Navy requested and NMFS concurred that six California sea lions could occur within the Level B harassment zone each construction day. This results in 768 takes by Level B harassment of California sea lions across 128 construction days at this project site.

No takes by Level A harassment of California sea lions are anticipated at this project site and none are authorized.

Across all installations, NMFS has authorized 4,226 takes by Level B harassment and 7 takes by Level A harassment of California sea lions for a total of 4,233 takes.

Steller Sea Lion

NBK Bangor – The Navy requested and NMFS concurred that four Steller sea lions could occur within the Level B harassment zone each construction day. This results in 88 takes by Level B harassment of Steller sea lions across the 22 construction days at this project site.

No takes by Level A harassment of Steller sea lions are anticipated at this project site and none are authorized.

NS Everett – The Navy requested and NMFS concurred that 0.25 Steller sea lions could occur within the Level B harassment zone every construction day, or one Steller sea lion could occur within the Level B harassment zone every 4 construction days. This results in 19 takes by Level B harassment of Steller sea lions across the 77 days at this project site.

No takes by Level A harassment of Steller sea lions are anticipated at this project site and none are authorized.

NBK Manchester – The Navy requested and NMFS concurred that four Steller sea lions could occur within the Level B harassment zone each construction day. This results in 512 takes by Level B harassment across the 128 construction days at this project site.

No takes by Level A harassment of Steller sea lions are anticipated at this project site and none are authorized.

Across all installations, NMFS authorized 619 takes by Level B harassment of Steller sea lions. No takes by Level A harassment of Steller sea lions are requested and none are authorized.

Harbor Seal

NBK Bangor – The Navy requested and NMFS concurred that 16 harbor seals could occur within the Level B harassment zone each construction day. This results in 352 takes by Level B harassment across the 22 construction days at this project site.

The calculated Level A harassment zone expected to occur during 6 days of impact proofing of 30-inch steel piles at EHW-1 is 651 m. The calculated Level A harassment zone expected to occur during impact proofing of 20-inch steel fender piles at Olympic Pier is 190 m (planned on 2 construction days). The Navy plans to maintain a shutdown zone of 200 m (table 9) at this site during all impact pile driving activities. NMFS predicts that three harbor seals could be present in the project area during each of the 6 construction days where the calculated Level A harassment zone exceeds the planned shutdown zone. Additionally, given the regular occurrence of harbor seals at the project site, NMFS predicts that up to three harbor seals per day could go unobserved and remain within the calculated Level A harassment zone for a sufficient period to accumulate enough energy to result in AUD INJ during the 2 construction days where shutdown zone exceeds the calculated Level A harassment zone, but the Level A harassment zone is relatively large and more challenging for PSOs to effectively monitor. As such, NMFS has authorized 24 takes by Level A harassment of harbor seals at this project site.

Takes by Level B harassment were modified to deduct the amount of take by Level A harassment estimated (*i.e.*, 352 takes by Level B harassment–24 takes by Level A harassment = 328 takes by Level B harassment). This results in 328 takes by Level B harassment and 24 takes by Level A harassment of harbor seals for a total of 352 takes across the 22 days of construction planned at this site.

NS Everett –The Navy requested and NMFS concurred that 54 harbor seals could occur within the Level B harassment zone each construction day. Fifty-four represents 25 percent of the harbor seals documented during the Navy’s pinniped monitoring, because

surveys were recently expanded to include the entire East Waterway. This results in 4,158 takes by Level B harassment across the 77 construction days planned at this site.

The Navy plans to shut down at distances slightly larger than the Level A harassment zones associated with this project site (see table 9). However, given the regular occurrence of harbor seals at the project site, and the fact that on 5 construction days the calculated Level A harassment zone is 104 m (during impact proofing of 18-inch steel fender piles at Piers A, B, and South Wharf), NMFS predicts that it is possible that up to one harbor seal per day could go unobserved and remain within the calculated Level A harassment zone for a sufficient period to accumulate enough energy to result in AUD INJ. As such, NMFS has authorized five takes by Level A harassment of harbor seals at this project site.

Takes by Level B harassment were modified to deduct the amount of take by Level A harassment estimated (*i.e.*, 4,158 takes by Level B harassment – 5 takes by Level A harassment = 4,153 takes by Level B harassment). This results in 4,153 takes by Level B harassment and 5 takes by Level A harassment for a total of 4,153 takes across the 77 days of construction planned at this site.

NBK Manchester – The Navy requested and NMFS concurred that 13 harbor seals could occur within the Level B harassment zone each construction day. This results in 1,664 takes by Level B harassment across the 128 construction days planned at this project site.

No takes by Level A harassment of California sea lions are requested at this project site and none are authorized.

Across all installations, we authorized 6,145 takes by Level B harassment of and 29 takes by Level A harassment of harbor seals for a total of 6,174 takes.

Northern Elephant Seal

Because the occurrence of northern elephant seals in Puget Sound is unpredictable and this species is known to linger, NMFS predicts that one northern elephant seal could occur within the project area on up to 4 days during the project period. This results in four takes by Level B harassment.

No takes by Level A harassment of northern elephant seals are anticipated and none are authorized.

Table 8 -- Take by stock and harassment type and as a percentage of stock abundance

Species	Stock	Level A harassment	Level B harassment	Total harassment	Take as a percentage of stock abundance
Gray whale	Eastern N. Pacific	0	8	8	<1
Humpback whale ¹	Mainland Mexico – CA-OR-WA	0	4	4	<1
	Hawai'i				<1
Minke whale	CA-OR-WA	0	4	4	<1
Killer whale	West Coast Transient	0	12	12	3.4
	Southern Resident Killer Whale	0	20	20	27
Dall's Porpoise	CA-WA-OR	4 ²	0	0	<1
Harbor Porpoise	Washington Inland	72	602	674	6.0
California Sea Lion	US	7	4,226	4,233	1.6
Steller sea lion	Eastern U.S.	0	619	619	1.7
Harbor Seal ³	Washington Inland Hood Canal	24	328	352	12
	Washington Inland Northern Puget Sound	5	4,153	4,158	26
	Washington Inland Southern Puget Sound	0	1,664	1,664	66
Northern elephant seal	California Breeding	0	4	4	<1

¹According to Curtis *et al.* (2025), the probability that whales encountered in the Salish sea are as follows: Central America DPS (Central America/Southern Mexico stock) (4.3 percent); Mexico DPS (Mainland Mexico - Oregon/California/Oregon stock) (45.7 percent); Hawaii DPS (Hawai'i stock) (50 percent). As

such we estimate that 2 takes by Level B harassment would be from the Mainland Mexico – CA-OR-WA stock, and 2 takes by Level B harassment would be from the Hawai'i stock while 0 takes by Level B harassment would be from the Central America/Southern Mexico stock. Because PSOs would not be able to identify the stock of an observed humpback whale, all take is assumed to be from either stock where some occurrence is predicted.

²As described above, because exposure estimates are low and the Level A harassment zones are larger than are likely observable during impact pile driving, NMFS authorizes these four takes as Level A harassment, acknowledging that instead the takes could be by the less severe Level B harassment.

³The Washington Inland Hood Canal stock of harbor seal is the only harbor seal stock expected to occur at NBK Bangor. The Washington Inland Northern Puget Sound stock of harbor seal is the only stock of harbor seal expected to occur at NS Everett. The Washington Inland Southern Puget Sound stock of harbor seal is the only stock of harbor seal expected to occur at NBK Manchester.

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.

The mitigation requirements described in the following were proposed by the Navy in its adequate and complete application or are the result of subsequent coordination between NMFS and the Navy. The Navy has agreed that all of the mitigation measures are practicable. NMFS has fully reviewed the specified activities and the mitigation measures to determine if the mitigation measures would result in the least practicable adverse impact on marine mammals and their habitat, as required by the MMPA, and has determined the proposed measures are appropriate. NMFS describes these below as mitigation requirements, and has included them in the IHA.

Shutdown and Clearance Zones

NMFS requires the establishment of both clearance and, where technically feasible, shutdown zones during project activities that have the potential to result in harassment of marine mammals. The purpose of “clearance” of a particular zone is to minimize potential instances of harassment and/or minimize the intensity of a harassment event by delaying the commencement of an activity if marine mammals are observed within the defined area. The purpose of a shutdown zone is to prevent or minimize a specific acute impact and/or minimize the intensity or duration of a harassment event by halting the activity that is already underway if a marine mammal is observed within the defined area (or in anticipation of an animal entering the defined area). For VHF, PR, and OW species, the clearance zone at all sites for all activities is equivalent to the shutdown zone and are not differentiated. For large whales and killer whales, a minimum clearance zone that is based on the distance that can be reliably observed by PSOs is established in addition to a shutdown zone.

For all large cetaceans and killer whales, the Navy plans to shut down at distances based on the largest estimated harassment zone for each activity. At Bangor, the largest

shutdown zone for these hearing groups is 11. km, which corresponds to the maximum Level B harassment distance during a vibratory pile driving activity. At Everett, the largest shutdown zone for these hearing groups is 5.4 km, which corresponds to the maximum Level B harassment distance during a vibratory pile driving activity. At Manchester, the largest shutdown zone for these hearing groups is 13.9 km (revised from 13.6 from the notice of proposed IHA), which corresponds to the maximum Level B harassment distance during a vibratory pile driving activity (now based on vibratory removal and installation of 42-in casings rather than 36-in casings). If a large whale or killer whale is observed approaching the Level B harassment zone (*i.e.*, the shutdown zone) the Navy would implement shutdown measures.

Recognizing that the entirety of the Level B harassment zone cannot practicably be monitored by PSOs, the Orca Network will be consulted prior to commencing pile driving each day, and Navy biologists and lead PSOs will have access to text updates (See **Monitoring and Reporting** section for more details). If any large cetacean or killer whale is documented near or approaching the shutdown zone (equivalent to the Level B harassment zone during most activities), pile driving would be delayed or stopped until the whale or whales have moved away.

For all other hearing groups and activities, the shutdown zones are primarily based on the estimated Level A harassment isopleths. However, in cases where it would be challenging to detect marine mammals at the Level A harassment isopleth, (*i.e.*, VHF cetaceans and PW species during impact pile driving of 30-in steel piles at NBK Bangor), smaller shutdown zones have been established (table 9).

Table 9 -- Minimum Clearance and Shutdown Zones (m)

Install or remove	Pile size and type	Method	Location	Minimum Clearance Zone - LF and HF (m) ¹	Shutdown zones (m)					Level B harassment zone (m)
					LF	HF	VHF	PW	OW	
NBK Bangor										
Removal	24-in Concrete	Vibratory	Olympic Pier	2,500	7,356	7,356	10	10	10	7,356
		Vibratory	EHW-1	2,500	7,356	7,356	10	15	10	7,356
Install	20-in Steel	Vibratory	Olympic Pier	2,500	5,412	5,412	10	10	10	5,412
		Impact		500	475	475	350	200	75	464
	30-in Steel	Vibratory	EHW-1	2,500	11,660	11,660	10	15	10	11,659
		Impact proofing		750	750	650	350	200	250	631
NS Everett										
Removal	12-in Steel	Vibratory	Piers A, B, and South Wharf	2,200	2,200	2,200	10	10	10	2,154
Install	18-in Steel	Vibratory	Piers A, B, and South Wharf	2,500	5,412	5,412	10	10	10	5,412
		Impact		150	140	140	190	110	50	136
NBK Manchester										
Removal	14-in H Steel	Vibratory	Fuel Pier	1,000	1,000	1,000	10	10	10	1,000
	36-in Steel Casing	Vibratory	Fuel Pier	2,500	13,600	13,600	30	50	15	13,594
	42-in Steel Casing	Vibratory	Fuel Pier	2,500	21,544 ²	21,544 ²	30	50	20	21,544 ²
Install	36-in Steel Casing	Vibratory	Fuel Pier	2,500	13,600	13,600	30	50	15	13,594

	42-in Steel Casing	Vibratory	Fuel Pier	2,500	21,544 ²	21,544 ²	40	70	30	21,544 ²
	24-in Concrete	Impact	Fuel Pier	100	90	90	140	80	35	86
Install and Removal	24-in Steel	Vibratory	Fuel Pier	2,500	5,412	5,412	10	20	10	5,412

¹For low frequency and high frequency cetaceans, a clearance zone is established based on the distance that can practicably be observed by PSOs. For VHF cetaceans, PW, and OW species, the clearance zones are equivalent to the shutdown zones and are not differentiated. Prior to commencing pile driving, PSOs must, at minimum, be able to determine that the clearance zones are clear of marine mammals. Shutdowns must be implemented should a marine mammal be observed entering or within a relevant shutdown zone.

²Underwater noise would be truncated by land at approximately 13.9 km from Manchester Fuel Pier at its furthest distance.

Pre-clearance Monitoring through Post-activity Monitoring

Prior to the start of daily in-water construction activities (*i.e.*, pile driving), or whenever a break in pile driving of 30 minutes or longer occurs, PSOs will observe the clearance zones (at minimum) (LF and HF) and shutdown zones and beyond to the extent that PSOs can see 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 clearance zones (at minimum) (LF and HF) and shutdown zones are clear of marine mammals.

Pile driving may commence following 30 minutes of observation when the determination is made that the clearance zones (at minimum) (LF and HF) and shutdown zones are clear of marine mammals. Monitoring of the clearance zone, shutdown zone, and beyond to the extent that PSOs can see, will continue for the duration of pile driving through 30 minutes post completion of pile driving activity. 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 delay or cessation of activity should the animal enter the zone.

If any marine mammal is observed entering or within the shutdown zones, pile driving activity must be delayed or halted. 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 relevant zone, (at minimum), or 15 minutes have passed without re-detection of the animal. If work ceases for more than 30 minutes, the pre-activity monitoring of the clearance zone (at minimum) (LF and HF) and shutdown zones, and beyond to the extent that PSOs can see, would commence.

Construction supervisors and crews, PSOs, and relevant Navy staff must avoid direct physical interaction with marine mammals during all construction activities. If a

marine mammal comes within 10 m of such activity, operations must cease and vessels must reduce speed to the minimum level required to maintain steerage and safe working conditions, as necessary to avoid direct physical interaction.

PSOs

The number and placement of PSOs (described in the **Monitoring and Reporting** section) would ensure that the clearance zone (at minimum) (LF and HF) and shutdown zones are visible, such that PSOs are confident of their ability to observe marine mammals at relevant distances. For VHF cetaceans, PW, and OW species, the clearance zones are equivalent to the shutdown zones and are not differentiated. For low frequency and high frequency cetaceans, the clearance zones are based on the distances that can be reliably observed by PSOs. However, PSOs would conduct monitoring beyond the clearance zones to the extent that they can see.

Soft Start

The use of soft-start procedures is believed to provide additional protection to marine mammals by providing warning and/or giving marine mammals a chance to leave the area prior to the hammer operating at full capacity. For impact pile driving, contractors would be required to provide an initial set of three strikes from the hammer at reduced energy, with each strike followed by a 30-second waiting period. This procedure would be conducted a total of three times before impact pile driving begins. Soft start would be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer. Soft start is not required during vibratory pile driving activities.

Bubble Curtain

A bubble curtain will be employed during impact installation or proofing of steel piles. Bubble curtains are not required during vibratory pile driving. If a bubble curtain is used, it would distribute air bubbles around 100 percent of the piling perimeter for the

full depth of the water column. The lowest bubble ring would be in contact with the mudline for the full circumference of the ring. The weights attached to the bottom ring would ensure 100 percent mudline contact. No parts of the ring or other objects would prevent full mudline contact.

NMFS conducted an independent evaluation of the measures, and 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.

The monitoring and reporting requirements described in the following were proposed by the Navy in its adequate and complete application and/or are the result of subsequent coordination between NMFS and the Navy. The Navy has agreed to the requirements. NMFS describes these below as requirements and has included them in the IHA.

Visual Monitoring

Visual monitoring will be conducted by trained PSOs positioned at suitable vantage points to be able to observe the entirety of the clearance zones (at minimum) (LF and HF), the shutdown zones, and the surrounding area to the maximum extent possible based on the required number of PSOs, required monitoring locations, and environmental conditions.

During all pile driving activities at all installations the Navy intends to employ three PSOs per location (for a total of nine PSOs on days with work at all three locations), to monitor the clearance zones (at minimum) (LF and HF), the shutdown zones, and the surrounding area. At least one PSO will be placed near the pile driving site during all pile driving and removal activities.

Monitoring will be conducted 30 minutes before, during, and 30 minutes after all in-water construction activities. In addition, PSOs would record all incidents of marine mammal occurrence, regardless of distance from activity, and would 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.

Coordination with Local Marine Mammal Research Network

The Orca Network receives sighting information from citizen scientists, vessel captains, and researchers throughout the Puget Sound area. Navy biologists and the lead PSO will have access to the Orca Network notification texts, and they can call into the notification system. Prior to pile driving each day, the lead PSO will contact the Orca Network and monitor social media to review updated sighting locations of large whales, including ESA-listed SRKWs and humpback whales. If any large whale or killer whale species are reported approaching, or within the shutdown zone, pile driving would be delayed until the whale or whales have moved away.

Acoustic Monitoring

The Navy may implement hydroacoustic monitoring during impact pile driving of sheet piles with a bubble curtain to verify the sound source levels associated with the use of this attenuation device with this pile type. If hydroacoustic monitoring is planned, Navy would submit a hydroacoustic monitoring plan to NMFS for review and approval no less than 90 days prior to implementation of sound source verification activities. The Navy would conduct its activities consistent with the NMFS-approved plan.

Reporting

The Navy will submit a draft marine mammal monitoring report within 90 calendar days after the completion of pile driving activities, or 60 days prior to a

requested date of issuance of any future IHAs for projects at the same location, whichever comes first. The report will include an overall description of the construction work completed, a narrative regarding marine mammal sightings, and associated PSO data sheets (in a queryable electronic format). 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) number of 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 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 from activities to marine mammals and distance from the marine mammals to the observation point; (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 estimated harassment zone; (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 estimated 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.

Should acoustic monitoring be conducted, an acoustic monitoring report(s) must be submitted, at minimum, on the same schedule as visual monitoring reports (*i.e.*, within 90 days following the completion of activity). The estimated harassment and clearance/shutdown zones may be modified with NMFS' approval following NMFS' acceptance of an acoustic monitoring report. The acoustic monitoring report(s) would need to be submitted to NMFS for review and approval prior to any adjustments to the harassment zones. The acoustic monitoring report must contain the informational elements described in the acoustic monitoring plan.

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 Navy must report the incident to the NMFS OPR (*PR.ITP.MonitoringReports@noaa.gov* and *itp.fleming@noaa.gov*) and the West Coast Region Stranding Hotline as soon as possible. If the death or injury was clearly caused by the specified activity, the Navy 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 this IHA. The Navy 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 animals(s), if alive;
- Photographs or video footage of the animal(s), if available; and
- The 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 2, 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 and removal associated with this project, as outlined 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 and, for Dall's porpoise, harbor porpoise, California sea lions and harbor seals, Level A harassment, from underwater sounds generated by pile installation and removal. Potential takes could occur if individuals are present in the ensonified zone when these activities are underway.

No serious injury or mortality is expected, even in the absence of required mitigation measures, given the nature of the activities. Further, for six species of marine mammals (all low frequency and high frequency cetaceans, Steller sea lions, and northern elephant seals), no take by Level A harassment is anticipated, due to the rarity of these species in the project areas (Steller sea lions and northern elephant seals), or due to the relatively small Level A harassment zones (low and high frequency cetaceans). The likelihood of take by Level A harassment occurring is further reduced by Navy's plans to implement mitigation measures such as shutdown zones that encompass all or a portion of the Level A harassment zones (see **Mitigation** section).

Level A harassment is authorized for VHF cetaceans (Dall's porpoise and harbor porpoise) and the pinniped species that commonly occur in the project areas (California sea lions, and two out of three stocks of harbor seals). Any take by Level A harassment is expected to arise from, at most, a small degree of AUD INJ (*i.e.*, minor degradation of hearing capabilities within regions of hearing that align most completely with the energy produced by impact pile driving such as the low-frequency region below 2 kHz), not severe hearing impairment or impairment within the ranges of greatest hearing sensitivity. Animals would need to be exposed to higher levels and/or longer duration than are expected to occur here in order to incur any more than a small degree of AUD INJ.

Additionally, the amount of take by Level A harassment authorized for these four species is very low. NMFS expects no more than 4 takes by Level A harassment for Dall's porpoise, 72 takes by Level A harassment for harbor porpoise, 7 takes by Level A harassment for California sea lions, and 29 takes by Level A harassment for harbor seals (across 2 out of 3 stocks). For all hearing groups, if hearing impairment occurs, it is most likely that the affected animal would lose only a few dB in its hearing sensitivity. Due to the small degree anticipated, any AUD INJ potentially incurred would not be expected to affect the reproductive success or survival of any individuals, much less result in adverse impacts on the species or stock.

Additionally, some subset of the individuals that are behaviorally harassed could also simultaneously incur some small degree of TTS for a short duration of time. However, since the hearing sensitivity of individuals that incur TTS is expected to recover completely within minutes to hours, it is unlikely that the brief hearing impairment would affect the individual's long-term ability to forage and communicate with conspecifics, and would therefore not likely impact reproduction or survival of any

individual marine mammal, let alone adversely affect rates of recruitment or survival of the species or stock.

Effects on individuals that are taken by Level B harassment in the form of behavioral disruption, on the basis of reports in the literature as well as monitoring from other similar activities, would likely be limited to reactions such as avoidance, increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (*e.g.*, Thorson and Reyff, 2006). The Navy has conducted multi-year activities potentially affecting marine mammals at some of the installations considered herein (NBK Bangor and NBK Manchester). Reporting from these activities has similarly reported no apparently consequential behavioral reactions or long-term effects on marine mammal populations (Callaghan *et al.*, 2024; Hamer Environmental, 2021; Sandoval and Johnson, 2022; DoN, 2022; DoN, 2021). Most likely, individuals would simply move away from the sound source and temporarily avoid the area where pile driving is occurring.

If sound produced by project activities is sufficiently disturbing, animals are likely to simply avoid the area while the activities are occurring. We expect that any avoidance of the project areas by marine mammals would be temporary in nature and that any marine mammals that avoid the project areas during construction would not be permanently displaced. Short-term avoidance of the project areas and energetic impacts of interrupted foraging or other important behaviors is unlikely to affect the reproduction or survival of individual marine mammals, and the effects of behavioral disturbance on individuals is not likely to accrue in a manner that would affect the rates of recruitment or survival of any affected stock.

Some individual marine mammals in the project areas, such as California sea lions, harbor seals, or harbor porpoises, may be present and be subject to repeated exposure to sound from pile driving activities on multiple days. 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 an overall stock is unlikely to result in any effects on rates of reproduction and survival of the stock.

Additionally, pile driving and extraction would not likely occur every day at each installation, and these individuals would likely return to normal behavior during gaps in pile driving activity within each day of construction and in between work days. As discussed above, individuals could temporarily relocate during construction activities to reduce exposure to elevated sound levels from the project. While vibratory driving associated with some project components may produce sound at distances of many kms 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 displaced by project sound would simply avoid the area.

The project is also not expected to have significant adverse effects on affected marine mammals' habitats. The project activities would not modify existing marine mammal habitat for a significant amount of time. The activities may cause a low level of turbidity in the water column and some fish may 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 the exception of gray whales and SRKWs, there are no habitats of known particular importance to marine mammals), the impacts to marine mammal habitat are not expected to cause significant or long-term negative consequences.

There is a BIA for feeding gray whales that intersects with the project area associated with NS Everett, but it is active between February and May (Calambokidis *et*

al., 2024), which does not intersect with the majority of the time period when the project activities are planned (mid-July through mid-February at NS Everett). This suggests that impacts from the project would have minimal to no impact on foraging gray whales and would therefore be unlikely to affect reproduction and survival.

ESA critical habitat for SRKW occurs in Puget Sound (see the **Description of Marine Mammals in the Area of Specified Activities** section of this notice) but excludes the areas around military installations which would be most impacted by pile driving sound. 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.

As described above, increased sightings of gray whale strandings have been reported in Puget Sound. We do not expect authorized takes to exacerbate or compound upon these increased strandings. As discussed above, no injury, serious injury or mortality is expected or authorized, and the impact of Level B harassment takes of these species will be minimized through the incorporation of mitigation measures. The strandings do not provide cause for concern regarding population-level impacts. Despite the strandings, the Eastern North Pacific population of gray whales remains healthy.

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

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

- No serious injury or mortality is anticipated authorized;
- Any Level A harassment is anticipated to cause only slight auditory injury, including PTS of a few decibels within the lower frequencies associated with impact pile driving of 18-in steel at Everett and 30-in steel at Bangor, and not encompassing a species' full hearing range;
- At worst, the anticipated incidents of Level B harassment would result in temporary behavior modifications or a small degree of TTS that would resume to baseline at the cessation of activities or as animals move away from the source;
- The project areas at all three installations are industrialized; therefore, individuals taken are likely habituated to anthropogenic activities and behavioral reactions are expected to be minor and temporary;
- The project areas at all three installations are small relative to the overall habitat range of each species, and overlap with known habitats of particular importance is minimal;

- Effects on marine mammal prey species from the activities are primarily expected to be short-term, and 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; and

- The mitigation measures are expected to minimize the severity of the effects of the specified activity.

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

Small Numbers

As noted previously, only take of small numbers of marine mammals may be authorized under section 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted number of individuals to be taken is fewer than one-third of the species or stock abundance, the take is considered to be of small numbers (see 86 FR 5322, January 19, 2021). Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

We authorize incidental take of 15 marine mammal stocks (table 8). The total amount of taking authorized is less than 33.3 percent for 14 stocks, which meets the definition stated above.

Though the most recent SAR includes an unreliable population estimate for the Washington Inland Southern Puget Sound stock of harbor seal because it is more than 8 years old, Pearson *et al.* (2024) reports that the peak population estimate for this stock is 2,832. The total number of authorized takes for the Washington Inland Southern Puget Sound stock of harbor seals, if assumed to accrue solely to new individuals, is 66 percent of the total stock abundance. However, these numbers represent the estimated incidents of take, not the number of individuals taken. Harbor seals in the Puget Sound region are known to exhibit site fidelity and generally remain close to their primary haulout location; those that move further from their primary haulout tend to stay at a new location for several weeks (Peterson *et al.*, 2012). Given the relatively short duration of the projects at each site, NMFS believes that it is highly unlikely that each exposure would affect a new individual. Rather, NMFS predicts that a relatively small subset of this population will be harassed by project activities.

Given that the specified activity will be stationary within an area not recognized as being of any special significance that would serve to attract or harbor seals, we therefore believe that the estimated numbers of takes, were they to occur, likely represent repeated exposures of a much smaller number of individual harbor seals and that these estimated incidents of take represent small numbers of harbor seals.

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

Unmitigable Adverse Impact Analysis and Determination

There are no relevant subsistence uses of the affected marine mammal stocks or species implicated by this action. Therefore, NMFS has determined that the total taking

of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA; 16 U.S.C. 1531 *et seq.*) requires that each Federal agency ensures 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 of endangered or threatened species.

NMFS authorized take of SRKW, as well as one stock of humpback whales (Mainland Mexico – CA-OR-WA), 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 this IHA. On September 18, 2026, WCR concluded that NMFS' current action remains covered by the programmatic Biological Opinion (WCRO-2016-00018) completed for the issuance of regulations preceding this IHA (83 FR 9366, March 5, 2018), and that reinitiation of the consultation is not required. WCR specified that the new IHA is 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 review our proposed action (*i.e.*, the issuance of an IHA) and alternatives with respect to potential impacts on the human environment.

This action is consistent with categories of activities identified in Categorical Exclusion B4 (IHAs with no anticipated serious injury or mortality) of the Companion

Manual for NAO 216-6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has determined that the issuance of this IHA qualifies to be categorically excluded from further NEPA review.

Authorization

NMFS has issued an IHA to the Navy for the potential harassment of small numbers of 10 marine mammal species incidental to conducting the 2026 MPR Project in Puget Sound, Washington, Washington, that includes previously explained mitigation,

Dated: September 25, 2026.

Kimberly Damon-Randall,

Director, Office of Protected Resources,

National Marine Fisheries Service.

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